SMART CARD NEWS

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France / Belgium Launching Healthcare Schemes

In Europe, France and Belgium are launching major national schemes in the healthcare field. France is now readying to roll-out its Sésam / Vitale programme in which the entire population will receive a family healthcare card before the end of next year and then an individual card before the end of 2000.

Belgium, in joint project between the government and Mutualites Belges, representing the seven big Belgian insurers who manage state and personal healthcare programmes will launch a Social ID Card starting December 1997 and plans to issue 10.5 million by mid-1998.

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Important Announcement
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National Healthcare Schemes

Continued from page 141

The French healthcare insurance card has a history going back to the first trial in 1986 which was followed by a series of trials leading to refinements in the scheme.

The Sésam / Vitale Groupement d'Intéret Economique (GIE) represents the National Salaried Employees' Health Insurance Fund (CNAMTS), the National Independent Professions Health Insurance Fund (CANAM), the Social Agricultural Mutual Insurance Central Fund (CCMSA), the National Union of Special Regimes (UNRS), the Farmers' Health Insurance Grouping (GAMEX), the Health Insurance Fund for Ministers of Religion (CAMAC), the Civil Servants' Mutual Insurance Fund (MFP). The health professionals are represented by the National Centre of the Medical Professions (CNPS).

Sésam / Vitale is based on the secure exchange of electronic data between healthcare professionals and the compulsory and complementing social insurance organisations. The card contains the name of the person insured, social security number, identity of beneficiaries, type of social security cover, social security fund, basic cover and complementary cover, if applicable, rate of reimbursement. The information enables immediate registration of the patient's entitlements and electronic transmission of the treatment form.

National roll-out will be in two stages. The first card to be issued will be a family card with some 12 million being distributed. In the second stage the family card will be replaced with a second generation, technically enhanced Smart Card for individuals amounting to around 55 million cards by the year 2000.

Smart Cards of different types are being supplied by Schlumberger, Bull SA-ORGA, CP8 Oberthür and Solaic.

Schlumberger says when the Vitale project migratesto the second stage, with the entire population of France receiving individual electronic national health cards, increased memory capacity on the cards will enable patients' medical records to be stored enhancing the quality of treatment.

An emergency file containing essential data like blood group and allergies will also be included.

Ascom Monétel has announced it is to supply "several thousand" Twin 10 "intelligent" card readers for healthcare professionals and 5,000 consultation stations for use by the public.

The Twin 10 card readers are based on Ascom's EFT10 payment terminal and can be used to read the cards of healthcare professionals and people insured under the various healthcare schemes, to fill in and safeguard the electronic healthcare forms.

The consultation stations will enable people in the national health scheme to check the content of their card and update the data automatically in direct liaison with the health insurance centres. The stations have been designed for use by the general public: Minitel-style screen, simplified keyboard with just seven keys, ergonomic card reader, and protection against vandalism. Ascom will also supply the national adminstration platform for the 5,000 terminals.

Dassault Automatismes et Telecommunications will also be supplying card readers for the healthcare professionals.

Social ID Card for Belgium

Belgium is launching a nationwide Social ID Card and plans to issue 10.5 million cards by the end of June 1998.

The GPM (Gemplus Protected Memory) cards with 1K bytes EEPROM will contain the insured persons name, address, social ID number and the name of the healthcare insurer.

Initially the card will be used simply for identification, but later may be used for electronic prescriptions.

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LT to Decide on Prestige Contract

London Transport is in the final stages of deciding if it will award the multi-million contract for a new automatic ticketing system for London's buses and Underground to the only private sector bidder.

LT emphasised to *SCN* that it has not yet awarded the contract to TranSys a consortium of EDS (Electronic Data Systems) Ltd., ICL Enterprises, Cubic Corporation and W S Atkins Consultants Ltd. A decision is not expected before October this year.

Initially, LT, which is seeking a partnership with the private sector to finance its Prestige ticketing project, anticipated four bids from consortia, including players like IBM and BT, but only the TranSys bid was submitted.

Prestige is a new automatic ticketing system for London Underground and London buses which is likely to use contactless Smart Cards with the benefits of holding more information than magnetic stripe cards and having the capability of being read without taking them out of a wallet or bag.

Prestige aims to give LT's customers a ticketing system that is quick, convenient and easy to understand while providing improved information about customers and their travel patterns.

Ticket fraud

Smart Cards could also help to reduce ticket fraud which last year is said to have cost LT about £33 million. By using Smart Cards, there is also an opportunity to integrate the ticketing system with products from other organisations.

TranSys plans to invest £180 million in a private finance partnership with LT. All of London Underground's 273 stations will be fitted with the latest gating technology, new passenger operated ticket selling devices with touch screen, multi-lingual interfaces and, in the ticket offices, new tills to allow a wider range of payment methods.

All 6,000 London buses, operated by over 40 independent companies, will be equipped with new ticketing machines, and there will be an interface with British Rail.

Ian Coucher, of EDS, Managing Director for TranSys, said: "Prestige is an exciting initiative bringing immense benefits to London Transport and its passengers. Travellers in London will be able to use the most sophisticated ticketing system in the world. Prestige represents a significant step towards London Transport's vision of an integrated public transport service and we are proud to be part of that vision."

EDS and Cubic Corporation each hold a 37.5 per cent stake in TranSys. ICL has 20 per cent and WS Atkins has five per cent.

If the contract is awarded to TranSys it will be responsible for the financing of the programme to design, build, maintain and operate the Prestige service. EDS would undertake all operational responsibilities for delivering the system while Cubic would supply and maintain all new technology. ICL would deliver EPOS, till technology and new central computing systems. WS Atkins would provide traffic planning and consultancy services to TranSys.

TranSys would be paid on a performance related basis after the system is up and running - payments being linked to the availability of the system and usage by bus and underground passengers.

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Vietnamese Contract for Ascom

Ascom Payphone Systems has won a contract with VNPT, the Vietnamese national telecom operator, to supply 600 Proxim units with the Eurochip card as well as a national off-line supervision system and six provincial supervision systems.

This equipment will be manufactured in France at the Ascom Monétel plant in Valence for delivery in September.

VNPT plans to install 6,500 payphones and 61 supervision systems (one for each province) in stage two starting in September this year.

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Chip Giants' Contactless Plan

Motorola Semiconductor Products and SGS-Thomson Microelectronics - leading suppliers of Smart Card chips - have announced that they have agreed to ensure that their contactless Smart Card microcontroller products are compatible and interoperable. The technical collaboration will also cover Smart Card terminals.

The companies say that their contactless products will conform to the emerging ISO/IEC 14443 Contactless Integrated Circuit Cards standard currently being developed by industry task forces.

Both see a major market for contactless and combined contact and contactless Smart Cards. The ability to replace existing ticketing systems with a multi-application Smart Card which acts as both a transport pass in contactless operation and as an electronic purse contact card is likely to appeal to public transport operators, retailers and financial institutions.

The first products from both companies will begin production during 1998. Motorola's single-chip contact and contactless microcontroller will offer 4K bytes EEPROM, 20K bytes ROM and 256 bytes RAM.

The first product from SGS-Thomson will be a contact and contactless Smart Card chip, the ST16RF42 featuring an MCU architecture which has already been used in products that have received ITSEC level E3 certifications. It offers 2K bytes EEPROM, 16K bytes ROM and 380 bytes of RAM. This chip will be rapidly followed by a second offering 8K bytes of EEPROM.

