

Euro Retail Payments Board

European Cards Stakeholders Group

Interim report

Feasibility Study on the development of open specifications for a card and mobile contactless payment application

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Annual Stock Taking Exercise using Progress Indicators

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1 Preamble

In places, this report refers to many past recommendations that were addressed to the (de Facto) association known as the 'Cards Stakeholders Group' (CSG). The CSG ceased to operate as a result of the creation of the international not-for-profit association known as the 'European Cards Stakeholders Group' (ECSG) in 2016.

During its first Board meeting, the ECSG formally decided to undertake those activities which were, until that point, being managed by the CSG. For this reason, there may be historical references to the CSG within this document.

The ECSG has since published version 8.0 of the 'SEPA Cards Standardisation Volume' on 1 March 2017, which was delayed from the original December 2016 foreseen publication date due to the level of comments received during the public consultation process. As part of this release, the ECSG undertook an impact analysis of the IF regulation.

2 Feasibility Study on the development of open specifications for a card and mobile contactless payment application

2.1 Background and Purpose

During its November 2015 meeting, the ERPB recommendation ERPB/2015/rec 10/ii was addressed to the CSG, requesting them to:

“Conduct a feasibility study on the development of open specifications for a card and mobile contactless payment application, as well as on their implementation, maintenance and testing. For mobile applications, the open specifications should also address the different possible configurations for the management, provision and personalisation of the card data: secure element (SE, including universal integrated circuit card (UICC), embedded SE and microSD) and host card emulation (HCE). The future specifications should build on the work of EMVCo and GlobalPlatform.” (December 2016)

This ERPB recommendation was based on the following identified Issue/Rationale:

“The standardisation of open specifications for a card and mobile contactless payment application could allow payment application developers and card manufacturers to achieve economies of scale and would lower the cost of these items for the issuers, thereby fostering contactless adoption. The specification of common POI implementation guidelines will lead to a more uniform payment experience, for both the consumer and the merchant.”

Note 1: The ERPB also addressed ERPB/2015/rec 8/i recommendation to EMVCo, to:

“Speed up the creation of a single common POI kernel specification for contactless transactions (already planned under EMV Next Generation) and make the specifications publicly available as soon as possible.” (December 2016).

This was based on the following Issue/Rationale:

Multiple standards with a variety of options are currently present in the market. The rationale is to streamline the standards used in the industry.

Note 2: The other aspects relating to ERPB recommendation ERPB/2015/rec 10 have been addressed by the publication of the SCS Volume Version 8.0

2.2 ECSG Market Analysis

2.2.1 Adoption of new payment technologies

As with the introduction of all new technologies, both issuers and acquirers need to be confident of the business case for investment. Issuers were reluctant to invest in NFC contactless cards whilst there was no critical mass of contactless acceptance devices in deployment. Likewise, acquirers were reluctant to invest in contactless acceptance technology whilst there were not a significant number of contactless enabled cards in circulation. In addition, both the issuing and acquiring sides needed to have confidence that there was sufficient consumer demand in order to invest. These decisions were independent of the solutions being offered.

Schemes have worked with both issuing and acquiring members to support the deployment of contactless technology, initially through the development of specifications and the support of pilots and, as the technology became proven, through mandates for cards and POI, which require all new cards and POI to be contactless enabled. Contactless issuance and acceptance in several markets could now be considered mature, and where there are no commercial barriers to the adoption of contactless technology.

2.2.2 A Snapshot on market adoption in Europe

Recent press releases provide a snapshot on contactless market adoption in Europe.

