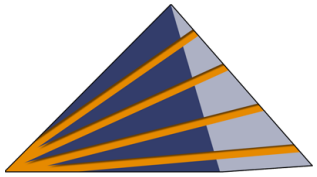




CSG 044-15
(v1.0)

# Euro Retail Payment Board

# SEPA Card Standardisation

## "Stock Taking Exercise" & Implementation plan

### Progress Report

**29 June 2015**

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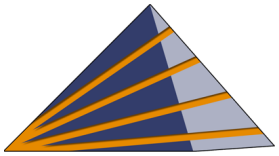
Cards Stakeholders Group

Cards Stakeholders Group

CSG 044-15
(v1.0.2)

3rd June 2015
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# Euro Retail Payment Board
# SEPA Card Standardisation
## "Stock Taking Exercise" & Implementation plan
## Progress Report
## 29 June 2015

**Circulation**: ERPB (cc. CSG GM)
**Restricted**: Yes

## Content

Cards Stakeholders Group

# 1. Executive Summary

## 1.1. Main Conclusions

During its 1 December 2014 meeting, the Euro Retail Payments Board (ERPB) agreed

- to invite the CSG to complete its stock taking exercise of market initiatives developing technical standards (so called implementation specifications) by June 2015;
- to invite the CSG to formulate a procedure for the assessment of conformity of those technical standards with the SEPA Cards Standardisation Volume by June 2015.

This CSG Stock Taking Exercise provides a report on the current situation for card payment standards in 4 of the most important card payment chain domains: Card Payment **Terminal to Acquirer** Protocols; **Card to Terminal** Domain (covering the card payment terminal application); Terminal **Security**; **Acquirer to Issuer** Processing.

This report notably shows how the SEPA card standardisation market is progressively evolving from a previously fragmented situation, where many standards were defined domestically, to a more pan-European organisation of the card standardisation ecosystem. This evolution is based both on the implementation of global standards (ISO, EMV…) and on the use of European standardisation or market initiatives detailed in this report.

Beyond the analysis of the situation, this report also presents the implementation plans of the CSG regarding the procedure for implementation specifications conformance assessment. With the creation of a new group, called SCCMB[1], the CSG will implement a "labelling" procedure to monitor the conformance of implementation specifications initiatives to the requirements spelled out in the SEPA Card Standardisation Volume.

These achievements, if pursued and supported by all the stakeholders and regulators, will improve the harmonisation of card transactions in SEPA, while also fostering innovation. Based on these conclusions, the ERPB is invited to acknowledge the present report, including the analysis of the situation in the different domains and the proposed recommendations and invitations.

For **Card-to-Terminal** and **Terminal-to-Acquirer domains**, the CSG Members could already agree on the same set of functional requirements, as described in the SCS Volume. For the implementation, the CSG concludes that the choice of implementation detailed specifications should be market driven. However, these implementations specifications have to be based on requirements and principles that are defined in the SCS Volume.

Card acquirers and processors should recognise and work with at least one SCS Volume conformant implementation specification. For new terminals, the choice of implementation

[1] SEPA Card Certification Management Body

specifications should be market driven among Volume conformant protocol specifications and should not be limited by the terminal software architecture. However, for the installed terminal base, it is not recommended to require a migration to a Volume conformant protocol specification since this would result in a huge investment, with no obvious return on investment for merchants or PSPs.

In the **Terminal Security domain** also, a lot of progress has already been achieved since all the CSG Members could already agree on the same set of security requirements, as described in the SCS Volume. It is now recommended that the identified evaluation methodologies, processes and certification frameworks implement the relevant security requirements described in the SCS Volume. It is also recommended that Card Schemes strictly follow the process described in the SCS Volume.

So far the CSG has only partially analysed the **Acquirer to Issuer Card Processing domain** with a focus on Data Element requirements and processing framework requirements. The CSG proposes to undertake a study, at European level, to evaluate any interest for and benefit of a migration to a given standard of messages set and clearing & settlement practices.

The ERPB is also invited to acknowledge the CSG plans on the **SCCMB** (new structure dedicated to the labelling of implementation specifications and monitoring of the conformance to the SCS Volume requirements). The CSG intends to put in place the SCCMB when the new CSG governance will be in place and also start the initial setup and preparation work during the second half of 2015.

Finally, the CSG proposes to keep the ERPB informed in the future on the study in the Acquirer-to-Issuer card processing domain, on the setup of the SCCMB, and more generally to provide an update of the Card Standardisation Stock Taking Report reflecting main evolutions with a periodicity of 12 or 18 months to be agreed by the ERPB.

Cards Stakeholders Group

## 1.2. Recommendation table

| Number | Issue / Rationale | Recommendation/Invitation | Addressee |
|---|---|---|---|
| **CSG-R1** | **Terminal to acquirer domain:**<br>The same set of functional requirements has been agreed among Card Stakeholders but, there is still a widespread fragmentation in the terminal to acquirer card payment protocols owing to differing domestic market practices. | The ERPB recommends that for newly installed payment card terminals the choice of protocol specification should be market driven among protocol specifications which are conformant to the SEPA Cards Standardisation Volume (SCS Volume).<br>Acquirers and processors should recognise and work with at least one SCS Volume conformant protocol specification. | Acquirers and processors of payment card transactions.<br>Merchants accepting payment cards. |
| **CSG-R2** | **Card-to-terminal domain:**<br>All terminal applications in Europe are now based on EMV specifications.<br>However, different payment applications are used to implement the rules of the different card schemes active in the different markets. This is due to different market practices and leads to a widespread market fragmentation in Europe. | The ERPB recommends that for newly installed payment card terminals the choice of terminal payment application should be market driven among terminal payment applications which are conformant to the SEPA Cards Standardisation Volume (SCS Volume).<br>Acquirers and processors should recognise and work with at least one SCS Volume conformant terminal payment application. | Acquirers and processors of payment card transactions.<br>Merchants accepting payment cards. |
| **CSG-R3** | **Terminal security domain:**<br>Significant convergence has taken place over recent years since the CSG could already agree on the same set of security requirements.<br>Two security evaluation methodologies/certification frameworks have been identified to verify the respect of these requirements:<br>PCI Security Standard Council<br>Common Criteria | The ERPB recommends that the identified terminal security certification methodologies, processes and certification frameworks will implement the relevant list of requirements described in the SCS Volume.<br>Schemes shall follow strictly the process described in the SCS Volume for this domain. | Terminal security implementation specification providers and their certification bodies.<br>Card Schemes. |

| | | | |
|---|---|---|---|
| **CSG-I1** | **Acquirer to Issuer domain**:<br>The CSG considers the acquirer to issuer card processing domain as a stable one, but it has not fully analysed it. It has only been partially included in the SCS Volume. | The ERPB invites the CSG to perform a study, at European level, to evaluate any interest and benefit of a migration to a given standard of messages set and clearing/settlement practices in the Issuer-to-Acquirer domain. | Cards Stakeholders Group |
| **CSG-I2** | **SCS Volume implementation**:<br>The setup of the SCCMB, a structure dedicated to the SCS Volume Labelling of implementation specifications and monitoring of the Conformance to the SCS Volume requirements, represents a necessary step for the implementation of the SCS Volume. | The ERPB endorses the conformance procedures put forward by the CSG for the implementation of the SCS Volume and invites the CSG to implement these procedures during second half of 2015. | Cards Stakeholders Group |
| **CSG-I3** | **Reporting on the card technical standard harmonisation:**<br>The CSG has been asked to perform a stock-taking exercise on the implementation of standards related to payment cards. | The ERPB invites the CSG to regularly report back to the ERPB on the progress in the implementation of harmonised standards related to payment cards in Europe. Such reporting is foreseen at least every 18 months. | Cards Stakeholders Group |

