Implementing the SEPA Card Clearing Framework in the German Market

Project Report about the Payment Service Introduction in 2015/2016

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Content

1 Overview

Background of the Project

Pre-SEPA, many domestic card schemes in Europe used the domestic payment infrastructure to clear and settle card transactions between acquiring bank and issuing bank. The SEPA Card Clearing Framework (SCC) delivers a standardized framework to clear and settle card transactions in a SEPA payment infrastructure, thus leveraging card specific domestic payment processes to SEPA.

Deutsche Kreditwirtschaft (DK), also called “German Banking Industry Committee (GBIC)” is managing the girocard scheme. The girocard member banks have issued around 90 million debit cards. girocard is accepted at around 700.000 POS Terminals and 60.000 ATMs mainly in the German market. These girocards can be cobranded with the GBIC e-purse system GeldKarte and with Vpay or Maestro functions.

The German banks decided in 2013 to migrate the domestic legacy clearing systems for card transactions to the SEPA infrastructure using the SCC services until February 2016, in line with the second SEPA end date. Bundesbank and EBA Clearing are two Automated Clearing Houses (ACH) on the European market offering its members the SCC service.

Vision of the Project

The German banks follow the vision of SCC as a common SEPA clearing and settlement service for card transactions. This is supported by the fact that the central clearing infrastructures work without recognition of card scheme specific data, thus the central clearing infrastructure can easily be re-used for other card schemes as well. Already today the first non-German banks, be it European merchant banks or European banks with branches in Germany have implemented the service in their central payment infrastructure.

Results and Success Factors

Main results and key success factors of the project :

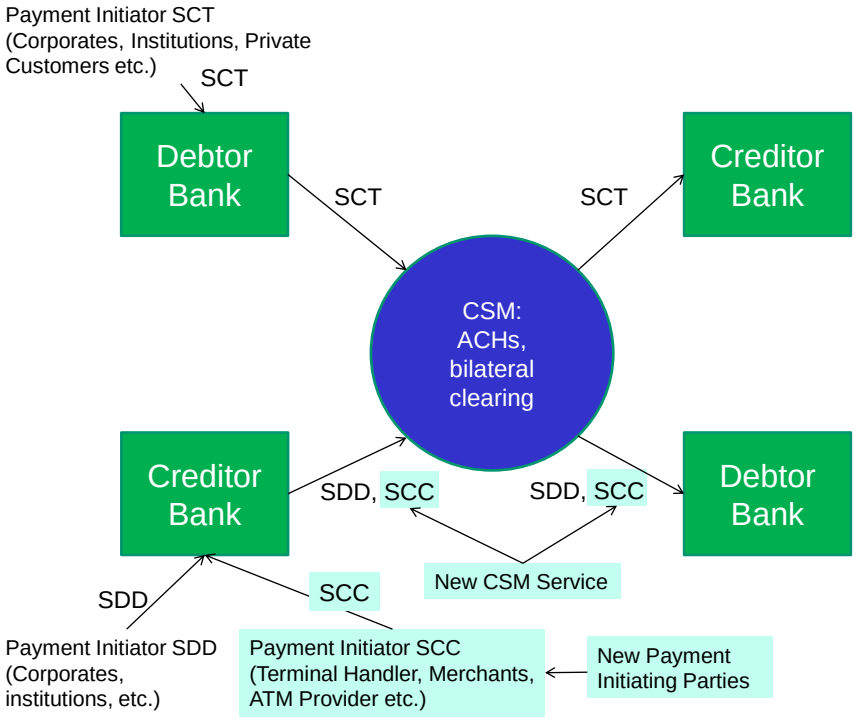
- Reach of the girocard system for European merchant banks through the SCC service of EBA Clearing and Bundesbank, making the girocard system more competitive in the SEPA region,
- Uniform SEPA payment infrastructure for all payment instruments within the banks, on modern IT architecture, replacing the legacy card clearing systems, expressed also by a synergy factor with the SDD implementation of 60 to 80%,
- Maintaining a very high processing quality expressed with an extremely low average return rate of SCC transactions in processing,
- Cooperation of card and payment business lines within the banks,
- Central coordination by a central project office,
- Involvement of all key stakeholders including terminal handlers/acquiring processors,
- Setup of an end-to-end test infrastructure for all major service participants,
- Strict rollout control, allowing a change management during pilots.

The project despite its complexity, including a large number of stakeholders was delivered within the scheduled time frame.