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NCR/Intellect will Bid for MPC

Australia-based Intellect and NCR Malaysia are to bid for the national Multi Purpose Card (MPC) in Malaysia. The card and the associated systems will enable Malaysians to carry out a wide range of applications from electronic purse to acting as a driver's licence and a national ID card.

The two companies announced the signing of a formal partnership agreement last month and a day after the Malaysian Prime Minister, Dr Mahathir Mohamad, announced the release of a Request for Proposal for the MPC.

Geoff Gander, Intellect's General Manager for the Asia Pacific, said: "It is a tremendous opportunity for our two companies to work together on the ground floor of one of the most exciting technological developments not only in the Asian Pacific region, but worldwide."

He said that others would join the NCR/Intellect consortium in the near future.

En Khairun Zainal Makhtar, Managing Director of NCR Malaysia, said they would be completing a comprehensive response for the Malaysian government over the next few months. It would combine Intellect's technology and experience in Smart Card solutions implementaton, with NCR's strength in financial systems.

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Smart Card Connectors

The latest Molex family of 6- and 8-way IC Card connectors from Hawnt Electronics are compact miniature devices suited to long-life operation in space-limited applications.

The 8-way devices have been developed to meet all pay-TV and set top box specifications, while the 6-way components comply with digital GSM requirements relating to SIM (Subscriber Identity Module) interconnection in mobile phones.

Designed as surface mount devices, the new connectors have a variety of options to suit "snap-in", soldering or compression-mounting techiques. The 8-way devices can also be supplied with a Smart Card to PC Card adapter.

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Siemens to Produce "Java" Chips

Siemens Microsystems has signed an agreement to license Java Technology from Sun Microsystems to produce a new generation of Smart Card chips that will accelerate execution of the JavaCard instruction set. The new chips, based on Sun's Java technology, are expected to be used in a variety of Smart Card applications including banking, electronic commerce, mobile communications and healthcare.

Ulrich Hamann, General Manager and Vice President of Siemens Chip Card ICs, said: "The Java-enabled chip technology increases the information capacity of the chips. Consequently it allows more information and additional functions to be included, all on the same Smart Card.

"Java technology is a perfect match with our plans to develop a new Smart Card integrated circuit platform for secure Internet commerce products. Java's open software and the ability to upgrade and load in new applications after the cards are issued will revolutionise the way people live and work."

The new chip platform will be based on Siemens' recently announced high-end Triple E line, SLE66CXXs (*SCN June 1997, page 112*). The 16-bit card will offer a bilingual instruction set for 8051 as well as Java code, and will be optimized to directly execute Java applications on the industry standard JavaCard platform. Siemens says the product is expected to be available in volume quantities by mid-1998.

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G&D to use Java Technology

German Smart Card manufacturer, Giesecke & Devrient, has announced that it will expand its Smart Card product line by developing a Java-capable Smart Card and applications based on the Java Card API following the signing of a license agreement with Sun Microsystems, Inc.

G&D says it intends to take an active role in the development of Java Card technology based on its secure STARCOS operating system.

"Our aim is to expand the product line of high security Smart Cards by taking part in global standardisation," said Jürgen Nehls, Head of G&D's Cards and Card Systems Division.

"With Java G&D will have easier access to new markets such as Internet payment, electronic commerce and loyalty programs, thereby strengthening its market postion," he explained.

The Munich company will present its first applications on a Java Card at the CeBIT '98 fair in Hannover, Germany.

ImagineCard Web Application

Gemplus has announced the launch of the first ImagineCard Web application, a service that enables the company's value-added resellers (VARs) to securely access a page on the Gemplus web site dedicated to supplying information to its third-party partners.

Using a Gemplus GPK2000 Smart Card as an ID key for remote authentication, the VARs can access program support information such as new product plans, the status of product upgrades, training schedules and the latest technology developments. Gemplus expects to extend the service to provide additional resources to its strategic partners and major customers by the end of the year.

The company says the availability of the secured on-line resources will provide partners with easy and timely access to information that is both confidential and tailored to the partner's needs, as the Smart Card will customise access to the site's resources based on company profile.

Gemplus is part of the ImagineCard Alliance with Hewlett-Packard and Informix Software, Inc., which has developed solutions to make web and corporate services more secure.

The Gemplus application uses ImagineCard Web 1.0 on an HP9000-712 server, running HP-UX 10.2 and the Informix On-Line Dynamic Server database. The GPK2000 2K bytes EEPROM Smart Card has a cryptographic co-processor for RSA-based digital signature authentication.

Contact: Flavie Gil**, Gemplus - **Tel: +33 (0)4 42 36 56 83. E-mail: flavieg@ccmail.edt.fr

Loyalty Scheme in Taipei

ChinaTrust Commercial Bank and Hang Ten Enterprises clothing store, Hypercom and Gemplus joined forces to launch the first implementation of Visa's chip loyalty specifications in Taipei last month.

The specifications have been created to assist Visa Member banks to take advantage of chip card technology and to help create a global platform to enable interoperability between chip loyalty programmes in different markets.

Cardholders receive rewards equal to five per cent of purchase amounts, up to 10 per cent discount from points accumulated, and points based on both transaction amounts and frequency of purchases. An extra discount is given on the cardholder's birthday.

The card also includes the credit function on the chip using the Visa Easy Entry Standard, a basic level of chip migration of the credit function which duplicates the data from the magnetic stripe without adding any additional security features. At a Hang Ten outlet, the credit transaction takes place on the chip, but at other outlets the credit transaction utilises the magnetic stripe.

The ChinaTrust Hang Ten Visa card can be used at any of Hang Ten's 200 stores in Taiwan and its other retail store brands, AGE, Michel Rene and Valentino jeans.

It is planned to expand the Hang Ten programme to the clothing chain's stores in Singapore, Hong Kong and the Philippines.

Contact: Jeff Perlman, *Visa International Asia-Pacific* - ***Tel: +65 437 5513. Fax: +65 437 5567.***

Combined Card Launch in Spain

Visa España member banks and transport authorities in the cities of Madrid and Barcelona are to pioneer a combined contact and contactless Smart Card in Spain.

The banks are planning to add a contactless option to the Visa Cash card with trials starting later this year. The bank card chip will work as a contact card in some sectors and as a contactless card for travel in buses, the underground system and trains.

Cardholders will be able to load the card with value in a network of ATMs and use it like a transport card or to pay for other services and purchases at retail outlets.

Grupo Motorola Semiconductores has been selected to develop the new chips. Visa says the transport card will have a single contactless microcomputer with 4K bytes EEPROM, 20K bytes of ROM and 256 bytes of RAM.

Contact: Juan José Berganza, *Visa España* - ***Tel: +34 1 346 5300. Fax: +34 1 346 5482.***

Roxburgh Chip Card Connector

Roxburgh Electronics has launched a new low cost AMC 130 vandal resistant chip card connector designed for public terminal applications.

ISO 7816 compatible, the device is designed for 500,000 operations and offers the option of front/side mounting, M3 inserts, fraud detection and a patented security gate.

Measuring 66mm x 60.9mm x 25.4mm, the AMC 130 features a large debris slot; half card dropout for jam-proof operations.

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De La Rue Card Systems

De La Rue Fortronic, based in Fife, Scotland, is now to be known as De La Rue Card Systems as part of a worldwide strategy to take advantage of the De La Rue brand name.

The company, which specialises in transaction systems, currently employs over 200 people at its purpose-built site in Scotland and has offices in Germany, the United States and Hong Kong.