# 2. Introduction

## 2.1. Background on the Cards Stakeholders Group (CSG)

The CSG:

1. Was created in 2009;
2. Regroups 25 Members (organisations) of five main card value chain sectors: PSPs, Schemes, Processors, Vendors and Retailers;
3. Has, as a main objective, the definition/description of standard requirements related to Cards (card and card based transactions);
4. Organises its work with numerous expert teams whose membership is open subject to the appropriate knowledge;
5. Has published the SEPA Card Standardisation (SCS) Volume V7.0 in Jan. 2014 (stable version for face-to-face card transactions), composed of 6 books [2];
6. Has also published SCS Volume V7.05 in March 2015 [3] (version for consultation including also remote transactions), composed of 7 books (with a new book on Processing, as required i.a. in the seventh SEPA Progress Report);
7. Is aiming to publish an updated version of the SCS Volume V7.1 (individual books) by end 2015 and the SCS Volume V8.0 in Q1 2017;
8. Conformance with the SCS Volume is a strategic decision of each stakeholder. It will be based on a self-assessment whose results will be published. The first requirements they will need to respect are related to face-to-face transactions in Jan. 2017 and are based on the requirements published in the SCS Volume Version 7.0 in Jan. 2014.

Annex 1 provides more information about the CSG.

[2] http://www.cardscsg.eu/index.cfm/sepa-cards-standardisation-volume-book-of-requirements-v71/
[3] http://www.cardscsg.eu/index.cfm/volume-v705-under-public-consultation/

## 2.2. Contents of report

This SEPA Card Standardisation Stock Taking Exercise Report includes:

1. A **report** on the current situation for card payment standards in 4 domains:

    a. Card Payment **Terminal to Acquirer** Protocols;

    b. **Card to Terminal** Domain (covering the card payment terminal application);

    c. Terminal **Security**;

    d. **Acquirer to Issuer** Processing.

    The scope is related to Face to Face payments (local transactions) for the 3 first domains.

    Where relevant, migration expectations to standards which have indicated their intention to become SCS Volume conformant (such as C-TAP, EPAS or IFSF) have been reported.

2. The **detailed data** of the Stock Taking Exercise provided as a spreadsheet in Annex 3.

3. The **Terms of Reference of the Labelling Entity** provided in Annex 4.

    The labelling Entity, called SCCMB (SEPA Card Certification Management Body), is the group in charge of checking & monitoring the conformance of standards and stakeholders to the SCS Volume.

The main points of the above are presented in the following sections.

# 3. Card Standardisation Stock Taking Exercise

## 3.1. Card Payment Terminal to Acquirer Protocol domain

This domain refers to the communication protocol between the card payment terminals and the acquirers. These communication protocols are necessary to interconnect the merchant payment systems (card payment terminals, or concentrators of card payment terminals in the case of large retailers) with the acquirer systems. These communication protocols are used every time a transaction takes place at a retailer's point of sale through the payment terminal (Point of Interaction), they are used to exchange the payment data information between the payment terminal and the acquirer systems.

### 3.1.1. Introductory remarks

- Previously, all Terminal to Acquirers Protocols were defined domestically (mainly by the acquirers or Terminal Managers i.e. the service providers managing the terminals for the merchants). The continued use of legacy protocols means the markets are currently fragmented. However, where the use of a specific protocol was previously mandated, this is no longer the case.
- Main Protocol families (models) are **ISO8583[4], ISO20022[5].**
  - Note: There are many variants of ISO8583 which are incompatible with each-other but interoperability is achieved through the use of protocol conversion gateways.
  - Protocols may or may not respect SCS Volume Book 5 conditions. This notably means that they are based on FRAND conditions (Fair, Reasonable, And Non-Discriminatory conditions).
- Notable initiatives at Europe-wide level are:
  - **C-TAP**: Protocol with open governance in line with the SCS Volume; deployed in several countries (and massively in 2 countries).
  - **EPAS**: ISO20022 approved protocol, open, governance in line with the SCS Volume, wide stakeholder support including beyond Europe; deployment in an early phase.
  - **IFSF**: ISO8583 based protocol, initially from the petrol sector, proprietary but wide usage in petrol sector in all EU countries.
  - Other widely used protocols are: STD 70, CB2A, ABI, ZVT, all using ISO8583 variants and deployed domestically in several countries.

[4] Financial transaction card originated messages standard, under the responsibility of ISO/TC68/SC7. http://www.iso.org/iso/home/standards_development/list_of_iso_technical_committees/iso_technical_committee.htm?commid=365812

[5] Universal financial industry message scheme under the responsibility of the ISO20022 organisation. http://www.iso20022.org/