2 About SCC

The SEPA Card Clearing Framework (SCC) is a clearing mechanism for card transactions based on the SEPA payment infrastructure as implemented by the European Banking Industry. It yields a new SEPA clearing service of Automated Clearing Houses (ACH) or other Clearing and Settlement Mechanisms (CSM) like bilateral clearing, where card transactions can be cleared and settled between the acquiring and the issuing bank in a same day settlement service.

The following gives an overview on the integration of the clearing and settling card transactions into the SEPA payment infrastructure by using SCC:



SCC is agnostic about the fact where to get the debtor IBAN from – this is managed by the underlying card scheme or bilaterally agreed between acquiring or issuing bank in case of an underlying bilateral processing contract. As a technical solution, the debtor IBAN is either encoded on the card, is returned in an online authorization response message or the issuer bank is using a central account for debiting card transactions towards acquiring entities and is using the PAN data contained in SCC messages to debit its customer accounts.

SCC is based on SEPA Direct Debit messages including card specific supplementary data fields, which contain data like terminal information, fee amounts, additional amounts or card transaction related information needed for specific card clearing and dispute mechanism: The SCC messages differ from SDD messages only by an ISO20022 based technical XML schema extension, referred to as a container. , The SCC framework is specified and governed by the Berlin Group, a standardization initiative of main European card schemes and card processors working on the Acquirer/Issuer interface. All results of the Berlin Group are published on www.berlin-group.eu.

Bundesbank and EBA Clearing are the two ACHs in the European market offering its members the SCC service. These services are based on the Berlin Group Implementation Guidelines and XML schema definitions and could easily be re-used for processing transactions based on other card brands. Specific requirements of the girocard system are applicable only end-to-end in dispute resolution between acquiring bank (creditor bank) and debtor bank (card issuer).

3 Project Scope

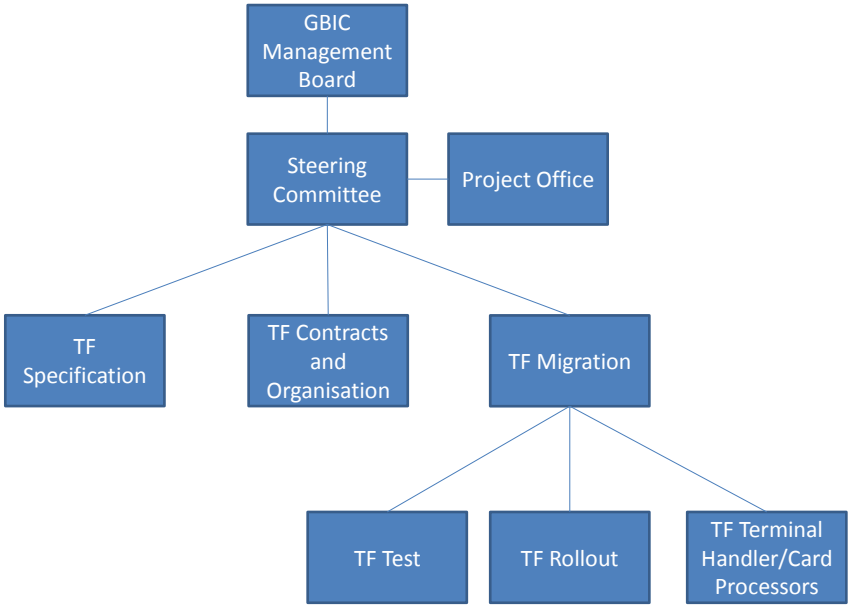
The following clearing processes have been migrated from domestic legacy formats to SCC formats. In addition interbank clearing and settlement interfaces as well as payment initiation and account management functions had to be adapted:

- girocard POS function,
- girocard ATM function,
- e-purse transaction bulks and top up clearing,
- clearing connections between banks and gateways towards global card schemes.

To coordinate all stakeholders of the SCC migration, i.e. main issuing and acquiring banks as well as Automated Clearing Houses (ACH), terminal handlers and card processors, GBIC had implemented a comprehensive project structure.

4 Project Structure and Tasks

The following picture gives an overview of the SCC implementation project structure and task forces (TF):



TF Specification

The main task was to review the Berlin Group specification and to define girocard specific field usage/values. This task force also supported the definition of Supplementary Data field by ISO20022 and the Berlin Group. A further task was the technical evaluation of ongoing change management processes during the project and building a full set of examples for all applicable scenarios of the migration project.