Contact: Gillian Brown, *De La Rue Card Systems* - ***Tel: +44 (0)131 459 8800. Fax: +44 (0)131 479 8321. KE-mail: gb@delarue.demon.co.uk***

Design Award for DataCard

Right:
Jigsaw Modular POS Solution Standalone Terminal [DataCard]

DataCard's Jigsaw modular point of sale solution was selected as one of the best-designed products for 1996 by an international panel of industrial design experts. The panel reviewed more than 1,400 entries and presented the top products with the Essen Red Dot Design Innovation Awards.

Jigsaw was chosen for its aesthetic appeal and its modular architecture that allows customers to configure the product to the specific needs of the cashier and retail customer. It was also praised for "easy card swipes, Smart Card inserts and keypad usage."

Tom Kettell, Marketing Vice President of DataCard's financial systems business unit, said Jigsaw's design was contributing to sales worldwide that had exceeded the most aggressive forecasts.

"For a long time, people thought they had few choices when they needed transaction terminals and PIN pads," he said. "Most of the products looked and performed the same, but when they see Jigsaw, they realise they do not have to settle for the same old boxy products."

Contact: Mark Iverson, *DataCard* - ***Tel: +1 612 988 1763. E-mail: mark-iverson@datacard.com***

BIB to use TSI Software

British Interactive Broadcasting (BIB), the interactive TV services consortium, has selected Thomson Sun Interactive's (TSI) OpenTV to provide set top box system software for its digital, interactive TV services in the UK.

The OpenTV software includes an application programming interface (API) which will form part of the technology package for BskyB's digital services launch in the Spring of 1998.

Viewers will be able to access interactive services including home shopping, banking, travel and holiday services, educational applications and local community and national public information services.

In addition, working with Oracle Corporation, OpenTV will enable subscribers to connect to an Internet service and have e-mail capability through their televisions.

BIB's shareholders are BSkyB, BT, Midland Bank and Matsushita Electric Industrial Co.

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BTG to License Cryptag Census

BTG, the UK-based technology transfer company, is to license the Cryptag Census tagging system developed by Identec Ltd to manufacturers worldwide. The radio frequency identification is said to be capable of reading 55 tags per second with an error rate of 1:100 million while being virtually impossible to counterfeit.

Cryptag Census can be used for monitoring the movement of assets and/or associated personnel, access control applications at secured sites such as government offices, power stations, military camps, police stations, hospitals and financial institutions. Tagged assets could be antiques, works of art, weapons, bank notes in transit, laptop computers and other items liable to be stolen.

Other uses are said to include safety related applications where it is essential to know where people are. These include "roll-call" systems for deep mines and personnel tracking in oil refineries and chemical works, as well as time and attendance systems.

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QuickLink Roll-out in NSW

QuickLink, Australia's largest multi-function, reloadable Smart Card, is being rolled out in Perth, Western Australia, in a contract awarded by the New South Wales Government.

The system is based on the Banksys, Belgium-based technology and around 750,000 Smart Cards will be issued before the end of this year. This will represent the initial card base for the national roll-out and is expected to increase to over three million cards by early 1998.

ERG's subsidiary, QuickLink Card Systems Ltd (QuickLink), will be the operator of the system and provide the network in which the cards are used. Cardholders will be able to use the electronic purse cards at various outlets and obtain benefits through discounts and loyalty schemes. Value can be loaded onto the card using cash or by means of debit/credit cards.

The QuickLink system, which is designed as an open system, supports multiple issuers of cards such as government agencies and financial and non-financial organisations.

QuickLink won the NSW Government contract to implement a trial Smart Card system in Newcastle to evaluate the technology in government and other applications. It involved the NSW transport authorities, major retailers including McDonalds, Coca Cola, BP and Telstra and over 200 smaller retailers including delicatessens, news agents, restaurants and coffee shops.

The trial is reported to have achieved its objectives of testing the technology and cardholder and consumer acceptance, leading to the start of the national roll-out.

ERG is an Australian company specialising in Smart Card, automatic fare collection and telecommunications systems and equipment. It is currently implementing the world's largest integrated contactless Smart Card fare collection system in Hong Kong involving underground trains, railways, bus and ferry services.

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SET Launch in Japan

The first purchase using the Secure Electronic Transaction (SET) standard in Japan was made in Tokyo early this month by a Toshiba Corporation executive who purchased a bottle of Japanese Sake from "Click & Shop," the Internet mall managed by the Hankyu Corporation for Visa and Toshiba's joint project, Smart Commerce Japan.

It is the first SET pilot to use multiple software vendors which include IBM, Netscape and CyberCash to test interoperabilily of different software and technologies.

The Hankyu Persona Visa Card which is being issued in the Smart Commerce Japan pilot will feature the credit function on an IC chip. In the initial phase, 200 employees of Visa, Toshiba and Hankyu are utilising the SET protocol for Internet shopping.

In phase two, to be launched in October, 5,000 Visa chip cards will be issued to the general public. One thousand cardholders will be provided with integrated circuit chip card reader/writers to attach to their personal computers for chip-based secure electronic commerce.

The other cardholders will be able to make chip-based secure electronic purchases at 30 kiosks located throughout the Kobe and Osaka area of Japan and purchases from home using the SET protocol at their computer.

In phase three, in December, a limited test of Visa Cash over the Internet will be conducted

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New ID Card for Gemplus Staff

GemTwin, the recently developed twin chip card from Gemplus, is to be issued to all its employees worldwide. One chip takes care of contact functions such as electronic purse or computer access control while the second supports non-contact applications such as access control for personnel.

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Gambling on the Net

Right:
Two images from "Casino on Net" [ICTS]

Far Right:
The University of York: The first campus to accept the Mondex card for payment

Below Right:
A vending-machine at the University of York which accepts the Mondex card [Mars Electronics International]

Joining the growing number of 'virtual' pastimes, is the recently launched 'Casino-on-Net'. Unlike existing Internet based casinos, the 'Casino-on-Net' is the first to offer multi-user facilities. This enables individuals from around the world to see, talk to and play against each other.

The system operates using a CD-ROM which carries many of the system's utilities and multimedia files; greatly increasing the performance and speed of on-line the games.

New members are issued $1000 in virtual cash to play with. Once a player is comfortable with the system they may open an account with the Casino and begin to gamble with real money. Effectively, the Casino acts as a bank for the players.

At present, the system uses certain credit cards and cheques which are sent between player and Casino. Clearly, this process is far from ideal or secure but the Casino is currently introducing a Smart Card solution based on Cryptochip Full RSA Authentication & Signature Technology. This will be used to validate a player's membership, credit card and bank details. Also, full electronic purse facilities are being evaluated for future use. Both card systems will operate via a specially developed keyboard reader that requires no 'hard' installation

At present, three games are available; black-jack, roulette and slot machines. Poker will be added shortly. The system has now been operating for two months and already has thousands of members. Further details and a version of the 'Casino on Net' can be downloaded from *http://www.casino-on-net.com*

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Smart Snacks for Students

Mars Electronics International has successfully completed a major installation of its card readers to snack vending machines at the University of York. The site is one of two university implementations by Mondex - the other is Exeter (*see SCN October 1996*).

Mars Electronics 'MultiCard Smart' vending card reader was type approved for compatibility with the new Mondex Card in March of this year (*see SCN February 1997*).

Students can now borrow books, log onto computers and pay for food using the Mondex Card. Further applications to be introduced include launderettes and copying machines.