| Number of Terminals | Country | T2A Protocol | T2A Prot. Model | T2A Prot. Syntax | Respect of Book 5 conditions | T2A Protocol | T2A Prot. Model | T2A Prot. Syntax | Respect of Book 5 conditions |
|---|---|---|---|---|---|---|---|---|---|
| 1654 | **UK** | STD70 | 8583 | Bitmap | No? | | | | |
| 1584 | **Italy** | ABI-CB | 8583 | Bitmap | No? | | Min Req. | Min Req. | Yes |
| 1344 | **France** | CB2A | 8583 | Bitmap | No? | EPAS | 20022 | XML | Yes |
| 1125 | **Spain** | PRICE (HtoH)<br>TPV | 8583 | Bitmap | No? | PRICE<br>PRICE | 20022 & 8583 | Bitmap | Yes |
| 744 | **Germany** | GICC-ZVT | 8583 | Bitmap | No? | EPAS | 20022 | XML | Yes |
| 326 | **Poland** | Diverse, STD70, SPDH | | | No? | | | | |
| 279 | **Greece** | Diverse, SPDH | | | No? | | | | |
| 256 | **Portugal** | SPFS | Prop. | | No? | SPFS / EPAS | Prop. & 20022 | XML | Yes |
| 249 | **Netherlands** | C-TAP | | ASN-1 | Yes? | C-TAP | | ASN-1 | Yes |
| 215 | **Sweden** | Diverse, SPDH, SIXML, APACS60/OTRS | | Diverse | No? | | | | |
| 196 | **Finland** | Diverse, BBSAPACS40, APACS60/OTRS, SDI | | Diverse | No? | | | | |
| 154 | **Ireland** | STD 70 | 8583 | Bitmap | No? | | | | |
| 145 | **Denmark** | Diverse, APACS60/OTRS, SPDH, BBSAPACS40 | | Diverse | No? | | | | |
| 136 | **Belgium** | C-TAP | | ASN-1 | Yes? | C-TAP | | ASN-1 | Yes |
| 128 | **Romania** | Diverse, STD70, SPDH | | | No? | | | | |
| 119 | **Austria** | Diverse, ZVT, EVB, SPDH | | | No? | | | | |
| 96 | **Czech Rep.** | Diverse, STD70, SPDH | | | No? | | | | |
| 92 | **Croatia** | Diverse, STD70, SPDH | | | No? | | | | |
| 91 | **Hungary** | Diverse, STD70, SPDH | | | No? | | | | |
| 71 | **Bulgaria** | Diverse, STD70 | | | No? | | | | |
| 42 | **Slovakia** | Diverse, SPDH | | | No? | | | | |
| 36 | **Slovenia** | Diverse | | | No? | | | | |
| 35 | **Lithuania** | Diverse, SPDH | | | No? | | | | |
| 27 | **Estonia** | Diverse, SPDH | | | No? | | | | |
| 26 | **Latvia** | Diverse, SPDH | | | No? | | | | |
| 21 | **Cyprus** | JCC | 8583 | Bitmap | No? | | | | |
| 12 | **Malta** | Multiple | 8583 | Bitmap | No? | | | | |
| 12 | **Luxembourg** | EP2 | 8583 | XML | No? | | | | |
| **9192** | EU Wide | | | | | | | | |
| | IFSF | IFSF* | 8583 | Bitmap | No? | IFSF | 8583 | Bitmap | Yes |
| | nexo | EPAS* | 20022 | XML | Yes? | EPAS | 20022 | XML | Yes |
| | Acquiris | C-TAP* | | ASN-1 | Yes? | | | ASN-1 | Yes |

Notes:

1- **The above 2013 information reflects market situations rather than mandates given by approval bodies or other relevant organisations.**
2- **The protocol or terminal application given above correspond to the most commonly used solution on a given market and not to the only one.**
3- **Share of solution mentioned above can widely vary (typically between 60% and 95%)**
4- **Target information is given when an important group of stakeholders have agreed to migrate to a given solution or standard.**
5- **These organisations with a Yes have previously announced their intention to become Volume Conformant.**
6- **Many protocols are in used in different varients, even if based on a common standard**
7- **Countries marked in blue are using solutions and specifications based on the Service Providers offerings**
8- **All the terminal applications are EMV-based for the Card-to-Terminal domain**
9- **The terminal detailed application is written multiple when there are miltiple application variants for acquirers, sector domains, etc.**

### 3.1.2. Analysis

- Today, there is widespread fragmentation in the terminal to acquirer card payment protocols due to market practices.
- Some protocols are used in excess of 1 million terminals: ABI, STD 70, SPDH and CB2A. These are mostly domestic oriented protocols linked to a given national market or domestic card payment scheme.
- The CSG Members could already agree on the same set of functional requirements, as described in the SCS Volume.
- A conformance verification process (labelling) will be put in place by the CSG.

- 3 protocol specification providers have already indicated they were willing to comply with the requirements of the SCS-Volume:
  - Protocols with a EU-wide or multi-national usage e.g.:
    - IFSF (EU-wide usage mainly in the petrol sector)
    - C-TAP (multi-sector protocol used in several countries)
  - A new protocol based on ISO20022 standards:
    - EPAS (specification supported by the main card stakeholders in EU)
  - Other protocol specification providers might want to meet the labelling process.
- The supply and demand sides are taking different commercial strategies:
  - Acquirers (existing and new entrants, potentially from other regions) use their own supported protocols;
  - Retailers are asking for Pan European solutions.
- The terminal replacement cycle varies from 4 to 15 years depending on the retail sector and the type of device.

### 3.1.3. Recommendations

The choice of Protocol should be market driven. The protocol should be based on requirements and principles that are defined in the SCS Volume.

Acquirers and processors should recognise and work with at least one SCS Volume Conformant protocol specification, however:

- On the installed terminal base, it is not recommended to impose a given protocol specification.
  - This would result in a huge investment, with no obvious ROI (Return On Investment) for merchants, acceptors and PSPs.
- For new terminals, the choice of protocol specification should be market driven among SCS Volume Conformant protocol specifications and should not be limited by the terminal software architecture.

The above recommendation is based on the belief that Europe wide solutions will progressively replace current implementations. But it implies that a proper SCS Volume Conformance checking and monitoring process is put in place. Doing so, the progressive deployment and use of Volume Conformant solutions can be monitored. See section 5 of this report for more details about the SCCMB (SEPA Card Certification Management Body) setup.

## 3.2. Card to Terminal domain

The Card to Terminal domain refers to the communication taking place between the card and terminal. This communication is managed by the Terminal Application running in the terminal of the retailer (or any other payee/card acceptor).

### 3.2.1. Introductory remarks

- All terminal applications in Europe are now based on EMV specifications[6].
- Different payment applications are used to implement the rules of the different card schemes active in the different markets.
- Similar to the protocols, most of the Terminal Applications were defined domestically (mainly by acquirers and terminal managers). The continued use of legacy applications means the markets are currently fragmented.
- Notable initiatives at pan-European level:
  - **C-TAP**: application deployed in several countries (and massively in 2 countries). Open terminal application and governance in line with the SCS Volume.
  - **SEPA-FAST**: Open terminal application and governance in line with SCS Volume, wide stakeholder support including beyond Europe. Deployment in an early phase.
  - Other widely used applications are: ABI, CB5, DC-POS, etc. deployed domestically in several countries.