Card issuance:

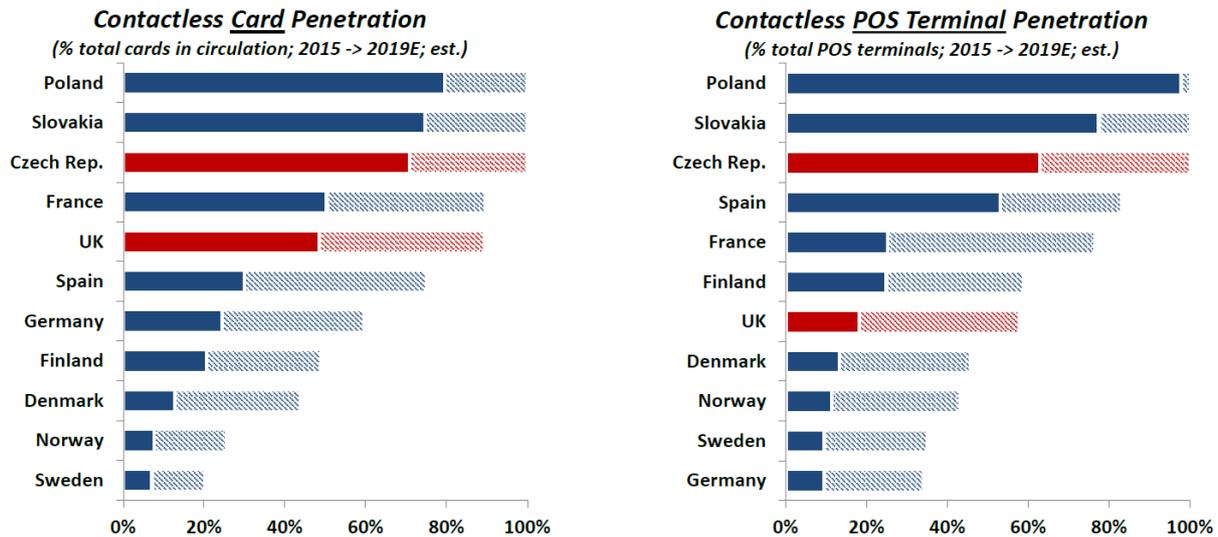
- “One in five card payments will be contactless by 2021. That’s an increase from one in 20 as of 2015. Europe is continuing to lead the growth in terms of contactless payment card issuance and usage. At the end of 2015, there were 346 million contactless cards in Europe, up 41 percent from the year earlier. Growth in usage increased threefold to 3.7 billion during the year” (*Source: “Global Payment Cards Data and Forecasts to 2020 (RBR)”*)

POI acceptance:

- In Feb 2017, Visa reported that European Issuers had issued approx. 175 million Visa Contactless cards, accepted at approx. 3.5 million locations. In addition, approx. 40% of the face to face transactions processed by Visa in Europe were contactless
- “Merchants’ acceptance plays a key role in the development of contactless. In Europe Schemes have mandated that from 1st January 2016, newly deployed and upgraded POS terminals must be contactless-enabled as a standard acceptance method, contactless functionality must be activated, POS Terminals must accept Cards and Access Devices, EMV-based chip technology and contactless magnetic stripe technology (Starting 1st Jan 2017 for Sweden, Lithuania, Estonia, and Latvia). From 1st January 2020, all existing POS terminals must be contactless-enabled” (source: SPA “An Overview of Contactless Payment Benefits and Worldwide Deployments”)

- First-Annapolis also estimates contactless penetration 2019 versus 2015 in eleven countries in Europe

Contactless Penetration in Europe



(Source: Erik Howell, First Annapolis - [“Contactless Cards Work: Evidence from Developing and Mature European Card Markets”](#))

Note: In its final report, which will be submitted to the ERPB in November 2017, the ECSG will supply a more thorough analysis of this aspect.

2.3 ECSG interim deliverables

At the February 2017 Board meeting of the ECSG, the Volume Sub-Group was requested to perform further research on each of the following scenarios:

1. The feasibility of using one of the existing EMVCo contactless kernels as an open SEPA contactless kernel, made available to all interested parties licence free, by the kernel owner, without precluding the use of any existing kernels
2. Migrating to EMV Next (2nd) Gen and the common contactless kernel defined within that specification as the ‘SEPA kernel’

In arriving at these two scenarios, the ECSG had discussed during its Board meeting in February 2017 whether it would make any sense to develop another kernel on top of the existing seven, if one of the existing kernels could meet the objective of a common contactless kernel, before the deployment of 2nd Gen.