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Boots Advantage Card

Boots the Chemist is launching their Advantage Card nationwide across the UK this month. Roll-out had been announced in July, but Boots had refused to name the exact date (*see SCN July 1997*)

Left:
Boots' Advantage Card in production [Boots]

Advantage Card holders will be able to collect one point for every 25 pence spent; a far better rate than is currently provided by many of the supermarket loyalty schemes.

Boots customers will be able to treat themselves to a wide variety of items listed in a special Advantage Card Guide.

A local paper in Nottingham states that the card launch will cost Boots £52 million. Marketing alone will account for £24 million. Boots believes the card will help sales grow by 4% and over eight million applications for the card are expected in the first year of the scheme.

GPT Card Technology has won a £4 million order to supply 80% of the Smart memory cards to be used in the Advantage scheme. Gemplus will provide the remaining 20% of cards.

Siemens Semiconductors has been named as the exclusive supplier of the memory chip to be used in the loyalty programme. Siemens will supply more than six million of its SLE4443 secure memory ICs which offers 2Kbits of secure memory.

The launch of the Advantage Card is the first example of a 'high street name' choosing Smart Card technology over the more conventional magnetic stripe card. Following the announcement Siemens said they expect "the market for smart loyalty cards to increase rapidly".

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Road Tolling in Leicester

Leicester City Council is to introduce the UK's first pay-as-you-drive pricing experiment as part of a Government and European Commission-backed research programme. The pilot will involve 100 volunteers who regularly commute into the city along the A47 western approach road.

Each volunteer's car will be fitted with an On Board Unit (OBU) - an automatic radio identification device the size of a cigarette packet mounted on the windscreen behind the rear view mirror. At the start of each journey the volunteer will insert a Smart Card into the OBU. The card is pre-programmed with monetary value. Each time the volunteer drives past a roadside radio beacon they will hear a bleep. This means money has been automatically deducted from the card.

The scheme will link Smart Card technology with the latest techniques in pollution monitoring, computerised traffic signal systems and 4km of priority bus lanes.

During the experiment a number of different pricing scenarios will be investigated to assess the price level at which drivers decide to change their mode of transport. The amount of money deducted could be increased on days when air pollution and traffic congestion are severe - the toll could be as high as £10.

Volunteers could avoid these tolls by choosing to use their Smart Card to pay for a cut-price park and ride service operating from a purpose built site on the edge of the city. Commuters will be able to leave their cars in a secure car park free of charge. The service will run every ten minutes using 24 hour bus lanes. A similar experiment in Stuttgart, Germany showed that week day card use in the city centre fell by 15%.

The Department of the Environment, Transport and the Regions (DETR), Leicester City Council, Transport Research Laboratory, Howard Humphreys Transport Planning and Leicester County Council are all involved in the £2.5 million project.

Contact: Eddie Tyrer, *Leicester City Council.* ***Tel: +44 (0)116 254 9922. Fax: +44 (0)116 254 9782***

Electronic Salary for Employees

Banco do Ceara, the Brazilian state bank in Caera, and responsible for paying 120,000 state employees' monthly salaries, is turning to Smart Card technology to improve profitability.

The problem is that most employees earn less than $400 per month and around 80,000 have no cheque account and only use the bank to withdraw their salaries at the start of the month.

Now FDS in Brazil has come up with a solution - a Smart Card-based system with a network of 54 automated banking terminals in workplaces and major shopping centres.

State employees can now use the card to calculate how much they have earned by converting hours to cash and then withdraw a corresponding amount from the ATM.

As the system expands to points of sale, they will be able to use the card as an electronic purse to pay for food and other items directly.

Contact: Flavie Gil, *Gemplus* ***- Tel: +33 (0)4 42 36 56 83. E-mail: flavieg@ccmail.edt.fr***

Smart Lobbying Group for Retailers

Retailers and terminal manufacturers wishing to introduce Smart Cards are being urged to join a new group called The Smart Card Reader Lobbying Group set up by Retail Logic, card authorisation specialists.

Steve Turner, Group founder and Technology Strategy Manager at Retail Logic, said: "Standard specifications which govern the interface between the Smart Card and the POS terminal and communications between the retailer and the bank are, in fact, already in existence. It is the confusion that surrounds which functions should be performed by the hardware and which by the software that must be addressed."

He said the group was lobbying APACS, Visa and Europay to formulate a standard set of protocols.

Contact: Steve Turner - Tel +44 (0)1252 776755. Fax: +44 (0)1252 776758. E-mail: sturner@retail-logic.co.uk

Smart Health Credit Card

A health-related Smart credit card that can record and store personal health information and also make payments at retail outlets has been launched in Hong Kong.

American International Assurance (AIA) Company and Standard Chartered Bank jointly developed the scheme which is targeted at health-conscious insurance policyholders.

Peter Wong, Head of Personal Banking, Hong Kong & China, Standard Chartered Bank, explained: "The Smart chip technology makes it possible for people to carry with them their medical history, personal and health-related information, in addition to all the shopping convenience and financial flexibility that a credit card normally offers.

Technology advancement

"This technological advancement sets a scene for the future of credit cards - a trend towards developing multi-function cards to meet customers' various needs."

The microchip can store personal and medical records including: name, identity card number, date of birth, blood type,, organ donation information, emergency contact person and telephone number, five most recent illness records, five long-term medication records, most recent medication record and five allergy records.

The card is being offered to AIA's life insurance policyholders. A total of five hospitals and 80 clinics have already signed up to join the programme.

Cardholders will be able to earn bonus points when they spend with the card. For every dollar spent, one bonus point is earned and cash discount can be redeemed instantly on further spending at designated clinics and merchant outlets.

The Smart credit cards are supplied by Gemplus Technologies Asia.

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Web-compatible payphone

A Web-compatible payphone is being launched in Europe by Schlumberger Electronic Transactions. Called telWEB, the new ISDN product offers voice, fax, e-mail and interactive intranet/Internet communications while still retaining the compact and familiar shape of a payphone.

Based on field-proven technology from Canada, it uses a large touch-sensitive colour LCD for interaction with users, presenting choices by means of friendly graphical dial pads, keyboards, buttons, icons and menus. Payment is via a card reader accepting magnetic stripe or chip based bank or phone cards.

Web pages are loaded rapidly - typically within a second or two - thanks to a powerful Windows NT computer with 32Mb RAM and the ISDN link. Faxes are sent or received via slots in the front panel which opens once a user's card is accepted. E-mail is received and sent using standard Internet protocols and a virtual keyboard.

Target installations are high traffic sites such as stations, airports, exhibition and conference venues, city centres, tourist attractions, colleges universities and also locations which have the potential to open up state of the art communications and web technology to customers that either do not own a home PC or who rarely use public call boxes.

The technology was pioneered by Absolu Technologies of Canada and following an agreement earlier this year, Schlumberger has made a number of modifications to the payphone to adapt it for Europe. These include conversion of the ISDN communications module to conform with ETSI standards and the provision of Smart Card options to accommodate resident SAM-based authentication of payment cards and electronic purses.

The new phone will be on show for the first time in Europe at Telecom Interactive in Geneva from 8-14 September, on Booth 1240 in Hall 1. Staff from both Schlumberger and Absolu will be available to demonstrate the phone.

Contact: Nicola Poirier, *Schlumberger Electronic Transactions* - ***Tel: +33 (0)1 47 46 59 34. Fax: +33 (0)1 47 46 68 65. E-mail: poirier_n@montrouge.ts.slb.com***

GSM/Bank Credit Card

SmarTone Mobile Communications and Standard Chartered Bank have launched a co-branded credit card in Hong Kong using microchip technology from Gemplus Technologies Asia to offer value-added services.

