

# *Open Smart Card Infrastructure for Europe*

## V2



**Volume 1:** Application white papers and market oriented background documents

**Part 2-1a:** ePayments: Migration of EMV/CEPS, status and roll-out plans: EMV Migration synchronization in Europe

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# eEurope Smart Cards

## Trailblazer 5

### EMV MIGRATION SYNCHRONIZATION IN EUROPE

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## **Introduction**

One of the TB5 objectives, set from its initial stage, has been EMV migration “synchronization” in Europe. The reason behind this objective was to avoid a situation in the EU where the delay of migration in some countries will provide the ground for increased fraud in others. Hence, from the first TB5 meetings, an effort was made to identify the main barriers and drivers in this major technological project in order to communicate them to the parties involved.

In April 2001 in a TB5 meeting held in Brussels, representatives from 6 EU countries gave a report on their national migration plans, and representatives of 4 schemes (Europay, VISA, MasterCard and JCB) reported on worldwide EMV migration. These presentations and the issues involved, published on a CD ROM that was distributed, were summarized in a document.

In the following meetings of TB5 some more issues were brought into the discussion on EMV migration. Then, in Q2 2002, TB5 has created a table with all available data on payment systems in most countries, as well as information about the EMV migration status. This table is included in the final deliverables (OSCIE Volume 1 Part 2-1c) as a reference about an on-going mass smart card deployment in Europe and worldwide.

## **EMV Migration barriers**

Below are a number of identified barriers for EMV migration in European countries and an indication of how the organizations undertaking the projects attempted to overcome them.

### *Banks – Retailers’ collaboration*

In the UK, where the migration started back in 1999, the fact that 50% of the POS terminals are owned by the merchants created a significant delay because of the unwillingness of the latter to finance the upgrade of their devices. Although increasing fraud has been the main threat and barrier in this country, the merchants were reluctant to invest. As a consequence, the roll out of retailer-owned terminals, which are components of integrated POS networks in large stores, started almost 2 years later.

An APACS representative summarizing Lessons from the UK experience said that:

- Retailers are partners
- Banks should have a genuine dialogue from the start
- Banks should consider their needs and business case

### *No sufficient business case for migration*

In the Netherlands there are 17 million e-purse cards, issued initially by two competing and non-interoperable schemes (in 2002 now merged in one). The volume of transactions has steadily been increasing (i.e. in vending and parking and the expected number of transactions for the year 2002 is 85 million. Despite the fact that Interpay (the national payment body) had a 1,000 page specification document and that it actively participated in projects like DUCATO (for the uptake of CEPS based e-purses) there are no plans to move to a cross border interoperable e-purse.

All debit transactions are pin based and cover almost 50% of all transactions, almost all card transactions are electronic, and 99.5% of the transactions are national. There is no EMV business case from the fraud perspective and the complexity and cost of EMV migration has delayed its implementation. According to Interpay there is no immediate reason to migrate to EMV, at least in the near future.

The cost and effort of the terminals' upgrade first for the Y2K and the, following year, for Euro acceptance, has created an additional problem for retailers. [SIBS has reported that in Portugal they would try to upgrade terminals during the Euro conversion phase].

There is no clear way to overcome the barriers expressed by the Netherlands and some other countries that have relatively little fraud. Nonetheless, there is a migration plan that – contrary to other strategies - aims at minimizing the effort and is summarized in:

- Small business infrastructure
- Focus on ATM firms
- Implementation decision for each bank individually

#### *National Co-ordination in the migration projects*

Due to the cost and the complexity of the migration it was stated that it was necessary to establish a national coordinating body, if not already in place, in order better to address all issues and establish economies of scale.

In some countries like Spain, the moves are not on a national level. In Italy, in September 1999 the creation of "Associazione Progetto Microcircuito" was tasked to co-ordinate the migration to EMV of all current debit and credit cards.

#### *Type approval and certification*

Italy also found the type approval procedures cumbersome and expensive and has asked the schemes to facilitate them. The same issue arose in the initial meeting of TB5 when NOKIA asked for the right to self approve its handsets EMV level1, due to the rapid development of new models in case it was agreed that EMV cards were going to be used by mobile phones either in dual slot or dual SIM configurations.

### *Expertise availability*

The period covered by TB5 – from December 2000 until December 2002 was one requiring intense use of IT resources in projects like the Euro introduction. This need has made EMV migration a lower priority in financial institutions joining the Eurozone. In addition, the complexity of the project and the fact that it was to be done for the first time by everybody – except perhaps France – has made it difficult to use experts, who are in general a scarce resource. New skills and know-how had to be developed and institutions had to rely on the few consulting companies with some previous experience.

### *Migration cost*

Although this is cited as a main barrier to the banks' decision to kick-off migration, little has been done to overcome it. It was mainly VISA that provided monetary incentives to issuers and acquirers. Europay established a pool of experts in order to fill the expertise gap.

