

Request-to-Pay

Specifications for a standardisation framework

RTP MSG 005-19 / Version 1.0 / Date issued: 4 November 2019



RTP: Specifications for a standardisation framework

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1 Executive summary

In the context of the development of the digital economy the landscape of payment solutions for retail commerce, P2P and E-invoicing has been rapidly evolving over the last years. In addition to well established payment instruments such as card payments and direct debit, account-based credit transfer is more and more used and the launch and current development of the SEPA Instant Credit Transfer (SCT Inst) scheme opens new opportunities. Customers will have more choices for payment and merchants can benefit from a larger portfolio of methods for collecting payments, proposed by their providers.

Enabling end-to-end solutions requires a way in which corporate “payees” in retail commerce or e-invoicing billers can inform the payers (buyers, end-users) about the elements of a commercial transaction to initiate and reconcile the payment more easily. Requesting a payment in exchange of goods or service will become a foregoing part of a payment transaction at the points of interaction (POI). Also, Person-to-Person (P2P) solutions should propose a way for individual “Payees” to requests payments from individual “Payers” . This function is called “Request-to-Pay”. Along with payment initiation by the Payer, the execution of the payment by the PSPs and reconciliation of transactions at the merchant (Payee) side, Request-to-Pay would complete the business processes for various use cases.

The RTP function has already been identified as the central element for the specific needs in the context of Electronic Invoice Presentment and Payment (EIPP) and necessary documentation has been produced allowing the use of revised standardised ISO 20022 messages for RTP (pain.013 and pain.014) in that context. This work has been performed by a Multi-Stakeholder Group (EIPP MSG) at the invitation of the Euro Retail Payment Board (ERP) and under the coordination of the EPC, throughout 2018. In parallel the EPC has observed that initiatives have been launched making possible the use of the RTP in a broader context, for any means of claiming a payment by a Creditor/Beneficiary/Payee from a Debtor/Originator/Payer, even beyond e-invoicing purposes. As reflected in the statement published after the ERP meeting of November 2018, the EPC was invited to coordinate the necessary work to analyse and prepare the concrete and rapid exploitation of the RTP functionality from a broader perspective. To that end, the EPC Request-to-Pay Multi-Stakeholder Group (RTP MSG) was created and worked from March to November 2019 to deliver an analysis and propose next steps (the list of participants to the RTP MSG can be found in the annex 11.5).



This document is the result of the MSG work, taking the form of “specifications for a standardisation framework”, as a guidance document supporting further work on an RTP scheme. The purpose of the document, definition of concepts, roles and entities, and processing models are presented in the introductory part. It also explains the place of RTP within the larger transactional flow ending with the payment.

The approach chosen by the MSG for the analysis is to start from collecting use case examples from the real world and classify them in a “taxonomy” to find a set of generic criteria and functions. Then, relevant criteria are identified, and the use cases are checked with a reversed view to make sure they are covered by these relevant criteria. Chapter 3 contains this part of the analysis. Two essential sub-sections in this chapter present the functions retained by the MSG as basic RTP functions and functions for further enhancement of an RTP scheme.

Chapters 4 and 5 elaborate deeper on the analysis describing the actors and information flow, detailing other requests associated with the RTP and needed for the basic functions, and introducing a possible standardisation framework. The conclusion of the MSG on this part is that the ISO 20022 is the most appropriate standardisation framework for RTP, and the existing pair of messages from ISO 20022 – pain.013 and pain.014 – already adopted by the EIPP eco-system should be the basis for developing the pan-European RTP scheme.

In relation with standards, Chapter 5 sets out the options for developing the RTP framework into a scheme and possible links with the existing SEPA payment schemes. It also explains why the MSG considers that a separate scheme is more suitable than including the RTP in the existing payment schemes SCT and SCT Inst. Whilst for interoperability purposes, the MSG considers the ISO 20022 standard most adapted and recommends the development of a new RTP scheme, it also acknowledges that RTP elements can be directly exchanged between Payees and Payers. This can be done through various technologies for proximity or remote environments. This document lists some of these technologies in Chapter 6.

Interoperability is essential for the achievement of a pan-European RTP eco-system. Chapter 7 focuses on the conditions needed for accepting a broad variety of entities and models as parts of this eco-system. It highlights the key challenges that should be addressed during the development of the RTP scheme: first, the selection of a unique standard; second, the guarantee that all participants are technically reachable while allowing multiple identification schemes; and third, the selection of a minimum set of basic mandatory functions that should be implemented in a first stage. Once included in the RTP framework, the solutions to these challenges should be supported by all participants, and specific measures are needed to ensure interoperability on additional options.

Security related aspects are not in the direct scope of the RTP MSG work and therefore Chapter 8 provides references to these aspects as these have been addressed by other initiatives of the EPC with close links to the RTP. It also points out that a thorough Risk Assessment needs to be made in the course of the RTP scheme development. Detailed operational guidelines are not provided in this document, but some indications on aspects that should be addressed are provided in Chapter 9.

The conclusions and recommendations of the RTP MSG are presented in the chapter 10. Based on the analysis done, the RTP MSG recommends the following next steps:

- Creation of an RTP scheme, separate from the SEPA payment schemes, covering basic RTP functions. The scheme should be elaborated on the basis of a 4-corner model, also



supporting other models and various types of providers if trust and interoperability conditions are fulfilled.

- Assessment of the need for change requests applicable to the payment schemes supporting the RTP scheme and submit these change requests if necessary.
- Development of guidelines for interfaces between the ISO 20022 based RTP scheme and standardisation initiatives for SCT and SCT Inst initiation at the POI.



