ISSUE 1

ELECTRONIC COMMERCE ENABLED BY SMARTCARDS

ecebs news

www.ecebs.com THE SMART OPTION

WELCOME TO OUR FIRST NEWSLETTER!

Welcome to the first issue of Ecebs News.

I hope that you find interesting the articles about Ecebs, our partners and developments in the exciting world of smartcards.

The ITSO development shows how integrated smartcard solutions are becoming part of our everyday lives with financial services, GSM telephony and now transport leading the way.

It all adds up to an exciting future.

David Braddock
Managing Director

ITSO – Past, Present and Future

ITSO was a specification aimed at providing interoperability between smart card systems for transport in the UK. It would also provide cost efficient upgrade paths for operators and the ability to mix and match system elements. Many say that ITSO will enable large scale introduction of smartcards – particularly in the concessionary travel field. Given this infrastructure implementation then the business case for incremental projects is so much better. It is not hard to see the natural follow on:

- Concessionary travel for the elderly
- Concessionary travel for students
- Library cards for elderly, students and others
- Campus cards for the students
- Travel cards for others
- Local Authority cards for all

ITSO can enable the *"killer application"* the smartcard world has been searching for.

ITSO is creating the environment in which the specification can be implemented.

- A compliance regime to ensure the quality of product to the ITSO specification with special attention to interoperability by means of the Warehouse.

- An ISAM and Key Management service to support the security at all levels – card, ITSO application, ITSO products and data encryption.

continued overleaf.

IN THIS ISSUE:

ITSO – Past, Present and Future

continued from cover.

And the essential element that holds the complete system integrity together – the ITSO Security Access Module – the ISAM.

Along with Ecebs, ITSO has evolved the ISAM through its development stage into something more than a card securing device. It includes 4Mb of storage for transactions. It enables data integrity from point of capture/creation to back office processing and systemises loss-less transmission of that data over the networks.

ITSO Sets The Standard

The name of ITSO is now synonymous with Transport interoperable smartcards. What Hoover is to vacuum cleaners, ITSO is to ticketing. Geographical expansion of the ITSO specification and environment outside the UK seems inevitable from the level of interest being shown. Already a support agreement with Australia is being put in place.

But the ITSO application structure on the card allows for more than simply the transport scene. Deliberately designed by the *'editors'* to allow private applications to sit within the ITSO shell, it allows, say, local authorities to add their applications within the ITSO environment. This approach allows them to quickly implement their application without the need to design and build their own security system. The ITSO SAM and its associated Key Management system are open to them.

Alternatively for entrepreneurial card issuers – the ITSO application may sit alongside other applications on a multi application smartcard. The second dream of the smartcard world to become the wallet on one piece of plastic is that much nearer. It's only the commercials that hold it back.

ITSO and Ecebs both recognise the potential of the ITSO SAM and are committed to developing this both geographically and functionally. The original role of Ecebs as supplier to ITSO has developed rapidly over the short period of the SAM contract into a closer partnership as each player recognises the synergies between our aspirations and opportunities and the strengths that each bring to the party. We can only say – watch this space.

Peter Stoddart
ITSO General Manager
www.itso.org.uk

Ecebs join European consortium

Ecebs have been invited to participate in a consortium of telecom, banking and technology companies headed by ELVA, the French-American design centre which is strongly positioned in the sectors of identification and authentication.

Code-named "iProved", the project is a take-up trial supported by the European Commission which aims at testing and unveiling the VocaliD system on a European scale. VocaliD is a new model for secure on-line transactions based on a smartcard. It combines innovative smartcard technology with a traditional magnetic stripe card. VocaliD emits a variable acoustic authentication signal for systematic validation online by an authentication server. It therefore requires only a telephone (mobile or otherwise) or a computer dispensing with the need for any smartcard reader. This has obvious potential anywhere in the world - at home, work, a friend's house, on the street, offering the same security each time. On a broader front, its independence from any card reader infrastructure means it is ideal for deployment in developing countries.