2.3.1 Contactless card applications and POI specifications interaction

Whilst the development of specifications for card and mobile contactless payment applications may be considered as proprietary, they have all been based on EMVCo technology. The global card schemes that initially developed their own kernels provided a functionally identical kernel that has been included in the EMVCo specifications. These Kernels (currently C1 to C7) are listed on the EMVCo website. In addition, EMVCo defined the EMVCo Entry Point Specification.

Some local card schemes have also developed their own contactless payment application and associated kernel, with at least one registered with EMVCo. Local kernels registered in this way and which support the Entry Point Specification can also be implemented onto EMVCo-compliant terminals.

The combination of the EMVCo contactless Kernels and the Entry Point Specification allows a POI to support all Kernels of choice and to implement contactless technology in a uniform and consistent manner.

2.3.2 Results of the ECSG sectors' analysis.

In February 2017, a survey was performed where each ECSG sector was asked to provide comments comparing the scenarios in terms of technical and functional complexity, deployment, timeline, costs, legal issues and users' impacts. It also included considerations on complexity, rationale and customer impacts.

The ECSG managed the sector contributions, presented within a SWOT analysis that is provided in Annex 1. The outcome of this exercise was approved by the ECSG board in May 2017.

The sectors' analysis outlines that

- In migrating to either one existing single kernel or EMV 2nd Gen, the disadvantages largely outweigh any benefits with regard to the requested investigation study
- Either of the two scenarios will have an impact and, therefore, a financial cost to the issuance side
- Currently, the market has at least 7 Kernels. It is not possible to reduce the number of Kernels for as long as merchants/acquirers still have to accept existing and non-European contactless card payment applications
- Scenario 1 could be considered as an intermediate step using existing kernel(s) as an open specification for Market players, subject to commercial/operating agreements
- There is a common understanding that in scenario 2 the EMV 2nd Gen will offer one open specification (The publication is expected in Q2 2017)
- As of today, Schemes have not made a strategic decision about the adoption of 2nd Gen. 2nd Gen cannot ensure a single open EMVCo POI Application until all the schemes have decided to converge to 2nd Gen

2.4 ECSG interim assessment

In May, the ECSG board endorsed the view that amongst the scenarios analysed, the best possible long term solution is provided by EMV 2nd Gen. EMV 2nd Gen specification includes much more than only contactless specifications.

Using existing kernel(s) as an open specification could be considered as an intermediate step for market players, subject to commercial and operating agreements.

2.5 Next steps in responding to the ERPB Recommendation

The ESCG will continue its analysis in the development of different open specifications for contactless card and mobile payment applications according to ERPB recommendations and SCS Volume requirements, with the aim to be able to present a final report at the November ERPB meeting.

2.6 Annex 1: SWOT analysis

Scenario 1: open an existing kernel as the European open contactless POI specification

Strengths	Weaknesses
<ul style="list-style-type: none"> • Infrastructure ready, readily available in deployed terminals • Well defined and proven certification framework • Proven technology/know-how • Lower Total Cost of Ownership compared to own kernel solution • One single contactless kernel approach • No specific scheme requirements contactless • Open a specification in addition to scheme existing technology 	<ul style="list-style-type: none"> • Simple technical concept, difficult to bring to reality. Governance issues beyond the technical aspects • Existing kernels will have to be maintained and upgraded • Existing hardware still required to support multiple kernels • Risk to innovation, no differentiation between contactless services • RSA algorithm limitations within a few years • One specification chosen at the expense of the others • Schemes must endorse one existing proprietary kernel to become the open kernel • Unrealistic Scheme shrink functional contactless scope to a minimum set of common functions • Transition period of 4-6 years with parallel support old & new cards • Switch to one single kernel will increase cost in the transition period • Different issuer contactless payment services will still exist (different floor limits, risk parameters, etc...)
Opportunities	Threats
<ul style="list-style-type: none"> • Time to market/Quick to implement • Low investment to be launched • Faster implementation, easier deployment, implementation • Lower efforts • Open contactless technical solution earlier than EMV 2nd Gen • Minimise on Long Term terminal and card costs • Long term reduction of kernels 	<ul style="list-style-type: none"> • Licencing issues • Increase the number of kernels • Cost-benefit analysis is challenging • Certification and future evolutions controlled by one Scheme • Not compliant with EMV 2nd Gen/doubled effort required • Possible legal issues on membership and fee structure • Acceptance issues outside Europe if the kernel is not one of the broadest supported

