

3 Million Cards!

At previous CARTES we always seemed to be saying 'ITSO is coming'; this year it is here!

The Bolton/Blackburn NowCad pilot has been running for some time now as an entitlement type card, including an upgrade to ITSO on buses. Chester County Council are also currently demonstrating their system through a series of big launches (the next one due at Chester Race course, 30th Nov – contact Humaira@smartex.com for details) before rolling out. But more importantly the big schemes have well developed plans and by the end of 2006 there will be over 3 MILLION cards with ITSO shells on them in the UK – yes ITSO is here.

Peter Stoddart

What is ITSO?

ITSO™ is a not for profit organisation, which has evolved from an initiative in 1998 by the major players in the UK transport industry. These included Transport for London, the Passenger Transport Executives, some of the larger UK Local Authorities, the train operating companies through ATOC, Industry Suppliers and the Department for Transport.

The primary focus of ITSO was the creation of a specification for interoperable smartcards for transport applications. Today that Crown Copyright Specification is available to all and rests at version 2.1, published in March 2004.

The specification is unique in a number of ways;

- It supports a wide range of smart media where other specifications may support only one.
- The choice ranges within ITSO are from low cost disposable cards to top of the range microprocessor cards.
- The specification recognises current popular contactless media such as Mifare 1K & 4K and Calypso.
- All of these are interoperable giving schemes a choice of card, which is more appropriate to their application, - low cost for single journeys, - higher specification for concessionary travel cards, which may also be citizen cards.
- It provides a complete end to end specification for interoperable smart media; it covers the whole life journey of transport applications and so specifies card data, card formats, point of service activities, transaction formats and back office processing.
- It uniquely supplies the security environment specification for key management. Other schemes may only provide a card key; ITSO provides card, shell and product keys.
- It provides the security architecture for the card and back office transactions imperative for the secure transmission of data amongst interoperable schemes. This includes the architecture for the authority levels of operators' points of service.
- It enables Interoperability... but more of that later!

What does ITSO do now?

ITSO Ltd provides the environment to enable schemes to implement the ITSO specification;

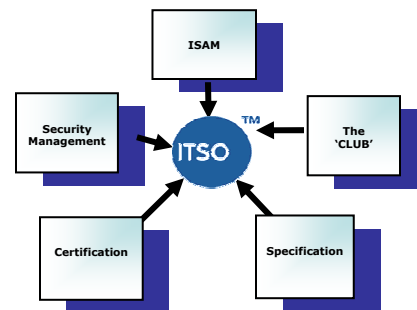
- Certification & Testing
- An ISAM (ITSO Secure Application Module)
- A Security Management Service
- A set of 'club' rules

Certification

Any card, point of service or back office must be certified for compliance with the ITSO Specification before it can be called ITSO compliant. This is achieved through ITSO testing partners INTEGRI. Unique to ITSO, that same piece of kit or software must be verified as interoperable in the ITSO Warehouse of pre-certificated equipment, also run by INTEGRI, before it can gain a full compliance certificate. ITSO also makes its test tools and scripts available to suppliers for pre-certification submission testing in their own workshops.

The ISAM

This integrated circuit card, which must reside in any ITSO based point of service or back office, provides the cornerstone of the security architecture for the key and transaction processing. Developed by ECEBS it provides key management, data integrity, point of service permissions, authentication, validation, and a massive 4Mbytes of storage for transactions.





The Security Management Service (SMS)

This is provided by the Royal Bank of Scotland for ITSO. This high security service generates and distributes the security keys and keyfiles associated with smart media and individual products. Interoperability is enabled at this level by the sharing of keys by key owner permission.

The Club Rules

ITSO provides more than a framework for use of the specification and the environment, by means of Operating Licenses and Supplier Registration. ITSO actively encourages the implementation of ITSO based schemes, through its Suppliers Group, the ITSO Integration Forum (I2F), its support for AILO (the Association of ITSO Licensed Operators) and its positive support of schemes.

ITSO Implemented

The implementation of ITSO has not gone as fast as everyone would have preferred, this is mainly because it has taken suppliers longer to develop fully compliant kit, which is not surprising when you consider the depth of the ITSO Specification.

The key management system (SMS) was late arriving due to the complexity of contract negotiations and software. Even now schemes are only just taking delivery of the market provided interface suite known as the Asset Management System (AMS).

Developers have been delayed in implementing the full range of cards. But with the availability of the Innovision card from November 2004 is about to change this, then the full set will be available on the market.

Despite all of this ITSO has a pragmatic approach to these issues and in conjunction with schemes and suppliers, has introduced a number of steps to enable progression. For example; an early adopters scheme, which provides Security Access Modules with embedded keys prior to the SMS service availability, a phased certification for suppliers kit, which matches the partial functionality against the early scheme requirements and the I2F/suppliers group, which allows suppliers to jointly develop and demonstrate aspects of the ITSO specification.

Advantages of ITSO

- ITSO is the only industry specification compliant with European Standards such as EN 1545, which UK Local Authorities must include in their procurements.
- ITSO provides more management data – securely - allowing for better settlement with operators, & better customer data.
- ITSO based equipment provides 'Interchangeability' of system elements, removing the old issue of 'supplier tie-in'.
- ITSO is a Crown Copyright open specification available to all and has stimulated a considerable number of new players to the market. This is particularly exciting as we can see suppliers and schemes from outside transport realising the benefits of the ITSO specification and the relationship of a tourist card for example, with a transport application. It appears to be opening up what was a limited market.

A card for all seasons

ITSO as a Specification is unique in terms of interoperability and the impressive range of cards, giving schemes enormous potential. These range from small memory low cost cards, to the top end microprocessor cards and the more familiar Mifare and Calypso. For example – a College Campus may choose to use a Mifare 4K or higher for its students to cater for the core applications of transport, a cashless environment, library or leisure access. But, for the outside visitor who attends a 2 day course, perhaps a low cost card will identify them and provide free lunch. The same type of example could apply in a UK Local Authority; residents get a more powerful card with multiple services on it, tourists a simpler card. Also for a one off event such as a concert, local residents could have their ticket added to their card whilst city visitors could be provided with a low cost card just for the event.

And finally...

There are four other major points, which should be made;

- ITSO is mandated by the UK Department for Transport for any smartcard scheme requiring financial support from them.
- ITSO is highly recommended for ticketing by E-Guv and had there been active schemes at the time of recommendation, would have achieved a higher standing.
- UK Government Connects is providing ITSO approved software modules to cover transport in their approach to smartcards.
- Suppliers old and new are committed to ITSO with certification by ITSO being booked until March 2006.

FULL SUPPLIER MEMBERS	
Accrington	Ecebs
ACT	ESP System
Almex	Innovision
Alphyra	IOSIS
Aontech	Magnadata
ASCOM	Mousesmart
ATOS Origin	MVA
Bemrose Booth	Novacraft
BT	Paypoint
Burall	PCL
CJS consultancy	Philips
CJS technology	PJ Associates
Consult Hyperion	SmartCard Solutions
Cubic	TNC connect
Dovercourt	Unicard
ERG	Wayfarer

The number of suppliers actively involved in ITSO has greatly increased bringing new innovation to the supply chain and justifying the ITSO dream of interoperability of scheme elements

REGISTERED SUPPLIERS

ACG
Axalto
Gemplus
Gieseck & Devrient
Octopus
RBS
Winter AG