TF Contracts and Organisation

The task of this group was to review existing contracts of the girocard scheme and the identification of the differences towards a recognition of the SCC framework. The clearing process as such was defined as a very lean process, where mainly syntactical checks are performed and routing mechanisms are established. The contractual framework for managing SCC transactions were defined in the interbank specifications.

All liabilities are regulated by German civil law.

TF Migration

This task force has established the migration concept and migration plan. It steered the project through its different migration phases, managing technical changes and plan changes of participating institutions. Furthermore the TF Migration integrated the deliverables of below listed sub-task forces:

TF Test

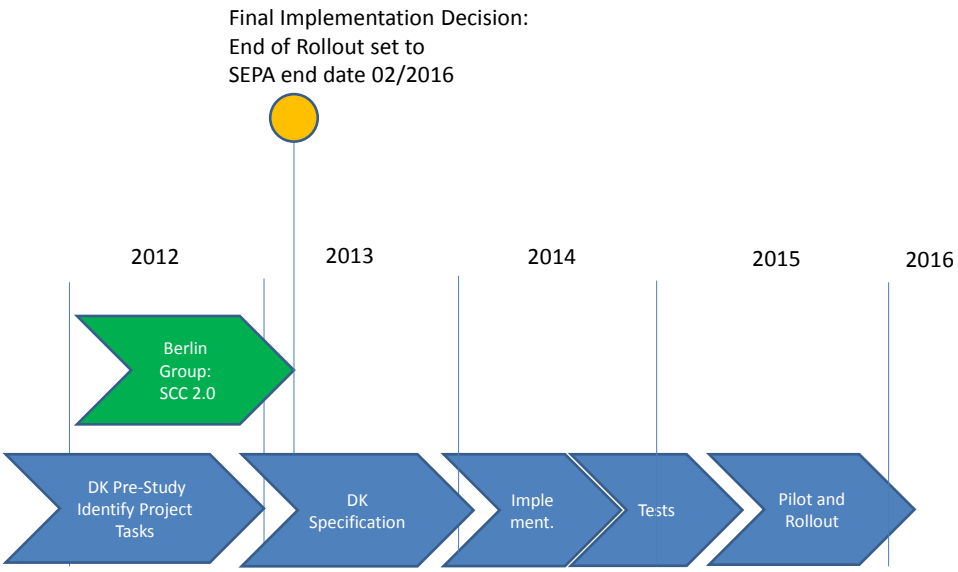
This task force evolved the test concept and was managing the end-to-end-test. Its members were test managers from banks and terminal handlers as well as members of the TF Migration. TF Test met first in an on-site workshop, followed by weekly telephone conferences and WebEx sessions. By knowing each other in person a strong relationship between the different members has been established, allowing for bilateral communication.

TF Rollout

This task force evolved the rollout concept and was managing the rollout. Its members were rollout managers from banks and terminal handlers as well as members of the TF Migration. TF Rollout met first in an on-site workshop, followed by weekly WebEx sessions. By knowing each other in person a strong relationship between the different members has been established, allowing for bilateral communication.

5 Project Phases

The following pictures gives an overview of the project phases:



5.1 Pre-Study and Specification Phase

Berlin Group Implementation Guidelines

The first release of the SCC Specifications (SCC 1.0) was published by the Berlin Group in 2009, thus before the DK project started. In the pre-study phase of the German implementation project, the German banking community has worked in a joint effort together with the Berlin Group on the Release 2.0 of SCC. The aim was to design the SCC specification in such a way that a maximum of synergies to the SDD implementation is reached. Also the SDD/SCT XML schema definitions of the cooperating ACHs were taken into account for the SCC schema definition.

The most important item, which has been discussed, was the introduction of supplementary data fields to cater for card specific information. Technically these fields are separated from the payment part of the SCC message. This supplementary data encapsulates the card data and leaves the payment part of the message identical to the SDD formats.

The supplementary data fields have a black box character for all intermediary CSM – the CSM needs no information about the card scheme dependent rules on card transaction data. The supplementary data field information is only relevant for end-to-end processes like cardholder account statements or for dispute processes.