Scenario 2: EMV 2nd Gen kernel as the European open contactless POI specification

Strengths	Weaknesses
<ul style="list-style-type: none"> • Common new infrastructure supported, if there is a European migration to EMV 2nd Gen • Include several functional and security improvements • Global Interoperability, if adopted by the Schemes • Future proof 	<ul style="list-style-type: none"> • Unproven technical standards which are still in proof of concept • Several Governance issues • Will require high investments on the entire payment chain (issuing, acquiring, merchant) • Support of existing kernels and 2nd Gen has to be maintained during (a long) transition period • Long migration time with no visible benefit to the end consumers as consumers aren't aware of the current interoperability technical issues
Opportunities	Threats
<ul style="list-style-type: none"> • Same specification for contact & contactless payments => same features (biometry CVM, payment related data...) managed on both interfaces. • No risk of a double effort as with Scenario I 	<ul style="list-style-type: none"> • Rationale of migration to EMV 2nd Gen is disputed • 2nd Gen Kernel won't be deployed for several years • Obsolescence risk during (long) implementation

3 Annual Stock Taking Exercise using Progress Indicators

3.1 Background:

On 29 June 2015 the ERPB invited the CSG to report back to the ERPB every 12 months, with an update on how implementation of harmonised standards related to payment cards in Europe was progressing. The CSG presented a progress report to the ERPB, including a proposal to introduce indicators for further status updates to the ERPB. These indicators would better track how usage of implementation specifications conformant with the requirements expressed in the SEPA Card Standardisation Volume of Requirements is evolving.

On 13 June 2016, the CSG presented its “Stock Taking Exercise” & Implementation plan report update. Within section 4 of that report, it was proposed that the CSG introduce the use of progress indicators for new and installed solutions in the Card to Terminal, Terminal to Acquirer and Terminal Security domains, using this data and indicators to form the reporting of the indicators in mid-2017.

On this basis, the ERPB:

- took note of the CSG report;
- endorsed the CSG’s proposal to introduce indicators in its future annual progress reports to the ERPB regarding the state of play of cards standardisation. These indicators would be presented from mid-2017 (using 2016 data for that year)

3.2 Developments in the Stock Taking Exercise update report using progress indicators

Since the CSG supplied the update report to the ERPB in June 2016, a number of developments have taken place such as:

- The establishment of the ECSG as a legal entity
- SEPA Cards Standardisation Volume version 8, published on 1 March 2017
- Establishment of the VCMC (Volume Conformance management Committee), linked with the new ECSG status

The ECSG has been made aware of market implementations of Volume v7.1 and v8 but has not, as yet, fully labelled any of these specifications. Currently the ECSG has been contacted by four specification providers for further information on how to undertake the ECSG labelling process.

The newly formed VCMC has already started its work.

Reporting to the ECSG board, it is formed by two representatives of each sector with a high level of engagement and co-chaired by a scheme sector and a retailer sector representatives.

The group is actively discussing any necessary updates to previously proposed “process” and “assessment template” documents, as well as strengthening the necessary code of conduct around key aspects such as the due confidentiality.

Label validity period and its relation with “ECSG Volume” version management are equally being addressed in order to implement an efficient approach.

The ECSG labelling process continues to be based on a “self- assessment” declaration.

The VCMC expects 2017 to be a transition, pilot year during which the labelling process will start to be tested with some interested candidate stakeholders.

However, as of May 2017, the ECSG is not in a position to provide an update to the Stock taking exercise or an overview of the progress indicators for 2016 based on a Volume Conformance label. It intends to deliver the quantitative report on both aspects to the ERPB Board in November 2017.