Ecebs appoints special agents

We are pleased to announce that we have appointed two additional agents to market Ecebs products abroad. The first is Oncard, represented by Henning Noergaard, who is based in Denmark and operates throughout Scandinavia *(henning.noergaard@mail.dk).* The second is Trans-Xact Systems headed by Tim Inman who is appointed to cover South Africa *(timi@iafrica.com).*

Smart Cards Roll off New E

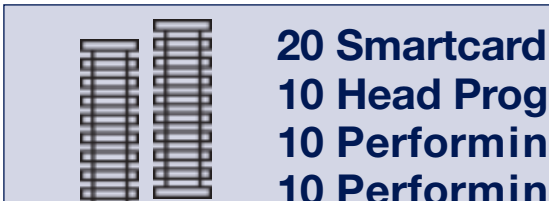
New Zealand smart card manufacturer Security Plastics expects their investment in new smart card equipment to pay off in a short time. The equipment has been working around the clock to meet the company's substantial orders for smart cards from clients including some of the world's leading financial corporations. The orders are indicative of the worldwide conversion from magnetic stripe based cards to the more secure chip based smart cards.

Large smart card projects in Asia have involved the around the clock manufacture and personalisation of between 150,000 and 200,000 smart cards per month plus other smart card work for a variety of applications.

Extra capacity has been added with the newly installed NBS Horizon, which includes a ten-station smart card module. This alone has increased the processing volume by 40%.

Recently, Security Plastics has signed an agreement to offer Ecebs products and solutions on their cards.

The company has orders in the pipeline from key partners throughout Australasia and Asia and is considering further investment in new technology to handle the range of financial and non-financial smart card products.



Security Plastics are very satisfied with their investment in new technology and the results achieved so far.

Security Plastics was one of the first companies in the world to be accredited for loading the Mondex purse onto smart cards, and the only certified smart card manufacturer in Australasia. Fraud has increased rapidly with the traditional magnetic stripe cards and smart cards are very secure in comparison.

John Geldard
International Business Development Manager
Security Plastics

Launch of ITSO Toolkit

The ITSO scheme is gaining momentum as more transport operators plan to adopt this standard.

This places corresponding requirements upon their systems suppliers to install, upgrade or replace ticketing equipment to comply with the ITSO standard. For these ticket machine manufacturers, integration of the ISAM is a key technical activity. To facilitate this, Ecebs is launching the ITSO ISAM Developer Kit. This kit comprises functional sample ISAMs along with test and configuration software specifically set up to give ticket machine developers the building blocks and technical guidance they need to quickly deliver ITSO ISAM integration.

For more information please email enquiries@ecebs.com or telephone 01355 272911.

Atmel and ECEBS, Providing Security For All

A topical subject over several months now has centred around the word *"Security"*. The tragic events on 11th September 2001 have made many people much more conscious of the need for improved standards for security and identification. The realisation that paper documents with, or without photograph, and plastic cards with easy to replicate magnetic stripe information, are too unreliable to give the assurance needed. The exponential rise in fraudulent banking transactions with magnetic stripe cards, and the ease with which Driver's License and Passports can be replicated, has stirred both institutions and consumers to think much more seriously about Smart Cards. However, a card with a chip may be smart but how can one know it is secure and who do you believe?

A Cambridge professor, stirred the technical press recently by announcing at the IEEE 2002 Symposium on Security and Privacy a *"new vulnerability"* to Smart Cards because *"the attack can be carried out quickly using very cheap and simple equipment"*. This view may be interesting from an academic point of view as a paper, but the reality is that the prospect of attack is neither new nor does it present an actual threat to current state-of-the-art smart card technology. The Smart card industry, or at least those of us with years of experience does not feel threatened by such statements.