[6] EMV is a global technical specification based on contact chip, contactless chip, common payment application, card personalisation, and tokenisation, which exists to facilitate worldwide interoperability and acceptance of secure payment transactions. More information at: https://www.emvco.com/

| Number of Terminals | Country | Terminal Application C2T | Terminal Application Add. Specs. | T. App. Financial Presentment Mode | Respect of Book 5 conditions | Terminal Application | T. App. Financial Presentment Mode | Respect of Book 5 conditions |
|---|---|---|---|---|---|---|---|---|
| 1654 | **UK** | EMV | | Single/Dual | No? | | | |
| 1584 | **Italy** | EMV | ABI-CB | Single/Dual | No? | Min Req. | Single/Dual | Yes |
| 1344 | **France** | EMV | CB5 | Dual Message | No? | SEPA-FAST | Single/Dual | Yes |
| 1125 | **Spain** | EMV | Redsys<br>CECA | Single Message | No? | Redsys<br>CECA | Single Message | Yes |
| 744 | **Germany** | EMV | DC-POS | Single/Dual | Yes? | SEPA-FAST | Single/Dual | Yes |
| 326 | **Poland** | EMV | | | | | | |
| 279 | **Greece** | EMV | | | | | | |
| 256 | **Portugal** | EMV | SPFS | Single/Dual | No? | SPFS | Single/Dual | |
| 249 | **Netherlands** | EMV | C-TAP | Single & Completion | Yes? | C-TAP | Single & Completion | Yes |
| 215 | **Sweden** | EMV | Diverse, DK8111, Viking, PayApp, T2/CDP, BKX, PayPoint, Point VxPC, Integra Terminal | Single/Dual | | | | |
| 196 | **Finland** | EMV | Diverse, DK8111, Viking, PayApp, T2/CDP, BKX, PayPoint, Point VxPC, Integra Terminal | Single/Dual | | | | |
| 154 | **Ireland** | EMV | | | | | | |
| 145 | **Denmark** | EMV | Diverse, DK8111, Viking, PayApp, T2/CDP, BKX, PayPoint, Point VxPC, Integra Terminal | Single/Dual | | | | |
| 136 | **Belgium** | EMV | C-TAP | Single & Completion | Yes? | C-TAP | Single & Completion | Yes |
| 128 | **Romania** | EMV | | | | | | |
| 119 | **Austria** | EMV | | | | | | |
| 96 | **Czech Rep.** | EMV | | | | | | |
| 92 | **Croatia** | EMV | | | | | | |
| 91 | **Hungary** | EMV | | | | | | |
| 71 | **Bulgaria** | EMV | | | | | | |
| 42 | **Slovakia** | EMV | | | | | | |
| 36 | **Slovenia** | EMV | | | | | | |
| 35 | **Lithuania** | EMV | | | | | | |
| 27 | **Estonia** | EMV | | | | | | |
| 26 | **Latvia** | EMV | | | | | | |
| 21 | **Cyprus** | EMV | | | | | | |
| 12 | **Malta** | EMV | | | | | | |
| 12 | **Luxembourg** | EMV | EP2 | | | | | |
| **9192** | EU Wide | | | | | | | |
| | | | | | | | | |
| | nexo | SEPA-FAST | SEPA-FAST | Single/Dual | Yes? | SEPA-FAST | Single/Dual | Yes |
| | Acquiris | C-TAP | C-TAP | Single & Completion | Yes? | C-TAP | Single/Dual | Yes |

Notes:

1- **The above 2013 information reflects market situations rather than mandates given by approval bodies or other relevant organisations.**
2- **The protocol or terminal application given above correspond to the most commonly used solution on a given market and not to the only one.**
3- **Share of solution mentioned above can widely vary (typically between 60% and 95%)**
4- **Target information is given when an important group of stakeholders have agreed to migrate to a given solution or standard.**
5- **These organisations with a Yes have previously announced their intention to become Volume Conformant.**
6- **Many protocols are in used in different varients, even if based on a common standard**
7- **Countries marked in blue are using solutions and specifications based on the Service Providers offerings**
8- **All the terminal applications are EMV-based for the Card-to-Terminal domain**
9- **The terminal detailed application is written multiple when there are miltiple application variants for acquirers, sector domains, etc.**

## 3.3. Analysis

- All terminal applications are now based on EMV.
- Market implementations use a combination of consistent terminal applications and acquirer protocols.
- Today, there is widespread fragmentation in the terminal payment applications due to market practices.
- Some applications are used in excess of 1 million terminals: CB5, DC-POS, and ABI-CB. These are mostly domestic oriented protocols linked to a given national market or domestic card payment scheme.
- The CSG could already agree on the same set of functional requirements, as described in the SCS Volume.
- A conformance verification process will be put in place by the CSG.

- Two terminal application specification providers have already indicated they were willing to conform to the requirements of the SCS Volume:
    - Terminal Application with a EU-wide or multi-national usage:
        - C-TAP (multi-sector terminal application used in several countries - combined with C-TAP protocol).
    - A new Terminal Application:
        - SEPA-FAST (supported by several of the main card stakeholders in EU - combined with EPAS-ISO20022 protocol: OSCar Implementation Specification).
    - Other payment application specification providers might want to meet the labelling process.
    - Several payment applications could potentially coexist on a single terminal.

- The supply and demand sides are taking different commercial strategies:
    - Acquirers (existing and new entrants, potentially from other regions) using their own terminal payment applications.
    - Retailers asking for Pan European solutions.

### 3.3.1. Recommendations

The choice of terminal payment application should be market driven. The terminal application should be based on requirements and principles that are defined in the SCS Volume.

Acquirers and processors should recognise and work with at least one SCS Volume conformant terminal application, however:

- On the installed terminal base, it is not recommended to impose a given terminal specification.
    - This would result in a huge investment, with no obvious ROI (Return on Investment) for merchants, acceptors and PSPs.
- For new terminals, the choice of terminal application specification should be market driven among Volume Conformant terminal application specifications and should not be limited by the terminal software architecture.

The above recommendation is based on the belief that Europe wide solutions will progressively replace current implementations. But it implies that a proper SCS Volume Conformance checking and monitoring process is put in place. Doing so, the progressive deployment and use of Volume Conformant solutions can be monitored. See the section 5 of this report for more details about the Volume Conformance Verification Body setup (SCCMB).

## 3.4. Card Payment Terminal Security domain

The objective of Card Payment Terminal Security Certification is to provide a sufficient assurance level on the security of card payment terminals. First, security requirements are defined by the card payment schemes. Then the fulfilment of these requirements is evaluated by laboratories according to a given methodology. A certification body can then certify the security level of the terminal using the results of the tests. Finally, the Card Payment Scheme can approve the terminal to authorize its use within the scheme.

### 3.4.1. Introductory remarks

- All stakeholders have agreed the security requirements at CSG level, which can be tested with different testing methodologies and certification procedures.
- Card schemes and approval bodies are responsible for mandating the methodology and certification procedures.
  - The stock taking exercise table is presented by scheme/approval body (and not by country).
  - Notable initiatives which have already incorporated many/all of the CSG requirements:
    - **PCI SSC**[7]: worldwide organisation (most CSG requirements already included).
    - **CC**[8]: Common Criteria testing methodology and certification organisation based on scheme independent public certification bodies. All CSG requirements already included.