In addition to earning bonus points and discounts, customers can use their SmarTone GSM phone to have instant access to their credit information shown on their mobile phone's screen, including available credit limit, statement balance, payment due date and SmarTone bonus point balance.

Contact: Ms Tarvinder Dhillon, *Gemplus* - ***Tel: +65 771 9140. Fax: +65 773 0648. E-mail: tarvinder.dhillon@ccmail.edt.fr***

Hypercom/GlobeSet Agreement

Hypercom Corporation, provider of financial transactions solutions, has announced an exclusive reseller agreement with GlobeSet Inc, a leader in Secure Electronic Transaction (SET) software development.

GlobeSet will provide Hypercom with a SET application suite that enables secure payment card transactions over the Internet.

Phoenix, Arizona-based Hypercom says it will be able to offer a SET solution that works with a greater range of payment cards and SET applications than any other SET product now available on the market.

The GlobeSet Payment System will be marketed by Hypercom as part of its Pinnacle Transaction Environment. A formal announcement will be made at the American Bankers Association (ABA) Bank Card Conference next month.

Jairo Gonzalez, President of Hypercom, said: "Hypercom is offering the unique option of a complete solution or individual components," adding that GlobeSet applications had the highest level of interoperability among SET vendors.

Contacts: Margaret Singler, *Hypercom International* - ***Tel: +1 602 504 5256. Fax: +1 602 504 4582. Richard Cole,*** *GlobeSet* - ***Tel: +1 512 427 5114. Fax: +1 512 427 5101.***

Oki Agreement with Banksys

Oki Advanced Products has signed an agreement with Banksys for the certification and marketing of the Oki Value-Checker Personal Smart Card Readers for the Proton Smart Card electronic purse system worldwide.

Banksys, developer and operator of the Belgian electronic purse, currently has over 20 million Proton cards issued worldwide.

Oki's Value-Checker readers enable users to check the balance and transactions on their Smart Cards and come in two styles - a small key chain reader that operates when a card is inserted, and as a patented card sleeve design that stores the card when not in use. The sleeve style fits easily in a user's wallet or purse.

Proton technology licensees include Chipknip (The Netherlands), Cash,(Sweden), CASH (Switzerland), QuckLink (Australia), Cartao Inteligente (Brazil), Supercard (Chile), Exact (Canada), and a worldwide non-exclusive license for American Express.

Contacts: Fraser McNeilly**, Oki Advanced Products - **Tel: +1 508 460 8621. Fax: +1 508 480 9635. E-mail: digitalmoney@oki.com • Daniel Skala,** Banksys - **Tel: +32 2 727 6427. Fax: +32 2 727 6767. E-mail: skala.d@banksys.be

Golf Clubs Turning to Smart Cards

Golf Clubs in the UK are now purchasing Smart Cards in preference to magnetic stripe cards for their members, says Bob Cuthbertson, Managing Director of Smart Card International.

"The advantages are seen as the cashless purse, inbuilt loyalty schemes and progressive discount features," he explained.

"Members are being encouraged to add cash to the card for use in the bar by offering bonus incentives and convenience of payment. Unlike losing cash, if members lose their card it can be reissued with no loss of cash or loyalty points."

SCI received eight new registrations from golf clubs last month alone. In conjunction with Cardinal UK and Hengstler, SCI are adding vending and access control to the Gemplus 2K bit card.

Education is another strong market for the company. Although July is traditionally a quiet month, 20 schools are registered for installations during September. A recent installation was at Manchester University where Smart Cards will be used for payments in bars and restaurants.

One of the largest users of Smart Cards for the payment of schools meals is the Highland region in Scotland where a further six schools are taking the system this year.

Contact: Bob Cuthbertson - Tel: +44 (0)1482 650999. Fax: +44 (0)1482 652271.

Mobile E-Commerce Terminal

Wireless GSM communications and Smart Card technology have been combined to create a tiny, lightweight (330g), hand held, portable terminal for business people on the move.

The terminal is Akyman Financial Services' electronic commerce unit - or ECU - which is activated with a multi-purpose Smart Card from Schlumberger.

ECU is a GSM-based point of sale terminal which combines on-line credit/debit card and cheque payment and authorisation functions, invoice printing, mobile paging or Smart Card to computer links.

Akyman, based in Brighton, Australia, is targeting mobile salespeople or service providers such as plumbers, gardeners, and fast food companies who can use the terminal to take immediate payment; larger companies such as couriers, franchise operators and operators of fleets of delivery vehicles; as well as restaurants, garages and department stores.

Contacts: Brian Mollet,** Business Development Manager, Akyman Financial services - **Tel: - +61 3 95 93 14 77. Isabelle Ferdane-Couderc,** Schlumberger Electronic Transactions - **Tel: +33 (0)1 47 46 70 20. Fax: +33 (0)1 47 46 68 66.

People on the Move

Checkline plc, UK Electronic Funds Transfer specialists, have appointed **Jacqueline Farrell** as Marketing Manager based at the company's head office in Hertsfordshire.

The Harper Group has announced that **Martin Hender**, currently Managing Director of Australian Card Services, is to take up the new position of General Manager for Harpur UK in September. His responsibilities will include the management of Harpur UK's Overdrive and Dialcard brands, including sales and marketing.

Rob Hillan, currently Harpur UK Sales Director, is being seconded to Australian Card Services to take up the position of ACS Sales Director. He will also act as General Manager until a suitable local replacement has been appointed.

The NatWest Development team, building on their experience of designing and implementing Multos and Mondex to support NatWest and its external clients, have made two new appointments. **Simon Fisher** has joined the NatWest Development team from Hitachi and will take responsibility for semiconductor issues. **Bram Lebo**, formerly with CyberCash, will take responsibility for electronic commerce strategy.

John Noakes has left IBM in London, where he was responsible for Smart Card Solutions Marketing, to become Head of Marketing for De La Rue Cash Systems.

John Howell, Director of Operations at Landis & Gyr's Telford factory in the UK, it moving to the United States to take control of three L&G manufacturing operations in Mexico, Miami and Lafayette with the position of Vice President Operations.

Smart Card Diary

Electronic Commerce and Payments on the Internet, Mandarin Oriental Hotel, Hyde Park, London, 15 - 16 September 1997.

Implementing Solutions and International Standards for Retail Financial Services. Key highlights inlcude: working with a comprehensive cross-industry IT policy; judging the feasibility of an Internet business model; discovering how to build the optimum multi-channel distribution system; analysing emerging technologies working towards a fully interactive banking area; understanding the scope and impact of new international standards.

Tel: +44 (0) 171 915 5149 (Please quote J24957 for the conference).

Scandicards '97 Exhibition and Conference, Nacka Strand, Stockholm, Sweden, 16-18 September.

AIC Conferences - Exhibition: Pam Chattin - Tel: +44 (0)171 827 4155. Conference - Jenny Börjesson +46 8402 1015.

The Internet 97 Show, National Exhibition hall, Birmingham, 23-25 September.

Intamedia - Tel: +44 (0)1923 262474.

The Holland Chipcard Experience, The Hague, The Netherlands, 9/10 October.

Dutch National Chip Card Platform - Tel: +31 40 296 4845. Fax: +31 40 297 4976. E-mail: akl@euroforum.nl

ICMA Seventh Annual Card Manufacturing Expo '97, The Royal Lancaster Hotel, London, UK, 19-23 October.

ICMA - Tel: +1 609 799 4900. Fax: +1 609 799 7032.