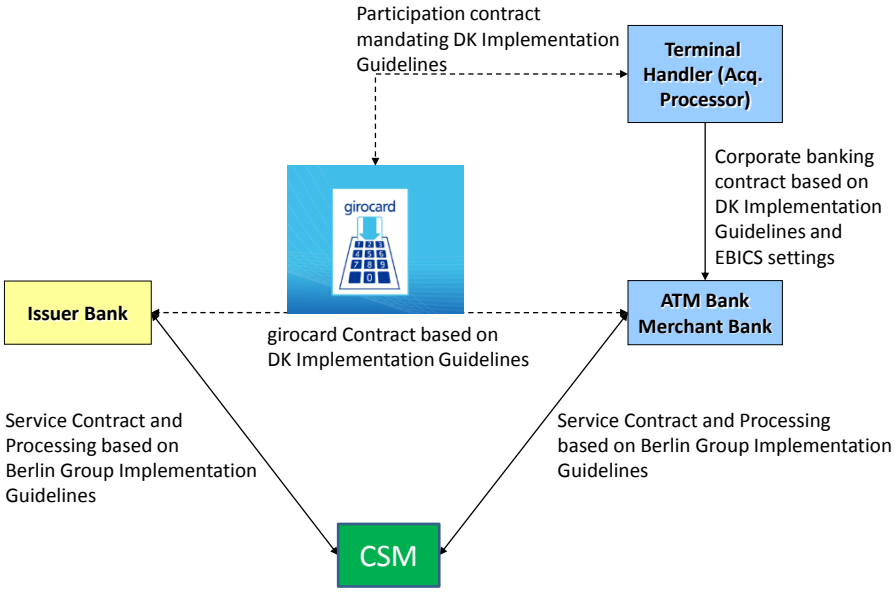
Pre-Study and DK Implementation Guidelines

The project decision was formally taken within DK in 2013, after having started pre-studies in 2011. A major project milestone was set by Bundesbank by announcing the decommissioning of the legacy interbank clearing system EMZ on 1st of February 2016 for direct debit based merchant payment transactions as well as for girocard transactions.

In a next phase, DK has defined SCC-specific Implementation Guidelines for the business processes to be implemented in SCC. These guidelines are technically complementing the Berlin Group specifications and define a functional subset and specific scheme requirements on how to set specific ID fields or codes within the message. The main reasons to publish girocard specific SCC Implementation Guidelines were the higher detail level as well as contractual and governance issues of DK: The DK corporate to bank as well as interbank specifications for SCC services are technical addendums to the girocard contracts. Additionally, SCC specific functions were added to the open file transfer protocol EBICS, which is used at the corporate to bank as well as Bank to ACH interface.

Nevertheless, it is important to stress again the fact that the central institutions like ACHs based their implementation solely on the Berlin Group Implementation Guidelines. So, the central services of the implementation could be directly re-used to support the clearing and settlement of transactions based on other card brands.

The following picture outlines the contractual relationship.



5.2 Implementation Phase

IT Systems Adaptation

The following IT systems had to be adapted for SCC within banks:

- Clearing systems incl. ACH
  - New SEPA clearing services had to be introduced. The major delta to existing SEPA services was the D-0 settlement and the transport of the supplementary data.
- Backoffice systems banks
  - Dispute and internal information systems had to be adapted for new formats, codes and processes.
- Authorisation process
  - The disposition interfaces from card authorization systems towards the account managment systems had to be migrated, since the legacy interfaces referred data elements from the legacy format.
- Customer interface
  - The account statements had to be adapted to SEPA-style for cards. Main issue was the presentation of the Ultimate Creditor information (card acceptor information) instead of the Creditor information (acquiring information).
  - This difference not only had to be adapted by web banking functions or account statements but also for e-banking client software.
- Corporate e-banking software
  - Corporates which initiate payments had to migrate there e-banking clients, banks the corresponding e-banking server software.

No change was needed for Payment authorisation. These processes were re-used from the SEPA processes.

Synergies to SEPA Payments

The banks estimate that the synergies, which can be taken from the implementation of the SDD service are between 60% and 80%, dependent on the role of the corresponding bank, cp. Section 6.

Duration of the implementation

The banks needed 5 to 6 months for the implementation of the SCC service, including internal technical details and design definitions.

5.3 Testing Phase

Functional Testing and Certification

Terminal Handlers, who initiate the payments within the girocard scheme, had to undergo functional testing within an approval process of the girocard scheme. Further, terminal

handler and other SCC payment initiating institutions have been certified by the corresponding merchant banks.

All banks have been certified by the ACHs testing the clearing process between the banks and the ACH.

End-to-End-Tests

In addition to functional and certification tests, a thorough end-to-end test between all major payment initiating and payment receiving institutions has been performed. This test was processed in the dedicated SEPA test infrastructure of the ACHs.

