



## **Joint Initiative pan-European Mobile P2P Interoperability**

### **Mobile P2P Interoperability Framework**

#### **General Introduction**

Version 1.1

20/03/2020

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\* The 'Joint Initiative pan-European Mobile P2P Interoperability' brings together participants of the Berlin Group, infrastructure providers and participants from principle Mobile P2P scheme services in Europe. In January 2016, the participants to the Joint Initiative have published a Technical Feasibility Study on pan-European Mobile P2P Interoperability which can be downloaded from the Berlin Group website (<http://www.berlin-group.org/mobile-p2p-interoperability>).

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## 1 Introduction

### Background

A Mobile P2P Scheme is a solution where participants can transfer funds mostly in real-time or near real-time using their smart phones and mobile phone data as account proxy information. The underlying accounts can be bank accounts or any other form of accounts for electronic money. The Mobile P2P Scheme consists of a bundle of contracts and operational and technical rules as well as further added value services like payment requests or collecting funds as a group of members.

The Mobile P2P Scheme can be a scheme with a dedicated mobile app and dedicated contracts or can just be a payment function within a bank's generic mobile banking app. The contracts cited above are then part of the general customer contract with the bank. For the sake of simplicity, all these solutions are named as 'Mobile P2P Scheme' in this document and in the Framework documents referenced in section 4.

In Europe many of these solutions have been developed with the rise of smart phone usage. These solutions are today not interoperable, i.e. a participant of Scheme A cannot interact with a participant of Scheme B.

### Mobile P2P Interoperability Framework

The Mobile P2P Interoperability Framework as defined by a Joint Initiative of the Berlin Group, infrastructure providers and participants from principle European Mobile P2P scheme services (hereafter: Joint Initiative) is a Framework for the European area for connecting Mobile P2P Schemes. This Framework is independent of the corresponding Mobile P2P Schemes and enables consumers to perform Mobile P2P transactions between each other in a situation where the consumers are participants of different Mobile P2P Schemes.

This Framework relies on the SCT INST infrastructure which is expected to be piloted in early 2018. Clearing accounts of the Mobile P2P Schemes should at least be reachable for SCT INST – the Framework does not require the participants accounts to be reachable.

There is also a variant using the SCT infrastructure for the period of migration of the banking industry towards SCT INST. If SCT is used, additional business agreements between the corresponding Mobile P2P Schemes might be needed dealing with the topic of a payment guarantee for the end-of-day batch processing after having initiated the underlying SCT payment successfully.

The Mobile P2P Interoperability Framework defines operational rules and interfaces for the Proxy Lookup Service, Clearing/Settlement of funds transfer and an optional Payment Notification on

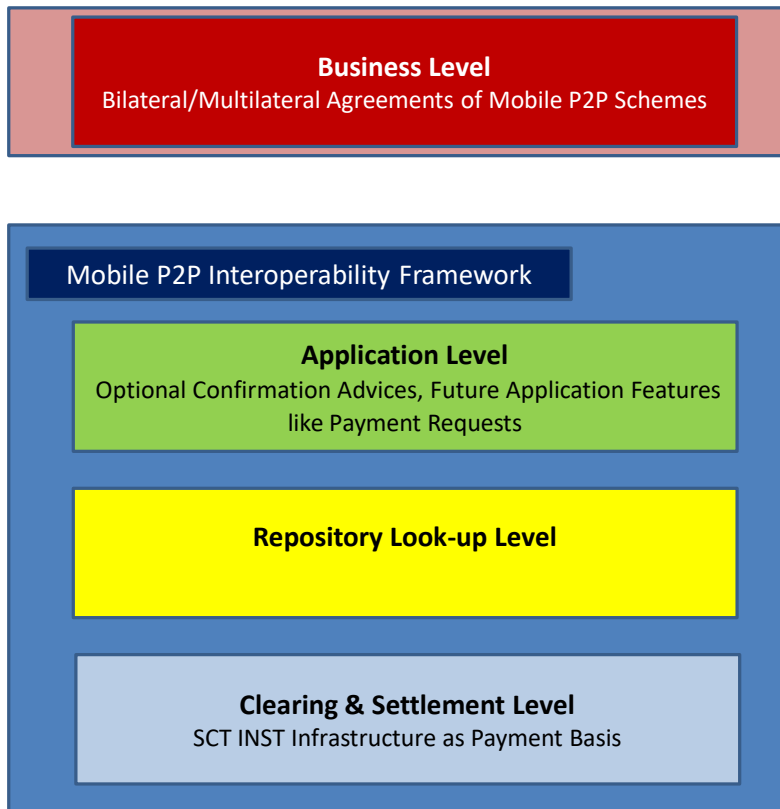


Application Level within the scenario of direct booking to the Beneficiary Account or where SCT is used on the Clearing & Settlement Level.