[7] https://www.pcisecuritystandards.org/
[8] https://www.commoncriteriaportal.org/

| | BB 2013 of national market | | | | Today | Today | Expected Evolution |
|---|---|---|---|---|---|---|---|
| Schemes or Approval Body | Number of Terminals Approved | Origin (Domestic or International) | Main Place of Activities in EU | Schemes or Approval Body | Terminal Security Basic Reqs. | Additional scheme or national security reqs | Terminal Security Reqs. |
| **Visa Europe** | Confid. | EU | All EU | **Visa** | PCI | | PCI+ |
| **MC** | Confid. | Int. | All EU | **MC** | PCI | | PCI+ |
| **Amex** | Confid. | Int. | All EU | **Amex** | PCI | | PCI+ |
| **JCB** | Confid. | Int. | All EU | **JCB** | PCI | | |
| **Discover** | Confid. | Int. | All EU | **Discover** | PCI | | |
| **CUP** | Confid. | Int. | All EU | **CUP** | | | |
| | | | | | | | |
| **UKCA** | 1654 | Dom. | UK | **UKCA** | "CC" | | CC |
| **CB** | 1344 | Dom. | FR | **CB** | PCI | Y | PCI+ |
| **Girocard** | 744 | Dom. | DE | **Girocard** | GBIC | | CC |
| **DPA** | 249 | Dom. | NL | **DPA** | PCI+ | | PCI+ |
| **Servired** | 1125 | Dom. | ES | **Servired** | PCI | Y | PCI+ |
| **4B** | | Dom. | ES | **4B** | PCI | Y | PCI+ |
| **Euro6000** | | Dom. | ES | **Euro6000** | PCI | Y | PCI+ |
| **PNC** | >600 | Dom. | Scandinavia | **PNC** | PCI | Y | PCI4 (PCI+) |
| **Bancomat** | 1584 | Dom. | IT | **Bancomat** | PCI | Y | PCI+ |
| **Dankort** | 145 | Dom. | DK | **Dankort** | PCI | Y | PCI+ |
| **BCMC** | 136 | Dom. | BE | **BCMC** | PCI | Y | PCI+ |
| **MultiBanco** | 256 | Dom. | PT | **MultiBanco** | PCI | Y | PCI+ |
| | | | | | | | |

### 3.4.2. Analysis

- A lot of progress has been achieved since all the CSG could already agree on the same set of security requirements.
- Two security evaluation methodologies processes and certification frameworks for POI (Point of Interaction) have been identified and are in the process of conforming with the SCS Volume requirements:
  - PCI Security Standard Council
  - Common Criteria
- Both methodologies will coexist in the EU market.
  - One scheme and one Approval Body (AB) intend to use the CC methodology and certification framework.
  - All other schemes and approval bodies, operating in the European market are using and intend to continue using the PCI methodology and certification framework.
- This is a major improvement compared to the previous situation in Europe 5 years ago, at which time there were more than 7 methodologies and certification frameworks.

### 3.4.3. Recommendations

- It is recommended that
  - The identified methodologies, processes and certification frameworks will implement the relevant list of requirements described in the SCS Volume.
  - Schemes follow strictly the process described in SCS Volume (Book 5 and future Book 7).

## 3.5. Acquirer to Issuer Card Processing domain

This domain refers to the communication between the PSP of the Payer (the card issuer) and the PSP of the Payee (the acquirer). In card systems it is usually composed of 3 distinct phases:

1. A real-time authorisation where the issuer is requested to authorise a transaction.
2. A financial presentment of the amount of the transaction usually done in batch mode in a clearing phase.
3. A final settlement phase corresponding to the financial transfer from the issuer to the acquirer corresponding to the performed transactions.

### 3.5.1. Introductory remarks

- Card Schemes usually ensure a default solution (switch, infrastructure, platform, etc.) that is available to allow a full reachability of issuers by acquirers for the acceptance of all cards of a given brand; this Scheme default solution provides services for:
  - Optional online authorisation if the card or the terminal requires it;
  - Clearing of transactions details;
  - Settlement between parties, i.e. issuers and acquirers.
- Several models exist for the exchange of messages between parties, the use of same or distinct platforms for each service, the settlement models are organised between acquirers and issuers, the latter being actors for the execution and the control of the financial flows.
- Beside the default Authorisation Switch and Clearing & Settlement solution referenced by schemes, other solutions are also used by acquirers and issuers, such as:
  - Bilateral or multilateral solutions established between some acquirers and issuers;
  - Intra-processor solutions when the acquirer and the issuer processor is the same;
  - Domestic/regional networks providing gateway services to acquirers and issuers to access Scheme default solution;
  - Alternative centralized Switch and Clearing & Settlement solution provided by third party service providers.

| Schemes or Approval Body | Transaction Volume of Scheme or Approved Solutions (B) | % of trx going through the default central switch | Origin (Domestic or International) | Main Place of Activities in EU | Schemes or Approval Body | Today A2I Architecture | Today A2I Type | Today A2I Auth MF (8583 variant) | Today A2I C&S MF | Expected Evolution A2 Architecture | Expected Evolution A2I Type | Expected Evolution A2I Auth MF | Expected Evolution A2I C&S MF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Visa Europe** | 37 | 45% | EU | All EU | **Visa** | Centr. Dual | Prop. | DMSA | DMSC | Centr. Dual | ? | ? | ? |
| **MC** | Confid. | | Int. | All EU | **MC** | Centr. Dual | Prop. | CIS | IPM | Centr. Dual | ? | ? | ? |
| **Amex** | Confid. | | Int. | All EU | **Amex** | Centr. Dual | Prop. | ? | ? | Centr. Dual | ? | ? | ? |
| **JCB** | Confid. | | Int. | All EU | **JCB** | Centr. Dual | Prop. | ? | ? | Centr. Dual | ? | ? | ? |
| **Discover** | Confid. | | Int. | All EU | **Discover** | Centr. Dual | Prop. | ? | ? | Centr. Dual | ? | ? | ? |
| **CUP** | Confid. | | Int. | All EU | **CUP** | Centr. Dual | Prop. | ? | ? | Centr. Dual | ? | ? | ? |
| | | | | | | | | | | | | | |
| **CB** | 10,2 | 71% | Dom. | FR | **CB** | Centr. Dual | Prop. | CBAE / 8583 | CB2C | Centr. Dual | Public | ATICA (20022) | ATICA (20022) |
| **Girocard** | 4,9 | N/A | Dom. | DE | **Girocard** | Not Centr. Dual | Public | GBIC / 8583 | DTA | Not Centr. Dual | Public | GBIC / 8583 | SCC (20022) |
| **Servired** | } | | Dom. | ES | **Servired** | Centr. Singl. | Prop. | 8583 | 8583 | Centr. Single | Public | 20022 & 8583 | 20022 & 8583 |
| **4B** | 3 | | Dom. | ES | **4B** | Centr. Singl. | Prop. | 8583 | 8583 | Centr. Single | Public | 20022 & 8583 | 20022 & 8583 |
| **Euro6000** | } | | Dom. | ES | **Euro6000** | Centr. Singl. | Prop. | 8583 | 8583 | Centr. Single | Public | 20022 & 8583 | 20022 & 8583 |
| **Bancomat** | 2 | | Dom. | IT | **Bancomat** | Centr. Singl. | Prop. | 8583 | 8583 | Centr. Single | Public | 8583 | 8583 |
| **Dankort** | 1,5 | | Dom. | DK | **Dankort** | | | | | | | | |
| **BCMC** | 1,5 | <5% | Dom. | BE | **BCMC** | Centr. Singl. & Completion | Prop. | 8583 | 8583 | | | | |
| **MultiBanco** | 1,7 | | Dom. | PT | **MultiBanco** | Centre. Singl / Dual | Prop. | SRTP / 8583 | SRTP / 8583 | Centr. Singl/Dual | Prop./Public | SRTP / 20022 | SRTP / 20022 |