Atmel is a technology company. Our core business is Silicon fabrication. The Smart Card ICs Division's pre-eminent position as one of the world's leading Smart Card IC vendors is founded on its market acceptance and broad range of security products; from memories, with built-in security features such as PIN and Authentication, to its advanced RISC microcontroller products with state-of-the-art high density Flash and EEPROM memory. With more than 20 years of experience in secure designs, dating from the origin of electronic payment by Smart Card, the security of our products has been established during many years of intensive use in the market place, with a history of independent third party certifications behind us. The experience we have gained in developing products that meet VISA's highest level requirement and in achieving Common Criteria EAL4+ certifications on our products, allows a software developer such as ECEBS to launch a product on our silicon with confidence. Whether it is a cost-effective single application product on our AT05SC family core or our advanced Flash based RISC microcontroller core allowing faster time to market, a developer can be confident in the knowledge that their expertise combined with our innovative designs, will meet the quality and security needs of their most demanding customers.

Atmel's success in developing highly secure products was not built in isolation, the silicon may be the brain of the smart card, but the brain has to be nourished for it to develop. Good security requires very close coupling between hardware and software. This in turn means a close working relationship and mutual trust between software developer and hardware vendor. Atmel and Ecebs have such a relationship that leads to products that meet the stringent needs of today's markets.

Ian Duthie
Marketing Manager ATMEL
www.eu.atmel.com

Do You Need a Smart Architecture?

Imagine defining your business requirements, translating these to functional and data requirements and then rapidly constructing your smartcard solution. To do this you need to base your solution on a "Smart" architecture.

Today's Multi Application Operating Systems (MAOS) are fairly flexible programmable platforms but they do require considerable design and development efforts. Further effort is also required to make these systems adaptable and extensible to allow them to change as the business requirements change after deployment. However providing the right architecture framework on which systems can be built enables goals which were previously thought unobtainable, such as platform interoperability, without the need for considerable reinvestment in redesign and code. This would in turn facilitate quicker time to market and profit growth.

Ecebs have developed such technology to satisfy the needs of businesses wishing to rapidly deploy smartcard solutions which are open to change, extensible, yet robust and reliable. With our Multefile product powered by our Polymorph platform we believe we have made significant progress towards our vision of ultra-rapid application development. Please evaluate our products and judge for yourself.

Mike Peters *Principal Systems Architect*

Rapid Smart Card Development: Challenges and Solutions

A critique of smart card technology in terms of its efficiency in meeting business needs


Barry Hochfield

Smartcards have come a long way since the first deployments for French banking. Today we have on-chip crypto co-processors, contactless I/O, memory to rival 1st generation PCs, and now 'open standard' multi application operation systems that endear the humble smartcard with features akin to those of fully fledged computing platforms. All this technology, however, still begs these questions;

What role does and will the smartcard play, and the perennial 'isn't the smartcard still a solution looking for a problem?'

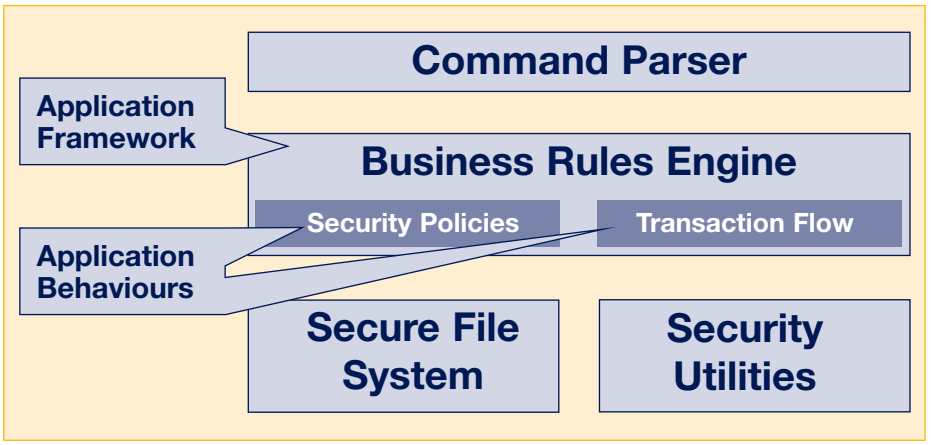
The ever-growing complex issues of 'e' and 'm' commerce, especially those concerning security that impede growth, suggest the answers to these questions have to be wide-ranging and quickly resolved.