The Framework does not take care of contractual issues between the corresponding Mobile P2P Schemes. It is assumed that a bilateral or multilateral contract for the mutual reachability of the corresponding Mobile P2P schemes exists.

The Framework is independent of the underlying technical architecture, in analogy to the existing SEPA payment architecture. It can be used in bilateral or multilateral/distributed settings where Mobile P2P Schemes are connected directly to each other, as well as in settings with a central Proxy Look-Up Switching service in place.

The differentiation of the Mobile P2P Interoperability Framework in different levels is addressed in the following picture. Each level is represented by a different colour. These colours are used throughout the document.



## Operational Rules

The document [MP2P OR] of the Mobile P2P Interoperability Framework contains the definition of the roles within the framework, the operational rules and the abstract data model. The data model is a compilation of abstract message definitions for the repository level, clearing and settlement level and application level. Data attributes (AT-NN) are defined in the operational rules for the data model.

## Implementation Guidelines

The document [MP2P IG] of the Mobile P2P Interoperability Framework covers detailed message definitions and examples for repository level, clearing and settlement level and application level. The data attributes of the operational rules are referenced in the message definitions.

## Aim and Structure of the Document

The aim of this document is to provide an introduction to the Mobile P2P Interoperability Framework and to explain major design decisions of the Framework.

In Section 2, a summary of the supported services is given. Then the different Framework levels as well as a typical abstract data flow are described in Section 3. The document then ends with a list of reference documents in Section 4.

## Document History

Version	Change/Note	Approved
0.99	Market consultation version	03/02/2017
1.0	Results of market consultation acknowledged	09/06/2017
1.01	Adjusted to Creative Commons license 'BY ND'	31/08/2018
1.1	Adjusted to version 1.1 of the Framework, resulting from EPC 2019 change requests.	20/03/2020



## 2 Mobile P2P Inter-Scheme Services

The following services are supported in the Mobile P2P Interoperability Framework.

Mobile P2P Service	Support
<p><b>Mobile P2P Payment</b></p> <p>By this person-to-person service, customers can credit other customers by using a smartphone to initiate the payment. Hereby, a mobile number or other aliases are used as a proxy for the account information. The beneficiary is notified about the entry of the money in real-time, and the funds are also normally available in real-time, while the underlying settlement between the debtor bank and creditor bank can be performed later.</p>	<p>Within the Mobile P2P Interoperability Framework, this function is divided into a Repository Look-Up and an SCT INST transaction. An additional solution, using SCT formats before SCT INST is live is defined for an early adoption in Pre-SCT INST period.</p> <p>As aliases, mobile phone numbers (MSISDN) and email addresses are supported since version 1.1 of the framework.</p>
<p><b>Enhanced Remittance Information Transport</b></p> <p>By this enhancement of the Mobile P2P Payment, the sender of the money is enabled to send media data to the beneficiary within the Mobile P2P transaction.</p>	<p>This function is supported by adding a field in the Notification Advice which is communicated directly between the two Mobile P2P App servers. This additional field transports multimedia data in base64 encoding. The media type is additionally defined. This type could be pdf, jpeg etc. This function may only be used when agreed bilaterally between the Originator and the Receiver MP2P Scheme.</p>
<p><b>Reachability Check</b></p> <p>This service is just checking whether an alias is contained within an addressed Repository. This service might be used, where an Mobile P2P scheme wants to tell its user, which elements of the user's contact list e.g. in its mobile phone is reachable through the Mobile P2P App.</p>	<p>This is realised by a simplified version of the Repository Look-Up service.</p> <p>This function may only be used, when agreed bilaterally between the Originator and the Receiver MP2P Scheme.</p>

The following services, typically supported by Mobile P2P Schemes are not yet supported within the Interoperability Framework:

- **Payment Request:** Send text or other information together with an amount and ask the other side to pay it, this payment is then to be confirmed or to be rejected by the receiver,





- Collection of funds of a group of members, and
- Specific Mobile P2B solutions.

Future work:

- Some of the above services will be addressed by the Joint Initiative as soon as the first version of the Framework is published.
- It has been decided to integrate the Repository Level as an extended service into the PSD2 XS2A Framework which has been defined by the Berlin Group NextGenPSD2 Taskforce. This work is planned to be done later in 2020.