To guarantee a flawless end-to-end-test, a test concept was written, which organized the delivery and distribution of test cards, matching test accounts, the test clearing infrastructure and all test management issues.

The end-to-end test resulted also in testing the connection of all corresponding clearing and account systems. The duration of the end-to-end-test was 3 to 4 months.

5.4 Pilot and Rollout Phase

The final rollout was preceded by a 6 weeks piloting phase with 1.000 to 10.000 transactions per day. The rollout, which followed took 8 months, resulting in a daily volume of approximately 10 million transactions at the end of the migration. The rollout was managed in different phases, where major payment initiating institutions followed rollout windows. The aim was to reach a steady growth of the SCC volumes.

6 Project Evaluation

Project Success and Benefits

Major benefits of the SCC implementation project are:

- European reach of the girocard system by the SCC service support through EBA Clearing and Bundesbank.
  The hurdles of merchant banks outside of Germany to offer girocard acceptance services to merchants are much lower than before when using domestic clearing formats. Thus the acceptance of girocard by merchant outside of the German market will be more attractive.
- Establishment of a European clearing and settlement service for card transactions, that is open for different card schemes in Europe.
  The merchant banks and issuing banks, who have implemented SCC for the girocard scheme are able to re-use this infrastructure to offer clearing services for card transactions of other card schemes in future. This might enable banks to re-use for other card schemes a big part of the value chain, which has been implemented already.
- Uniform SEPA payment infrastructure for all payment instruments within the banks and ACHs.

By integrating the clearing and settlement of card transactions into the SEPA infrastructure, banks and ACHs can easily re-use all payment related technical services for cards. The maintaining and further development of these services profit from high synergies between the different payment instruments.

- the migration on modern IT architecture within the banks, replacing the legacy clearing systems for domestic clearing processes and
- a very low average return rate of SCC transactions in production of less than 0,0001% accomplished by the high project quality assurance level.

The project involved around 40 payment initiation institutions and 20 payment receiving institutions, where the latter were banks or computing centers of banks. This lead to a direct representation of more than 95% of the German market in the project.

The project was conducted in time across all stakeholders.

Success Factors

The major success factors of the project were:

- Central coordination:
  The Project Office was responsible for the coordination of all task forces, secretariat of the Steering Committee and general contact point for all issues and questions of project participants.
- Project communication
  Task force kick-offs and main workshop sessions were held as on-site meetings. Knowing each other in person a strong relationship between the different members has been established, allowing for bilateral communication. The direct communication within and between task forces were crucial to guarantee the project success.
- Setup of end-to-end test infrastructure:
  A thorough end-to-end test with all major participants during the testing phase lead to a piloting phase with only minor obstacles. Furthermore, the availability of the test infrastructure during rollout for testing institutions with late development and for re-tests enabled an agile project management.
- Quality gate and active service management by ACHs
  The ACHs managed the onboarding process of banks to their central SCC service. Further the ACHs installed a quality gate by certifying connecting banks with bilateral functional tests. This ensured flawless booking processes during the rollout.
- Steering volumes by a coordinated rollout:
  A 6 weeks pilot and slow volumes during the first months of the rollout allowed change implementations after first lessons learned. Changes within banks were needed for cardholder account statements and dispute process management.
- Cooperation of card and payment business lines within the banks
  The implementation of SCC required card and payment knowhow within the banks. The coordination of these two different business lines was coordinated internally.

All these success factors finally enabled the bank to face the challenge of migrating business processes with high STP rates in a short period from legacy systems into a modern IT system infrastructure.

Synergy Factors

The following synergy factors to other SEPA payment instruments have been identified by participating banks.

- Format and payment instrument synergies
  The automated SDD transaction lifecycle can be leveraged: A full set of ISO messages is available for transaction status report, R-transactions as well as account information.
- Process control implemented for the introduction of SDD can be re-used
  The process flow is analogous to SDD. For example, the high overlap of SDD Return Reason Codes and corresponding interfaces to dispute management yields high synergies. Further authorization processes for payment initiation are re-used.
- Bank internal system synergies.
  SDD investigations- and input GUI could be replicated for SCC, a separate tab for card container details had to be implemented. The SDD validation logic for IBAN, BIC etc. could be fully re-used for SCC.
- Entry channels, routing and clearing connections that has been implemented for SDD were fully re-used by only being enhanced with an additional XML schema definition for SCC.

7 Contact

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