There is no uniform estimation of the migration cost in most countries and figures vary depending on the complexity of the project(s). In countries where fraud is smaller due to a big percentage of debit on-line transactions and a rather small number of international credit transactions, the overall migration cost for fraud reasons is not justified.

### *Terminal management issues*

TB5 has raised the issue of the complexity of managing different versions in the 6 million bank and retailer owned terminals in Europe. The Group has decided to contact STIP (Small Terminal Interoperability Platform) one of the industry initiatives that aims to develop common API's for terminals based on Java. Despite the fact that some EFT/POS manufacturers have developed STIP compliant terminals, no demand has been identified so far, at least not on a large scale. The liaison with STIP has not been established.

### *Legal issues*

As reported by TB7 WG2, there is no legal framework in Europe to govern the 'coming together' of multiple functions in one multi-application card. Legal limitation of liability in this situation could be the way to improve the business case.

### *Standards' issues*

The EMV specification is not compliant with ISO/IEC 7816. The differences between EMV and ISO/IEC 7816 are not great, but the fact that they are there means card and product certification will be blocked when the item to be certified conforms to one spec or standard, and the scheme mandates conformance with the other spec or standard. In the 7816 update work this year, ISO/IEC JTC1/SC17 did not seek a migration together of 7816, EMV and the ETSI SCP spec.

## **EMV Migration drivers**

During the TB5 meetings, the main drivers for EMV migration were taken for granted. The effort was more on identifying ways to overcome the barriers than means to accelerate the drivers. Looking into a summary of the main drivers worldwide (as presented recently by VISA), we have addressed some of the issues involved in achieving the level of satisfaction promised by the drivers.

### *Fraud reduction*

During the two-year life of TB5 those planning or implementing the migration have made some major changes.

### PIN based transactions

Although, initially APACS in the UK started implementing signature based EMV transactions, during the migration it was decided to change course and adopt PIN based ones. For reasons of secure cardholder verification, and based upon success in France, the UK has already decided to adopt this enhancing security solution. This decision implies new investments but, due to the rising fraud in countries like the UK, this extra expenditure is cost justified.

### Static Data Authentication (SDA) vs. Dynamic Data Authentication (DDA)

No country so far in the EU has decided to implement cards with Dynamic Data Authentication, except Austria. But, due to the fact that it was the only country that did so, it has postponed its implementation until more countries join in. But, confronted with the fraud of skimming that is feasible with the SDA approach, countries are rethinking their initial plans and may bring the shift to DDA closer than envisaged.

The issue was discussed in TB5 and of course it is a cost issue. No concrete or convincing figures can justify the additional investment that refers basically to the issuers, since the card cost is much higher than that of the SDA ones.

This was termed as an open issue for TB5 that may be further addressed during a continuation in the framework of eEurope initiative.

### *Competitive tactic*

Was not discussed.

### *Offline processing*

Only Italy referred to telecommunication cost cutting as a potential driver for EMV migration.

### *Multi-application and post-issuance customisation*

Three applications – in addition to debit/credit – that can be used in an EMV card, were discussed and further elaborated by TB5.

### Web-payments

In February 2002, a presentation was made by MasterCard, explaining the new Internet payment specifications (ucaf), related directly to the possibility of using a smart card for cardholder authentication to the issuer. The same strong authentication can be used also for Internet banking.

Since then, German banks have demonstrated their use in March 2002 and US banks have adopted the solution as well.

As both VISA and MasterCard solutions are well received by merchants and banks and a promising adoption is seen, the use of strong authentication provides enhanced security as user name and password is considered vulnerable.

### Public Ids

The case of Scandinavian countries, and in particular Finland and Sweden, was brought in TB5 discussions, whereas banks and the public authorities work on common projects. In Finland after a slow take-off of the Public identity project of the Minister of Interior, the banks have offered to store in their EMV cards certificates that would allow citizens to have access to public services. The project was announced in June 2002 and is on-going. Despite some arguments about the feasibility of such efforts, this synergy may provide an important driver for EMV migration.

### Transport

In two TB5 sessions, the possibility of using EMV – or e-purse cards – for mass transport ticketing was discussed. TB9 contributed the experience of similar rollouts, especially in Eastern Asia, where combi cards, using contact and contactless technologies are used.

Omnipurse, a European IST project initial called Combi-CEPS, presented the work done with the use of EMV based cards and contactless tickets in reasonable transaction times.

During the discussion, the relations between the banks and the transport operators were brought up but not discussed extensively. This also can be an item to be carried forward in future work.

### *Leapfrog strategy*

This strategy of skipping some technological stages and implementing EMV directly was not discussed, although a number of emerging countries, especially in Central and Eastern European countries are doing this. It is an item that can be elaborated at

the next stage.

*Fraud avoidance*

Although this was one of the principal considerations of TB5, it was not discussed as such in detail. The idea of creating a kind of fraud watch mechanism in Europe due to credit card “fraud migration” during EMV migration has not been elaborated.

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