### 3 The Framework Levels

The Framework distinguishes three different levels:

- Application Level

This level defines an optional Payment Notification about a successful Mobile P2P transaction between the corresponding Mobile P2P Schemes. This advice notification is helpful in a setting, where the transaction amount is directly cleared and settled between the originator and beneficiary account or where SCT is used as the underlying clearing and settlement instrument.

This level will be functionally extended as soon as further interoperable services will be defined within this Framework, e.g. a Payment Request.

For the time being, this level is defined in JSON as well as in XML as a fall-back.

- Repository Look-Up Level

This level is defining the technical Look-Up Request and Look-Up Response between the databases of Mobile P2P Schemes. The Mobile P2P Scheme which is responding to Repository Look-Up Requests can steer the other levels through the usage of optional fields of this response.

For the time being, this level is defined in JSON as well as in XML as a fall-back..

- Clearing & Settlement Level

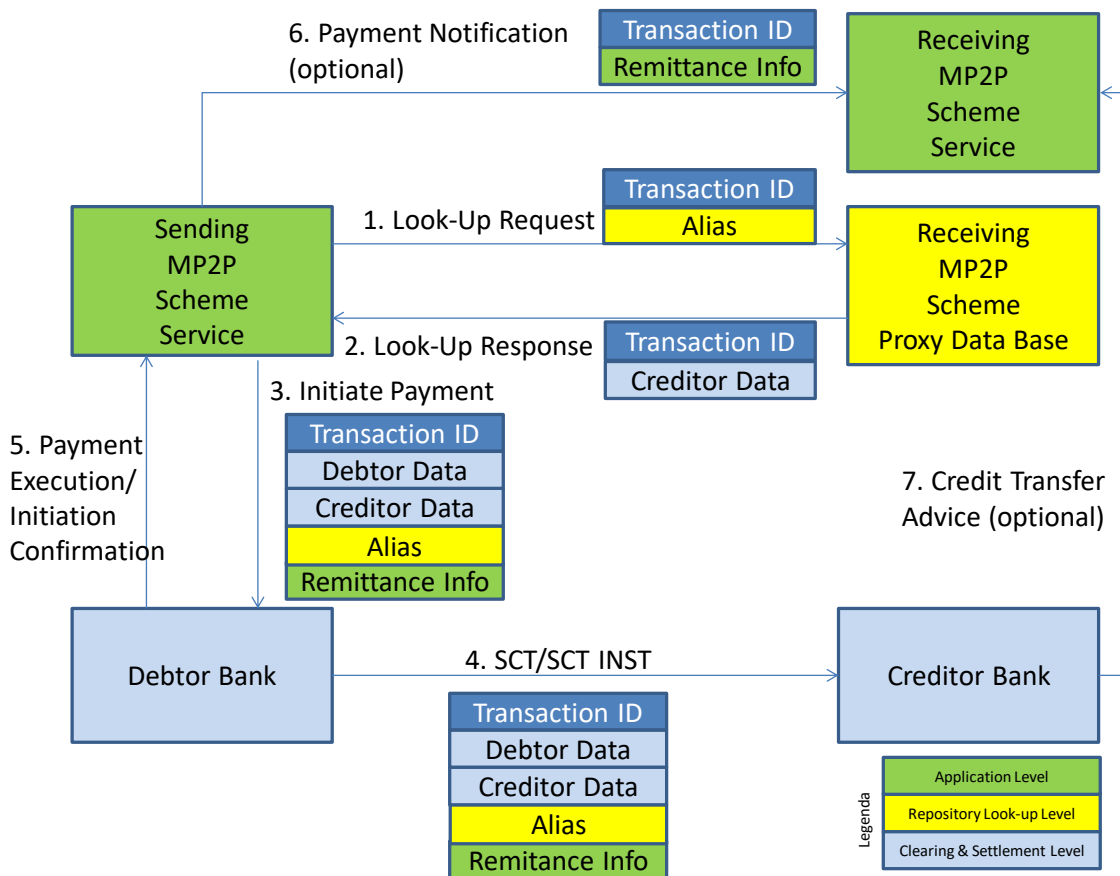
Within this level, the clearing and settlement procedures to be used for Mobile P2P transactions within the Berlin Group Interoperability Framework are defined. The SCT INST scheme is the preferred solution. A clearing and settlement method to use SCT is defined in addition, due to the fact that the full SCT INST infrastructure might not be available early enough for the use of this Framework.