Argentina Telco Studying an EP

Gemplus and a task force from various departments of Telecom Argentina are jointly studying an electronic purse project for the Argentine public telecom operator.

The telco wants to renew its phone card market and to promote increased usage of Smart phone cards with several value-added services. Suggestions being considered include lotteries, prize draws, advertising and a card that can be used at cinemas.

Gemplus has delivered more than 40 million cards to Telecom Argentina since 1993.

Integrated Circuit Card Standards and Specifications - Part 11

Certification Authorities.

We so often hear the term Certification Authority (CA) that many people are confused as to what it really means, in fact there is probably no unified theory for the exact role of a CA and little thought has been given by most players in the electronic commerce scene as to its real significance.

We need to start our discussion with a look at "TRUST". This is the security role that totally underwrites the risk management between corresponding entities. Lets look at two parties A and B that wish to establish secure electronic communications.

If A and B share in a secure fashion the key K then they are able to set up a trusted channel. It is necessary to use the word able in so much as there is an implicit assumption that the cryptographic protocol is itself securely implemented. You must allow for replay of messages and the deletion of messages. The cryptographic mechanism only allows you to detect unauthorised message manipulation which is far to weak for the basis of secure communications. In practice one always adds additional information to the message relating to date, time or sequencing data. Such data is of course protected within the cryptographic message.

Now in our simple example for a symmetric exchange the Trust relates to our confidence in the management of the key K. If we are absolutely sure that it is only shared by A and B alone then each party may trust the message interchange. The problem here of course relates to the practical difficulty in arranging such key management, particularly when there are a large number of correspondents. Just look at four nodes A,B,C,D that wish to be able to interchange messages in a secure fashion (*figure 2, opposite*).

In practice of course it is not practical to set up such trusted key exchange systems on a peer level. One solution to this problem is to have a Central Trusted Key centre. In this case each of the corresponding entities has agreed to trust the central key authority. We can make this work on a linear key relationship as shown in *figure 3, opposite.*

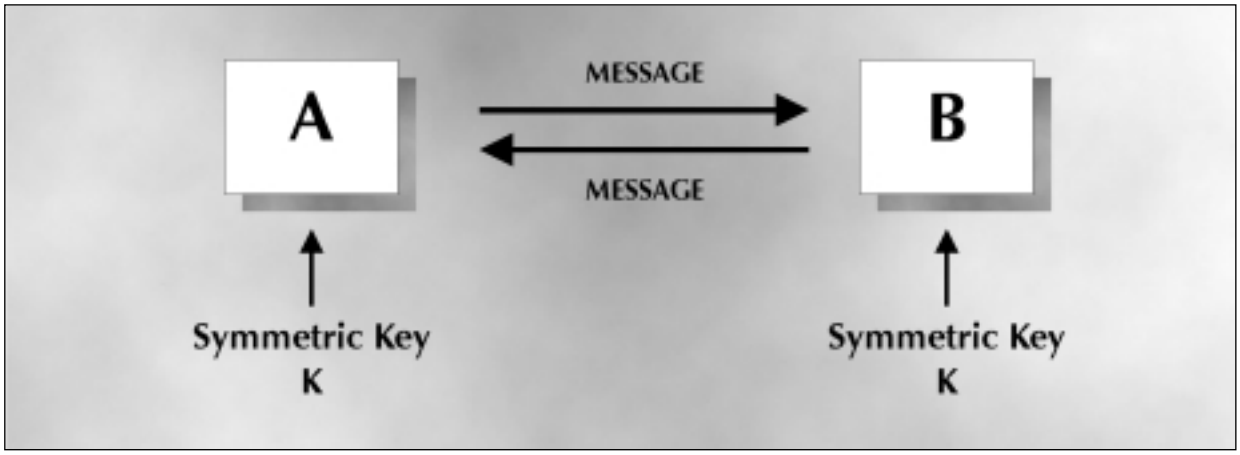
In this case each node has a key relationship with the Trusted Key Centre. When two nodes wish to inter communicate they request a key from the trusted key centre to use for that session. The trusted key centre can encipher this key separately for both parties using the particular key relationship established for each node.

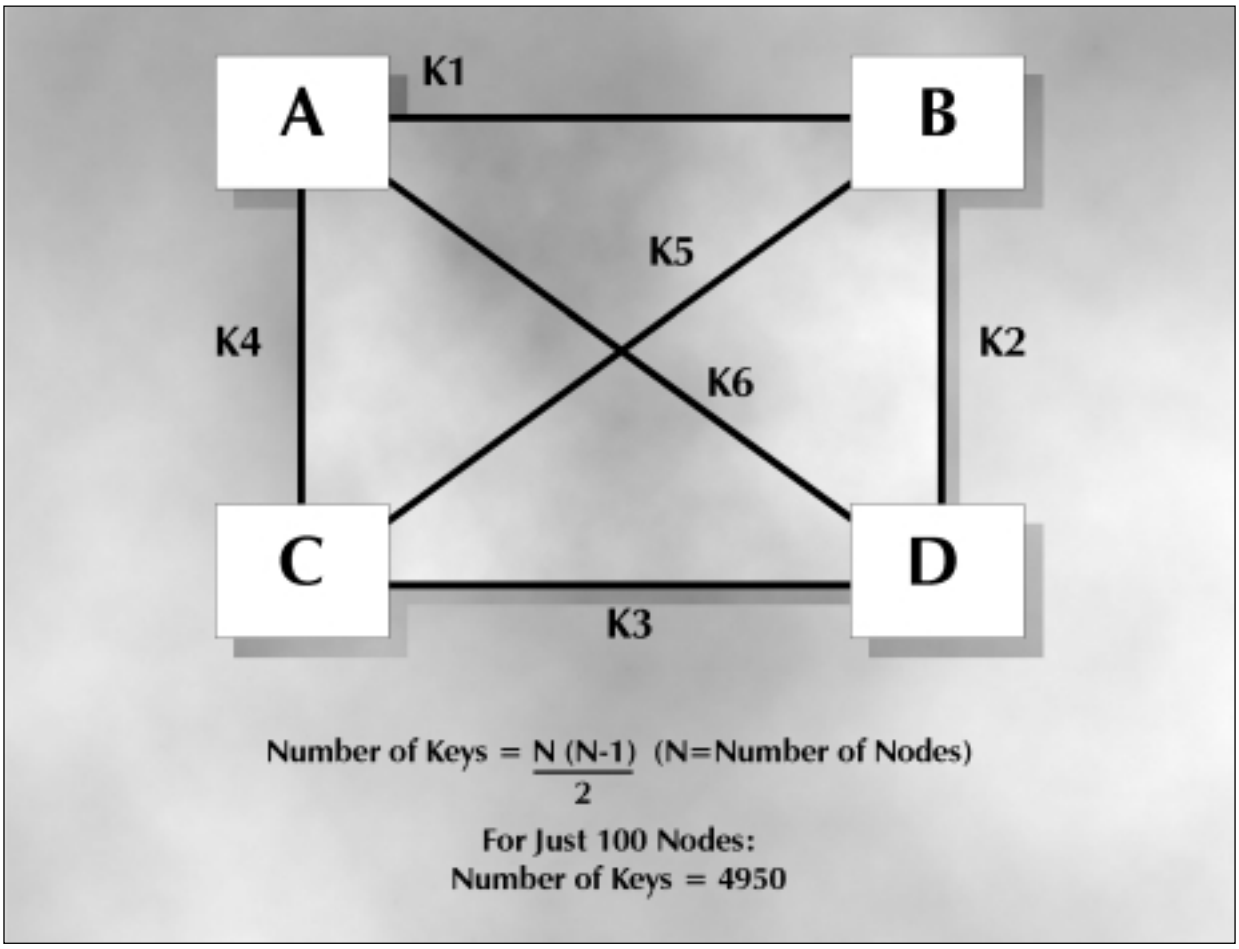
It is quite clear that such schemes are difficult to implement and operate, even the establishment of the initial node keys can cause significant operational problems.