Notes:

1- The % of transactions going throuhg the default central switch are below 100% since some transactions are processed in on-us mode and some transactions are processed by other processors.

2- N/A in the % of transactions going through means Non-Applicable. This means there is no default central switch but only a central infrastructure.

### 3.5.2. Analysis

- This domain is subject to oversight, is technically robust and has been stable over time. It has proven it can adapt to the different evolutions that have occurred (e.g. chip technology, remote payment).
- Each scheme references its own default switch solution to allow reachability, even if based on similar standards (e.g. ISO8583).
- There are different architecture/solutions in place for transaction processing (e.g. scheme default, intra processor, bilateral between acquirers and issuers).
- Acquirers and Issuers supporting several card schemes have to support several financial flows (settlement) specific to the individual card schemes.
- ISO8583 messages are still the standard in this domain, although many variants exist.
- The new standards based on ISO20022 are in an early phase:
  - First implementation of ISO20022 starts on clearing (SCC) in 2015.
  - The full set of messages is progressing at ISO level (ISO20022-ATICA message drafts exist).

### 3.5.3. Recommendations

- So far the CSG has not fully analysed this domain, it was only included in the published Data Element requirements (Book 3) and in the future processing framework requirements (Book 7).
- Given the stability of this domain, it is proposed to undertake a study, at European level, to evaluate any interest and benefit of a migration to a given standard of messages set and clearing & settlement practices. The CSG offers to organise this study.

# 4. Card Standardisation Stock Taking Exercise Detailed Data Summary

The Annex 3, in the form of a spreadsheet, provides details on the data which have been used for the above analysis and recommendations.

The source of this data is multi-fold:

- Blue Book with 2013 figures for the country based data;
- CSG Experts for the names and description of the standards and solutions used in the different countries or card systems;
- Public data of card payment schemes or domestic approval bodies (when this data was not confidential).

For 2 domains (Card Payment **Terminal to Acquirer** Protocol and **Card to Terminal** Application domains) the report data in sorted by country since the fragmentation today is still mainly based on countries (although the situation is evolving, see above).

For the 2 other domains (Card Payment Terminal **Security** and **Acquirer to Issuer** Card Processing) the report is sorted by schemes (or approval bodies) since these organisations are the ones who usually prescribe the security certification requirements or the default processing arrangements.

# 5. SCS Volume Labelling & Implementation Monitoring

The Annex 4 provides the draft terms of reference of the SCCMB, the group to be established by the CSG to check and monitor conformance to the SCS Volume requirements.

This group objective is to monitor conformance to the SCS Volume:

- Labelling of Implementation Specification and their Providers
  (eg. PCI/PCI SSC; EPAS-ISO20022/nexo; C-TAP/Acquiris; IFSF/IFSF.Org; etc.)
- Conformance Monitoring of other Stakeholders active in the card payment chain
  - Card Payment Schemes
  - PSPs (both acquirers and issuers)
  - Processors processing card transactions
  - Vendors developing card payment solutions
  - Retailers accepting cards

The work of this group can start in second half 2015 with a clear focus on labelling and the initial objective to:

1. Detail the assessment guide and procedures
2. Identify the main players to be potentially monitored
3. Make contact with those organisations that have already been identified by the CSG.

The initial priority will be on **labelling** i.e. the SCS Volume conformance of implementation specifications and their providers.

# 6. Conclusions & Next Steps

The current stock taking exercise shows that a lot could already be achieved in the domain of SEPA Card Standardisation.

The Card Stakeholders represented in the CSG could already:

- Agree on common requirements for functional, data elements, security, conformance verification, implementation guidelines and (in draft form) for processing;
- Make an initial analysis of the market situation just before the first market implementations of these SEPA requirements;
- Identify some detailed card standardisation implementation initiatives which have the potential to comply with the SEPA Card Standardisation Volume Requirements, some of which are based on ISO20022;
- Agree on procedures and terms of reference to verify and monitor the conformance of all these initiatives and of all the card stakeholders to the agreed requirements.

First implementations of ISO20022 standards have already started in the Terminal to Acquirer domain as well as in the Acquirer to Issuer domain, creating more interest and momentum also outside of Europe. These first implementations are being done while ensuring a full compatibility with the currently used ISO8583 implementations, in order not to create disruption and service availability problems for the payment service users, consumers and retailers.

These achievements, if pursued and supported by all the stakeholders and regulators, will improve the interoperability, security and harmonisation of card services in SEPA, while also fostering innovation.

Based on these conclusions, the ERPB is invited to acknowledge the present report including:

1. **The analysis of the Card Standardisation Situation in SEPA in the 4 covered domains:**
    - Card Payment **Terminal to Acquirer** Protocols.
    - **Card to Terminal** Domain (covering the card payment terminal application).
    - Terminal **Security** Domain.
    - **Acquirer to Issuer** Processing.

2. **The recommendations and invitations proposed in these different domains, namely:**

**R1 -** The choice of Terminal to Acquirer Protocol should be market driven. The protocols have to be based on requirements and principles that are defined in the SCS Volume.

Acquirers and processors should recognise and work with at least one Volume Conformant protocol specifications, however:

- On the installed terminal base, it is not recommended to impose a given protocol specification, as it would result in a huge investment, with no obvious ROI for merchants, acceptors and PSPs.
- For new terminals, the choice of protocol specification should be market driven among Volume Conformant protocol specifications and should not be limited by the terminal software architecture.

**R2 -** The choice of Terminal Payment Application should be market driven. The terminal applications have to be based on requirements and principles that are defined in the SCS Volume.

Acquirers and processors should recognise and work with at least one SCS Volume Conformant terminal application, however:

- On the installed terminal base, it is not recommended to impose a given terminal specification, as it would result in a huge investment, with no obvious ROI for merchants, acceptors and PSPs.
- For new terminals, the choice of terminal application specification should be market driven among Volume Conformant terminal application specifications and should not be limited by the terminal software architecture.