One commonly held view is that the smartcard's only enduring role will be based on an assumption of 100% online availability. This tends to demote the card to no more than a client ID authentication agent, where the ensuing provision of services are then all network/host based and driven. While one can conceive a future when 3G wireless infrastructure is massively deployed and ubiquitous, and where the smartcard is 'just' a SIM, the author wouldn't build an e/m commerce based business case dependant on that happening anytime soon, and even when it does, there will still be critical points within the on-line session where a trusted agent with enough computing and secure storage capability will be required to enable the service provision.

We contend that smartcard based secure ID alone will satisfy only a part of e/m commerce's business requirements present and future.

There are more and more 'off-line' scenarios emerging beyond the obvious payment applications as specified by EMV. For example there is an increasing set of card-to-card applications such as Ticketing, Doctor-Patient, Teacher-Student, all involving records management, access to which is application specific and hence business rules driven. It is these business rules which then dictate the nature of the record and the behaviour of the data contained therein, be it personal details, loyalty points, e-tickets or tokens, or access rights permissions to a variety of physical or logical assets.

One can see patterns emerging in terms of the functional requirements of a smartcard needed to meet these sets of business requirements. And these functional requirements need to be rapidly mapped to technical requirements and then implemented on platforms.



'we are all aware of the ongoing 'MAOS' wars'

But how well do the Industry Standard smart card platforms match up to the job? And can 'the job' be defined quickly and clearly enough to make smartcard deployment increasingly viable? Let's examine the present platform offerings and their accompanying development methodologies in terms of fitness for these purposes. We are all aware of the ongoing 'MAOS Wars'. On one side we have Javacard with its endorsement by VISA, and several implementations offered by major incumbent smartcard manufacturers, all combining their marketing muscle to considerable effect in terms of raising Javacard brand awareness. But why should these suppliers of, up until now, proprietary platforms want to back a so-called open standard so vigorously when they've been enjoying the benefits of customer lock-in that their proprietary offerings have been providing?

True open standards benefit the buyer and enable market growth by assuring interoperability and multiple sources of supply. While VISA quite rightly are pursuing

'True open standards benefit the buyer'

this on behalf of its members, the Javacard standard does not, as yet, fulfill these fundamental business requirements. 'The 'write once run many' manifestation is yet to appear and secure post-issuance application load and delete varies considerably from implementation to implementation. While the Global Open Platform attempts to address this specifically, it does not as yet do so completely enough.

The other contender is MULTOS, the only open standard smartcard platform to be designed from scratch to be just that. It is not a port or an afterthought and suffers none of the legacy issues the other MAOS standards do, save perhaps the fact that it can be argued it is too secure for some 'low end' applications. However this point's weighting reduces as the business case for more applications on the same platform increases along with the need for flexibility to swap out applications post issuance.

Let us stand back and re-ask the question as to how well do these platforms in general meet the business requirements of e/m commerce systems. After all it is key concerns of these businesses the smartcard strives to address, concerns such as Time to Market, Cost of Development, and Cost of Maintenance. It is in these areas that today's MAOS's have room for improvement. These business drivers are relevant to any IT system and they have been addressed to varying degrees of success with development methodologies and techniques such as Object Orientated Analysis and Design, and Computer Aided Software Engineering. The success variation maps across the range of platforms from embedded systems, through to PC's, servers, and mainframes. The issue is that the smartcard-centric view of today's MAOS platforms has not integrated well into the overall IT systems solution approaches and it's on this 'total solutions' view that modern OOAD and CASE tools and methods focus best.

Barry Hochfield *Technical Director*

Ecebs Limited, Torus Building, Rankine Avenue, Scottish Enterprise Technology Park, East Kilbride, Scotland, G75 0QF
Tel: +44 (0)1355 272 911 Fax: +44 (0)1355 272 993 Email: enquiries@ecebs.com URL: www.ecebs.com