Now the important part of our discussion here is to note that we can implement such systems far more easily with public key systems but, and its a big but, we are still totally reliant on how much we trust this key centre. Lets now look at the Public Key version with our same four nodes in *figure 4, page 158.*

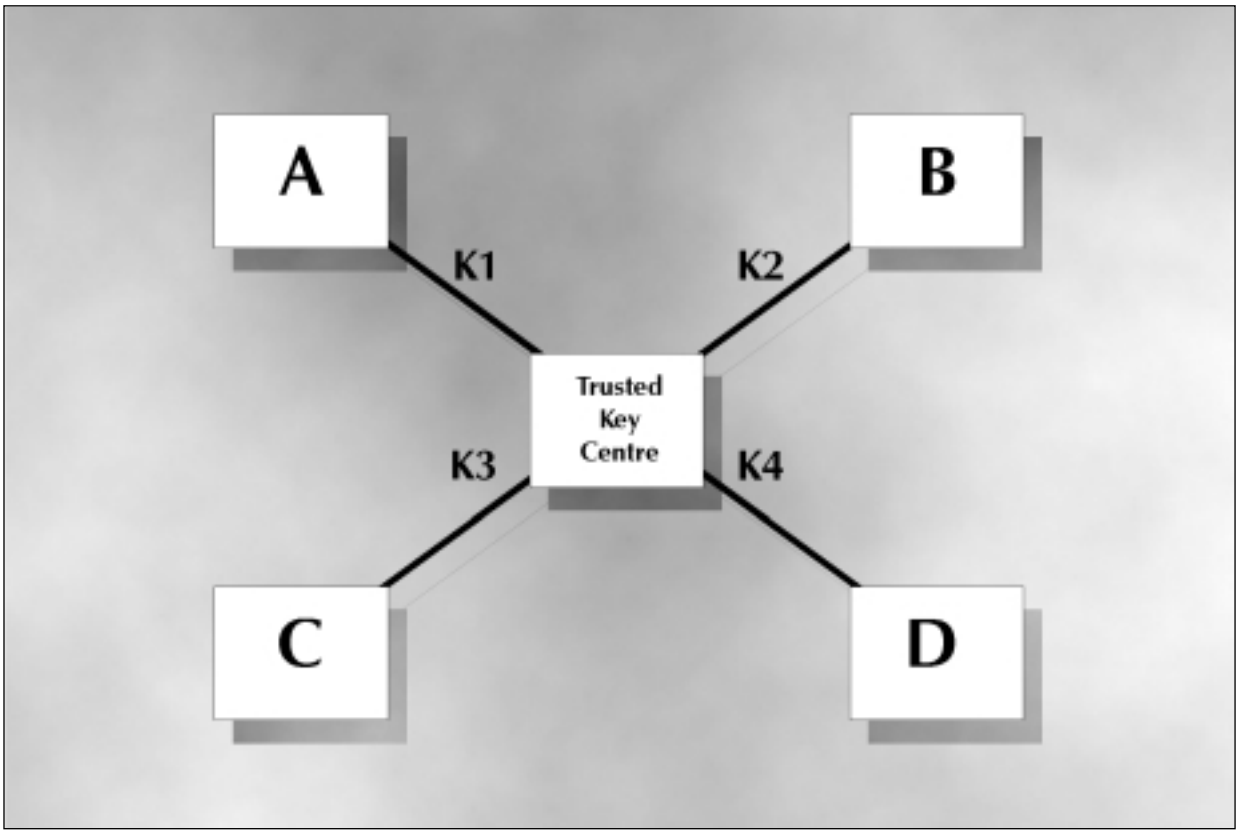
In this situation each of the nodes A,B,C and D have their own unique Public Key/Secret Key pair. As we have mentioned previously in order to use some body else's Public Key you need to be assured of its authenticity. This is the role of the Trusted Key Centre which is usually referred to as the Certification Authority or CA. One of the roles of the CA (Yes there are many other roles and that is the problem) is to take each of the Public Keys from its club of correspondents and to digitally sign this key using its own Secret Key which we have shown here as SK (TKC).