**R3 -** It is recommended that for the Terminal Security domain:

- The identified methodologies, processes and certification frameworks (PCI, CC) will implement the applicable list of requirements described in the SCS Volume.
- Schemes follow strictly the process described in Book 5 of the SCS Volume.

**I1 -** So far the CSG has not fully analysed the domain of Acquirer to Issuer Card Processing. It has only been included in the published Data Element requirements (Book 3) and in the draft processing framework requirements (future Book 7).

- Given the stability of this domain, it is proposed to undertake a study, at European level, to evaluate any interest and benefit of a migration to a given standard of messages set and clearing/settlement practices. The CSG offers to organise this study.

**I2** - The ERPB is also invited to provide input on the foreseen setup of the SCCMB, a structure dedicated to the SCS Volume Labelling of implementation specifications and the monitoring of the Conformance to the SCS Volume requirements.

Upon agreement of the ERPB and after integration of its input, the CSG intends to setup this group when the new CSG governance will be in place, and also start the initial setup and preparation work during second half of 2015.

**I3** - The CSG proposes to report on the following actions at a following meeting of the ERPB:

- Study in the domain of acquirer to issuer card processing
- Setup of the SCCMB, the SCS Volume Conformance Monitoring Group & initial results

Finally, the CSG also proposes to report annually or every 18 months on its action plan to the ERPB.

Cards Stakeholders Group

# Annexes

Annex 1: Card Stakeholders Group Information

Annex 2: Pie Charts

Annex 3: Stock Taking Exercise Detailed Data Spreadsheet (external file)

Annex 4: SCCMB Draft Terms of Reference (external file)

Cards Stakeholders Group

# Annex 1 - Card Stakeholders Group Information

## 1. What is the CSG?

The Cards Stakeholders Group (CSG) is the initiative of five major cards sectors joining forces to participate in a structural card standardisation dialogue.

The CSG is not a legal entity. For administrative purposes, it is supported by a Secretariat provided by the European Payments Council.

The European objective on cards within SEPA (usually referred to as “SEPA for Cards”) may be summarised as such:

"EU citizens should be able to use their cards for POS payments and ATM withdrawals with same level of ease and convenience throughout SEPA as in their home market. No technical, practical and commercial barriers would exist anymore for such use."

The card payments value chain involves a large number of stakeholders. The convergence of their views is of paramount importance to build consensus in standardisation work to allow the widest interoperability.

Therefore, five major cards sectors decided to join their forces by participating to a structural cards dialogue platform, the Cards Stakeholders Group: Retailers, Vendors, Processors, Schemes and Banks, including Payments Institutions (cfr. PSD). Each sector is represented by five Members (institutions). The ECB and the European commission attend the meetings as observers.

CSG recommendations are endorsed by the five sectors and are published by the European Payments Council in the SEPA Cards Standardisation Volume - Book of requirements. These data are made available under EPC IPR to Volume compliant providers delivering cards/POI implementation specifications on a FRAND basis (fair, reasonable, and non-discriminatory terms).

The CSG is an open initiative. Every cards stakeholder may ask to be registered as Associate Members and receive as such CSG information. Each sector organises every two years a process of renewal of its representation.


## 2. About Membership in the CSG

The CSG contains five sectors which are represented by members of their choice. These sectors can also appoint associate members who are entitled to receive documents and provide comments on standards. The CSG sectors are:

- Retailer / Wholesale
- Vendor (Manufacturers of cards, payment devices, and related IT systems
- Processor (of cards transactions)
- Card Scheme
- PSP / Bank (as designated by the EPC)

Members are able to demonstrate that they are part of a CSG Sector and contribute actively to CSG work by attending the CSG meetings and performing activities in order to fulfil the CSG mission as defined in the Terms of Reference.

- Members are either legally registered entities or de-facto entities, strongly present in the offering to the market of card related or card based services in at least one but preferably several EU countries, with their seat legally established within the EU or with a strong involvement in the Cards business in the EU.
- Each Member is to be represented by a single person. Each CSG Sector will decide on its own proxy policy.
- Members should not represent their own interests but those of their CSG Sector. A Member may only represent one sector. Members may not use their position in the CSG to create competitive advantage in the interest of individual stakeholders or specific communities. At the same time it is understood, that standards must not hinder innovation and competition between stakeholders.
- Each CSG Sector will elect five Members for a two-year renewable period, effective as of the first operational meeting of the CSG. A document with the list of the Members so elected will be published on the CSG website.
- It is essential that Members demonstrate their ability to liaise with their respective CSG Sector community, to seek their input according to well established, formal and transparent processes into work items under consideration by the CSG, and provide timely feedback to them on the work undertaken by the CSG as well.

## 3. Access Criteria per CSG Sector

As defined in the CSG Terms of Reference (ToR), each CSG Sector (banks, retailers, vendors, processors and schemes) will adopt its own access criteria for membership to the CSG.

To obtain further information on the process of becoming a member for a particular sector, please contact the corresponding representative:

Banking/PSP Sector: Claude Brun (bruncl@e-i.com)

Retail Sector: Ruth Milligan (milligan@eurocommerce.be)

Vendor Sector: Lorenzo Gaston (lorenzo.gaston@gemalto.com)