For clearing and settlement different SEPA clearing models are supported. The transaction amount can be settled via clearing accounts of the corresponding Mobile P2P Schemes or directly via an account of the originator or the beneficiary respectively. This setting might be different depending on the organisational and technical requirements of the related Mobile P2P Schemes, e.g. the Mobile P2P Schemes being banks serving customers with direct access to the SEPA infrastructure or being electronic money institutions serving customers with internal accounts.



The Framework intends to optimise the end-to-end processing during the whole transaction life cycle. For this reason, the three levels are not fully independent. The technical binding of messages used within the levels for one Mobile P2P transaction is the notion of a unique transaction identification. This identification is re-used in all levels. It is provided by the Mobile P2P Scheme initiating the transaction.

The following picture gives an overview of a typical data flow with the main data elements:



The transaction steps 1., 2., 4. and 6. are in the interoperability domain.

In the following, reasons for the chosen data model are clarified for each process step.

### Step 1: Look-Up Request

The Look-Up Request contains more data than just an alias (more than e.g. an MSISDN). Additional data are a transaction identification as a unique transaction life cycle identification for



all reconciliation processes within the receiving Mobile P2P Scheme or for dispute processes. A further major data element is the (optional) transaction amount: many Mobile P2P Schemes have restrictions on how much money a consumer may, e.g. daily, receive by this function due to a separation from the usage of these Mobile P2P Schemes in a merchant context. If these limits are detected early in the process, dispute processes might be prevented especially in a context, where SCT is used as clearing and settlement instrument.

### **Step 2: Look-Up Response**

By providing the creditor data, the receiving Mobile P2P Scheme can decide whether to give away the name of the beneficiary, respecting data protection laws. The response will also contain a (optional) priority indicator set by the customer and an indicator, whether a payment notification should be used on application level, cf. Step 6.

### **Step 3: Payment Initiation**

The sending scheme is initiating the payment to the creditor as identified by the Proxy Look-Up Service. The transaction identification is put into the End-to-End Identification of the related SEPA payment initiation message. The alias (MSISDN or email address for now) is added as a mandatory field when using SCT INST as clearing and settlement method, such that this transaction can be mapped by the receiving Mobile P2P Scheme to the correct mobile app member. Additionally it might be helpful to add the alias (MSISDN or email address for now) generally for enhancing dispute processes.

### **Step 4: Interbank Payment**

The payment initiation is followed by the interbank clearing and settlement of this message without any specific requirement. When using SCT INST, the creditor bank might have specific risk management requirements on transactions resulting from Mobile P2P schemes.

### **Step 5: Payment Execution/Initiation Response**

The debtor bank confirms the execution (SCT INST) or the initiation (SCT) of the payment towards the sending Mobile P2P Scheme through its standard payment initiation interfaces.

### **Step 6: Payment Notification (optional)**

If requested by the receiving Mobile P2P Scheme, the sending Mobile P2P Scheme sends a Payment Notification to the receiving Mobile P2P Application Service. This is recommended e.g. in a context, where SCT is used as a clearing and settlement instrument, or where the funds are cleared directly between the originator and beneficiary account. By this step, the receiving Mobile P2P Scheme is e.g. able to show the result instantly in its mobile app to the beneficiary.



### Step 7: Credit Transfer Advice (optional)

The creditor bank can inform the receiving Mobile P2P Scheme directly or indirectly by account statements or a push service about the incoming credit transfer. This is dependent on the business and organisational setting of the receiving Mobile P2P Scheme.

## 4 The Framework Documents

The Berlin Group Mobile P2P Interoperability Framework consists of several documents:

[MP2P FS] Technical Feasibility Study on pan-European Mobile P2P Interoperability, Joint Initiative pan-European Mobile P2P Interoperability, Version 1.0, 15 January 2016

This document gives a background on the Framework and business and functional requirements. This document is published on <http://www.berlin-group.org/mobile-p2p-interoperability>.

[MP2P OR] Mobile P2P Interoperability Framework, Operational Rules, Joint Initiative pan-European Mobile P2P Interoperability, Version 1.1, 20 March 2020

This document contains a service description, the roles of the actors, an abstract data model for the messages to be used and a process description.

[MP2P IG] Mobile P2P Interoperability Framework, Implementation Guidelines, Joint Initiative pan-European Mobile P2P Interoperability, Version 1.1, 20 March 2020

This document contains detailed interface specifications of all related levels.