Right:
Figure 1
A Symmetric Key Relationship



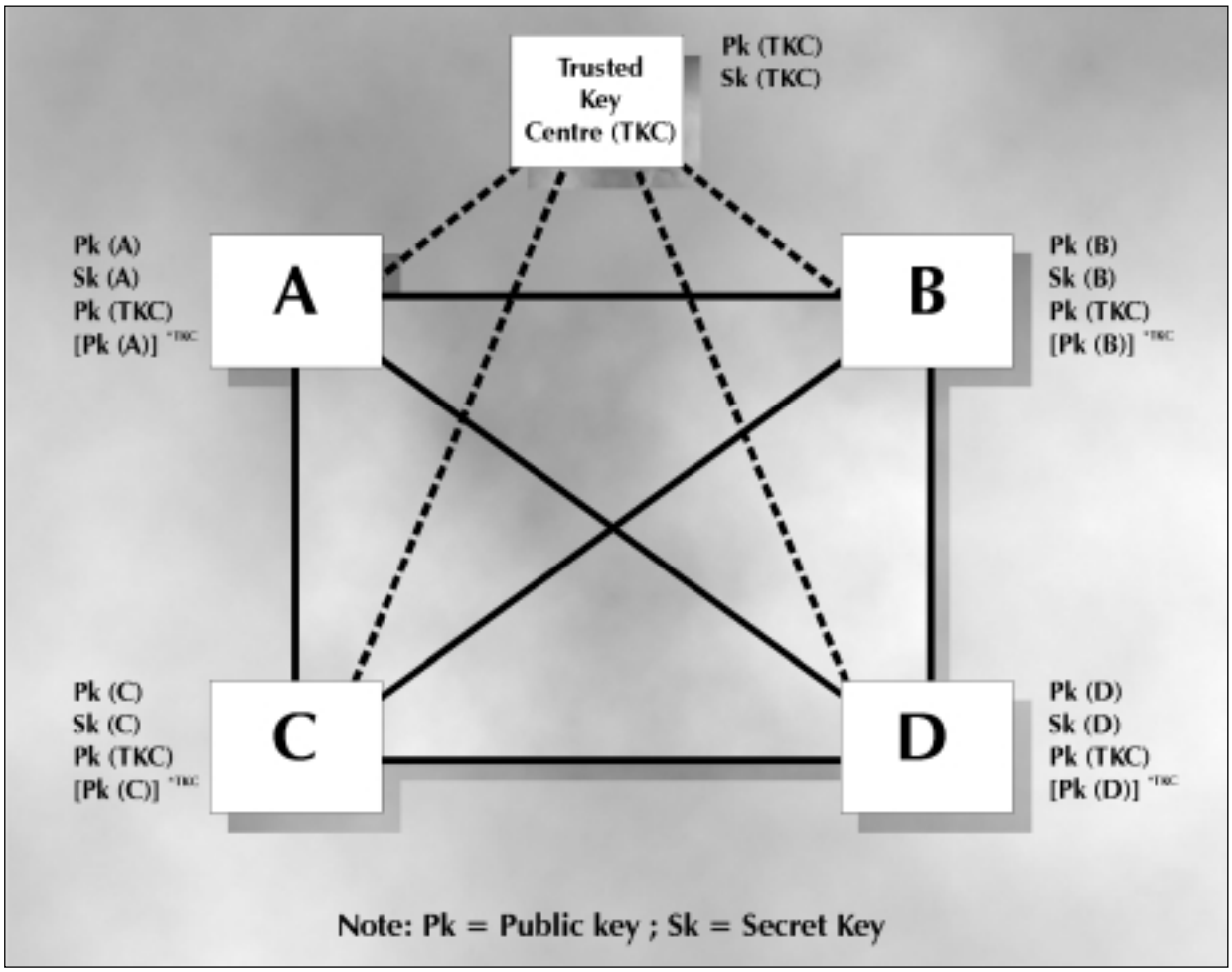


Left:
Figure 2
Symmetric Key Exchange



Left:
Figure 3
Trusted Key Centre

Right:
Figure 4
A Trusted Public
Key Centre

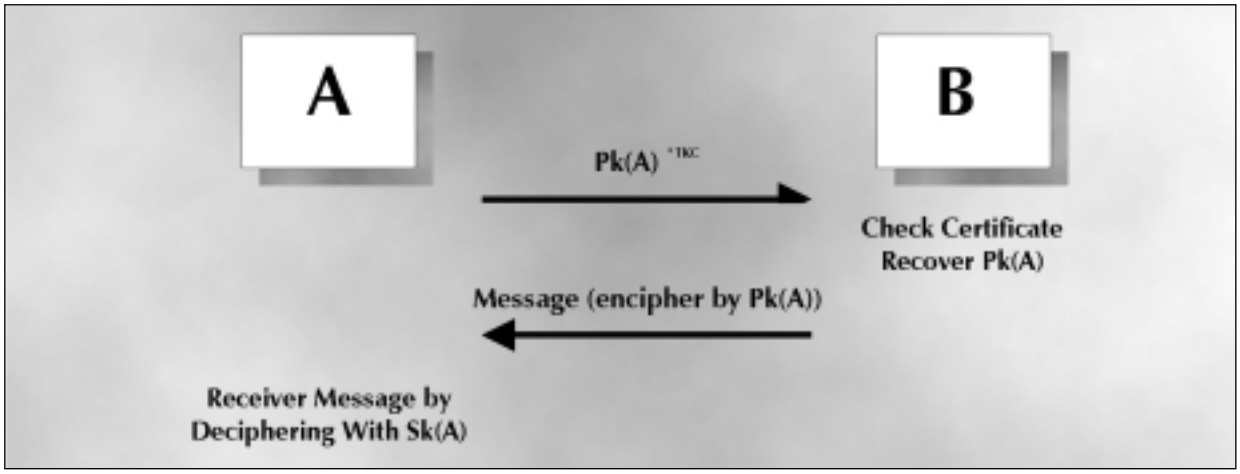


The resulting cipher is called a key certificate. There are various ways of calculating a key certificate but by far the most important is X509 (Version 3). This standard was initially produced for the telecomms organisation CCITT (hence the X number) but has now been incorporated by ISO under the 9594 set of standards (as part 8). Apart from the users public key the format for this key certificate includes a number of mandatory fields (e.g X509 version No, Certificate serial number, algorithm type, validity period, key owners unique I.D) and in version 3 a number of additional optional fields.

So each node in the system apart from storing its own Public Key and Secret Key would keep a copy of the trusted key centres public key and surprise surprise you need to be absolutely sure about the correctness of your copy. In addition each node would generally keep a copy of its own key certificate.

Now lets consider our secure messaging from A to B.

Right:
Figure 5
The Basic Public
Key System



It is not necessary to have any prior knowledge of B because we can get hold of B's public key certificate (from A or anywhere else). Before use we would of course check the validity of this certificate using our assured copy of the trusted key centres public key. The message flow is shown in *figure 5, opposite left.*

Now its worth just stopping here to see what has happened. B has sent A a secret message (perhaps a symmetric key for session encipherment) which was enciphered with A's public key. This public key was received from A's key certificate signed by the trusted key centre. It must be readily apparent that B in this case is totally dependent of the security effectiveness of the trusted key centre. If for any reason whatsoever A's public key is not valid then B is totally exposed on the data it sends to A.

This brings us to the subject of authority and responsibility. There can be no point in using a trusted certification authority unless you are prepared to accept the level of security offered by that CA. But how do you know? What happens if it subsequently turns out that the public key certificate purporting to come from A was actually assigned to some rouge dealer. It is very clear that when we are using electronic commerce our overall security and therefore risk exposure is totally dictated by the CA. There is little point in using any CA that does not guarantee the effectiveness of its service. This warranty should relate to the financial exposure being undertaken by the users.

It is now clear that there are a number of roles that must be fulfilled by the Certificate Authority or by that party that underwrites the risk exposure of the user, the more important roles are as follows,

- Entity Registration
- Certificate Issuance
- Certificate Revocation
- Certificate Directory
- Certificate Archive
- Certificate Warranty

In particular the role of Entity registration is at the hub of the use of certification for electronic commerce. If you don't know who is the owner of the certificate then it has little value. The whole operation of registration and certificate issuance in the electronic commerce world compares to the old idea of a Bankers Reference. Perhaps the operation of CA's will become a new role for the Banking Industry.

David B Everett

A NOT Too Distant Future

Right, and Far Right: Various interested parties watch a demonstration of the Catalyst "Journey Through Life" [Smart Card News]

Catalyst, a joint venture between the Natwest Group, BT, Compaq and ICL along with 20 other companies was set up in April of this year to demonstrate the technologies that will be available to the man in the street at the turn of the century.

Catalyst is an immersive experience taking you on a journey through life using advanced technologies. The experience shows that you need never leave home. You can shop, monitor your use of energy, do your banking, secure access to your home, follow university lectures, book your holiday and communicate with your office all through your PC, phone or TV. Should you need to leave home, you can still access this information from a seat on the train using your laptop or a device fitted in front of you.

Before the start of the journey you are given an Orga Smart Card and asked to write to the card some personal details. Access to the Catalyst experience is then gained by fingerprint scanning which is provided by Fingerscan. Using the Smart Card you are then transported through a series of rooms, from the nursery, school room, college, home, street, office and transport filled with the technology of tomorrow.

A smart television monitors what you watch, so is able to make judgements as to what your buying habits are and what you can afford to buy - information that may be accessed by a third party. A smart bin reads the barcode on items you throw away, that way compiling a shopping list that can be down loaded to the local store for replacement. Cameras monitor visitors to the house who can leave video messages which can then be retrieved through the laptop. All of these technologies are available to day and in some cases are in use.

The idea behind this project, which will remain in place until April 1998, is to test and improve these technologies. Each company that is involved can use the amenity to show clients and staff around as well as small groups of students.

In the discussion that followed from our trip around Catalyst the consensus was that there will not be one card for all the activities that a Smart Card could be used for. For instance a bank would probably not want its logo on a card along with certain other companies for a number of reasons. It would not be advisable for one card to have the monopoly, there would need to be some cards with a number of applications on it, so the customer should be able to buy which applications they need. So the question then is who owns the card? Who owns the application? Should it be a bank or a retailer? Who do the public trust most? A recent survey suggested that Marks & Spencer was trusted more than banks.