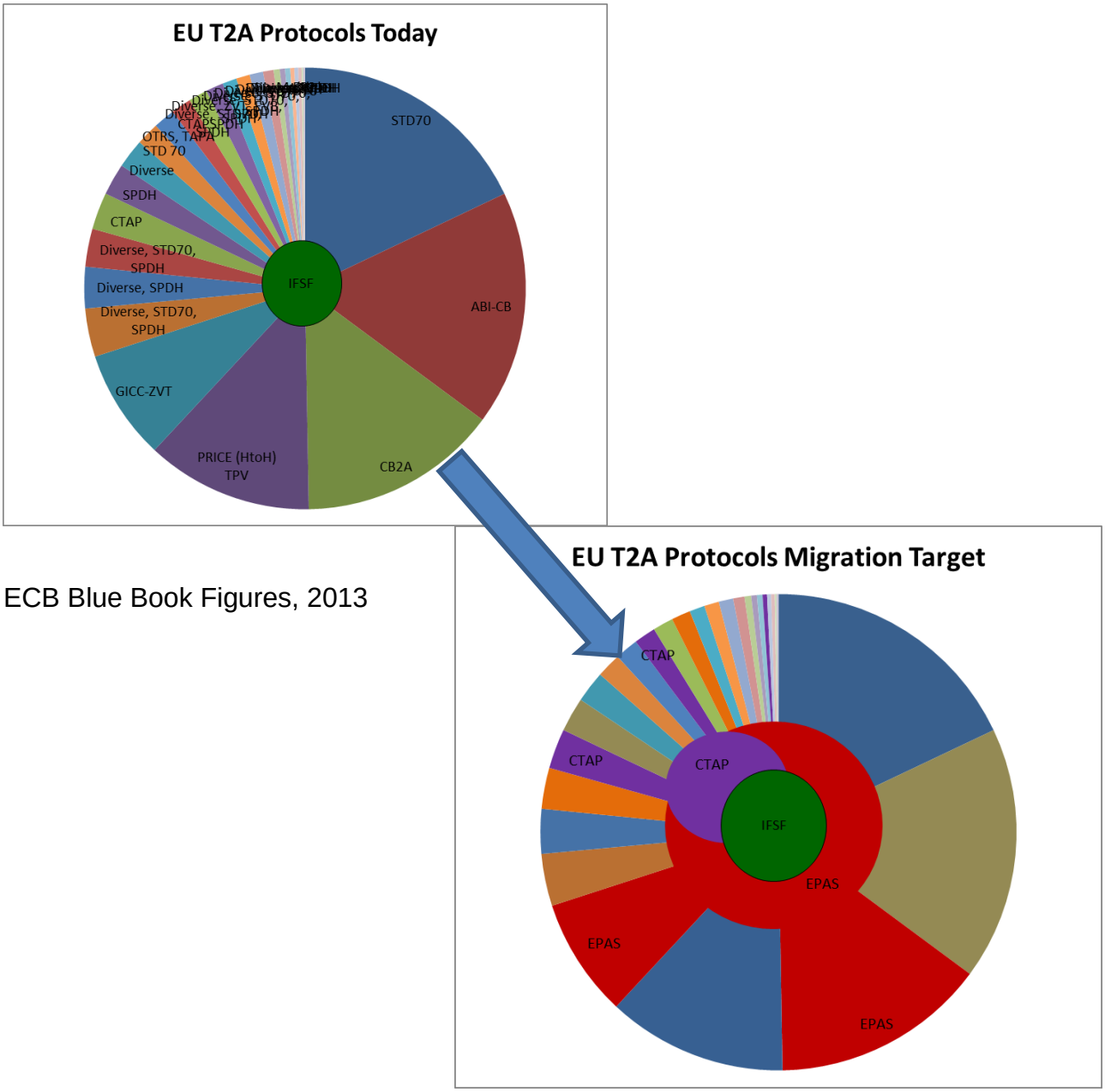
Processor Sector: Ana Grade (ana.grade@sibs.pt)

Schemes Sector: Marc Temmerman (temmermm@visa.com)

# Annex 2 - Pie Charts

## 1. T2A Protocol (Terminal to Acquirer domain)

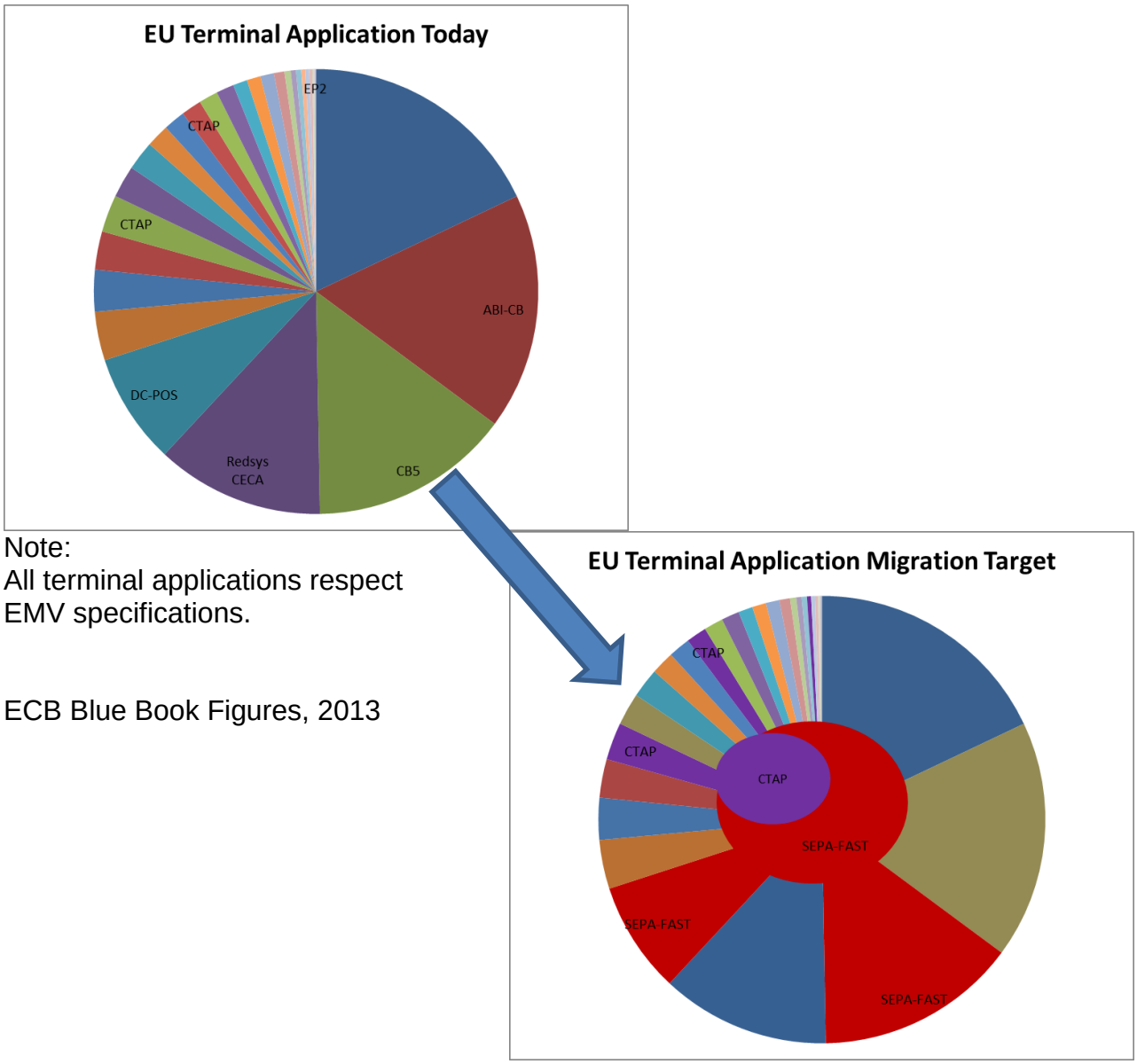
Order of the countries and size of the slice is based on the number of terminals in the country (largest to smallest)




ECB Blue Book Figures, 2013

## 2. Terminal Application (Card to Terminal domain)

Order of the countries and size of the slice is based on the number of terminals in the country (largest to smallest)




Note:
All terminal applications respect EMV specifications.

ECB Blue Book Figures, 2013