Ten years ago, the aspiration was for contactless smartcards to work across the various transport smartcard schemes within a country or region. That vision is now with us: ITSO in the UK; VdV KA in Germany; OV-chipkaart in the Netherlands can all provide countrywide interoperability – that is the ability for one customer smartcard to allow passengers to seamlessly move across the country without changing smartcard.

But what next?
Siim Kallas, Vice-President of the European Commission responsible for Transport, said back in 2012: “Why can’t I yet plan or book my journey through Europe – switching from air to rail or sea, to urban or road transport – in one single go and online?”

But the vision had already surfaced some years before, under the auspices of European Standardisation. As the national interoperable smartcard schemes were beginning to be developed in the mid-2000s, it became apparent that the visions of each national organisation were very similar. The smartcards used all had near identical contactless specifications. Cooperation made great sense to speed processes along and access the latest technology without waiting for it to be customised to meet local specifications.

At first the cooperation was at the business planning level: agreeing the various roles that were needed in an interoperable smartcard scheme; the use cases; and agreeing how each actor interacted. Agreement on sharing data elements with journey planning and timetable and fare providers also moved forward at about the same time.

The big step forward came courtesy of funding by what is now known as DG CONNECT – the European Commission Directorate for harnessing IT across borders. Thus the EU-IFM Project was born.

The EU-IFM Project consisted of the national transport smartcard organisations for France, Germany and the UK, plus the Calypso Network and the UITP. The EU-IFM Project charted the roadmap necessary to allow cross-border use of transport smartcards.

The Project also published specific guidance on Privacy and Trust Schemes and Back Office data needs. But the key deliverable was the core Specification requirements for smartcards to work across borders and hold two or more different transport smartcard applications. This Specification is critical in meeting the pan-European vision outlined by Siim Kallas and delivering meaningful interoperability. It will shortly be published as an International Specification – ISO 24014-3.

The EU-IFM Project showed the roadmap to interoperable media across borders. It is now becoming even more critical with the advent of NFC-enabled phones and contactless bankcards. The national transport smartcard organisations in France, Germany and the UK helped the European Commission draw-up its recently published Guidance on Smart Ticketing. The same group of organisations is now actively engaged, alongside the UITP, with other transport, payment and smartphone providers to look at the wider opportunities on how to harness contactless devices in the customers’ hands for use in transport.

In 2012, the UK (ITSO), Germany (VdV) and France (AFIMB and Calypso Network) took the step of signing a Memorandum of Understanding (MoU). This MoU underpinned the need for common specifications, certification and the sharing of best practice for smart ticketing. This is already bearing fruit with a first draft of a Transport Protocol for how the contactless interface can be linked with transport smartcards to ensure speed of transaction, adequate field strength and practicable form factors.

This, coupled with the new specification for multi-application transport smartcards, based on the outputs of the EU-IFM Project, is putting national transport smart ticketing operators in a
The Smart Ticketing Alliance aims to be up and running by summer 2013, run under the umbrella of the UITP. It is likely, from current discussions, that there will be 10 to 12 member countries by the end of 2013. It is about accessing new technologies to create value for its members and minimising the cost and time of implementation. It also keeps the transport industry closely aligned with Europe and the new directives towards integrated and multi-modal public transport, particularly across borders.

The two biggest challenges facing the Smart Ticketing Alliance are firstly how to influence and enable cross-border use of smartcards and smart ticketing. Areas like Luxembourg, where something like 80% of worker journeys start or finish in another country, each with its own smartcard specification, are keenly watching developments in smart ticketing. Adopting the Smart Ticketing Alliance Specification will be a way forward.

And secondly, the Smart Ticketing Alliance needs to address how to harness the new technology of NFC where a mobile phone or other enabled device can either emulate a smartcard, or, in the reverse direction, can act as a ticket vending machine, reading and writing to another smartcard held near it.

But mobile phones are no longer tailored to country-specific markets. The fact we have roaming across Europe (and wider) is down to having a single specification for the SIM-card. For the transport industry to get noticed by the GSMA and the mobile network operators and have its specific requirements incorporated in the next generation of NFC-enabled devices, we need to act in a coordinated and positive Europe-wide way.

The NFC-enabled mobile phone in this way can replace the traditional smartcard and ticket machine at a bus stop or station. It allows the customer to download tickets over the internet to a mobile phone, if necessary directly purchased from their chosen journey planning website. And the phone, loaded in this way with multiple smart tickets, can then be used in the different smart ticketing schemes to which they relate.

Additionally the NFC-enabled device can act in the other direction, giving the bus conductor or train inspector an online device that is both a mobile phone and a checking device able to read and validate smart tickets on the move. It even gives the conductor or inspector the functionality to take contactless payment, top-up smartcards or issue smart tickets themselves – all with just a smartphone rather than an expensive and bulky mobile ticket machine.

The NFC-enabled mobile phones look like opening up major new and novel travel opportunities both for customers and operators. The transport sector is poised to provide the mobile phone industry with a valuable new market. But it also introduces new challenges that the Smart Ticketing Alliance must address.

The Smart Ticketing Alliance will be working closely with the two main mobile phone bodies, the GSMA and the NFC Forum (the latter through a new Transport Special Interest Group). The plan is to concentrate on the pressing issue of certification: how do mobile network operators trust transport applications (such as ITSO, Calypso or VdV) on their SIMcards; and how do the smart ticketing schemes trust the different models of NFC phone and network SIMcard to work with their readers, validators and gates? Each national transport smart ticketing organisation could conceivably test and certify every combination, but clearly this is both impracticable and a massive barrier to industry-wide progress. In its place we need certification processes we can all trust. Here the Smart Ticketing Alliance is in a unique position to lead the way and set the principles.

There are also new specifications that need to be agreed. Just how the transport operator will hand over their smart ticket applications to be loaded onto a specific mobile phone, where only the phone number (and bill payer) are known, or how the smart tickets will be moved when the customer moves network or phones, are issues that need to be urgently resolved with the mobile phone network operators through the GSMA. The Smart Ticketing Alliance also needs to agree how transport smart ticket applications will be killed if the phone is lost or stolen; a crucial issue when annual travel cards can be worth thousands of Euros.

All these issues will need careful consideration, drafting, agreement and communication between the many thousands of transport operators and dozens of smart ticketing schemes across Europe. If it doesn’t get satisfactorily resolved, the industry will be left with a raft of incompatible interfaces, little opportunity for cross-border smart ticketing, and frustrated travellers who will only consider modal switching to public transport as a last resort. The costs of implementing new schemes and paying for local customisation will increase materially, whether borne by the network operator or the transport operator.

The earlier EU-IFM Project addressed some of these issues. It has already resulted in the publication of a new International Specification for Transport Applications in a multi-application environment. There is a draft Privacy Charter and, from a security perspective, there is agreement that Transport Smart Tickets need to reside in the SIM-card under the management of a Trusted Service Manager. The process is well underway.

The European transport industry is characterised by multiple modes of travel across thousands of different transport networks and involves many changes between bus, tram, metro, train, ferry or aeroplane during the course of a journey.

The advent of the single specification NFC-enabled smartphone that covers all of Europe is necessitating a major rethink of the way the transport industry cooperates. The Smart Ticketing Alliance aims to seize that opportunity. Watch this space…

Reference
1. www.ifm-project.eu

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