2 Introduction

2.1 Purpose of the document

This document materialises the analysis performed by the EPC Multi-Stakeholder Group on Request-to-Pay (RTP MSG) and describes the functionalities in response to the ERPB invitation to the EPC as released in November 2018¹ to work on this subject in a multi-stakeholder format. The RTP MSG, in the course of its activity agreed to present the result of its work in the form of “specifications for a standardisation framework”, and this is the format of the present document. Therefore, it aims at:

- Defining the Request-to-Pay (RTP) concept, process and actors
- Providing examples of RTP use cases and a taxonomy of these use cases
- Providing a foundation for elaborating a first release of an RTP scheme, including elements for basic RTP functions, actors and information flows, eligible standards, interoperability and security guidelines

It is not as such, part of a “rulebook”, or scheme documentation, but aims to be the principal guidance document supporting further work on the way forward for an RTP scheme associated to the SEPA payment schemes.

2.2 Definition

In relation to electronic payments, the concept of Request-to-Pay (RTP) can be defined as the set of operating rules and technical elements (including messages) that allow a Payee (or creditor) to claim an amount of money from a Payer (debtor) for a specific transaction. Throughout this document, it is accepted that the payment instruments that RTP precedes are based on credit transfer.

The RTP is not a payment means or a payment instrument, but a new way to request a payment initiation.

From the transmission perspective, the RTP is channel-agnostic and can be transmitted from the Payee to the Payer, for instance through the channel used for payment transactions, including PSPs and Clearing and Settlement Mechanisms (CSMs), or through other channels composed of other types of providers. In addition, the Payer can be directly informed about the RTP initiation by the Payee through various environments such as proximity technologies, messaging applications, specialised APIs, etc.

2.3 RTP processes and relevant roles and entities for RTP

The RTP should be considered as a part of an End-to-End user payment experience. For example, when purchasing goods and services, regardless the variety and complexity of commercial processes involving purchases, several basic components can be distinguished:

- Preparatory stage establishing the underlying transaction for which a payment is due. For example, this includes

¹ [ERP/2019/013 statement after the meeting of 28 November 2018](#)



- selecting goods in physical shops for physical checkout, browsing merchant catalogues in e-commerce websites for ordering and online checkout, or selection of items or options in mobile application for m-commerce
- Signing an agreement that will result in a (recurrent) payment at a later stage (insurance, commodity services, rent...)
- calculating prices including summing up of unit prices by quantities, application of reductions, taxes and other price related rules
- etc.
- Creation and presentation of the Request-to-Pay (RTP). Currently the RTP can take various forms and can be presented in various ways, such as:
 - In physical stores, as a data flow sent by the merchant (Payee) device (e.g. payment terminal) to the consumer (Payer) device (e.g. mobile phone) using proximity technologies such as reading QR-codes, BLE or NFC
 - In e-commerce websites presentation of the payment related data in a check-out webpage
 - In e-invoicing (B2C and B2B), usually the RTP is linked to an e-invoice for later payment
 - In P2P, it can be sent from the Payee mobile device to the Payer mobile device using proximity technologies or messaging applications
- Acceptation or refusal of the RTP. The customer (Payer) can accept the RTP – and this acceptance can be followed by an immediate or future payment - or refuse it and optionally specify a reason for refusal.
- Payment process, starting with the selection of the payment instrument, followed by the execution of the payment after customer authentication whenever it's necessary. Some use cases require immediate payment, for example when used in the context of payments in physical stores or e-commerce websites.

After the payment, additional processes may take place, both for the merchant (Payee) and the customer (Payer), such as: on the Payee side, reconciliation between the RTP or e-invoice and the received payment; on the Payer side, the receipt of goods and services and optionally the proof of payment (e-receipt).

In a simplified view, RTP-related process components can be illustrated as follows:

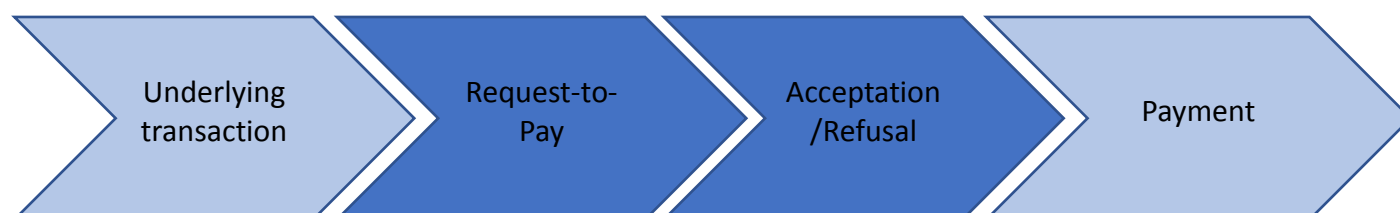


Figure 1: RTP process components and context



The scope of the RTP MSG and of its deliverables are the two stages directly related to the RTP: “Request-to-Pay” and “Acceptation/Refusal”.

The possibilities of using the RTP from a broader perspective, in any retail or B2B use cases requiring an electronic payment, assume that a broad range of actors may be involved. These actors (entities such as companies, individuals, public administrations) can play one or a set of several roles in the RTP eco-systems. Regardless the payment scheme used, four types of roles can be identified:

- *Payee*. It is the initiator of an RTP process and the beneficiary of the funds transferred in the resulting payment flow. Depending on the business domain we are referring to, this role can be identified as the Beneficiary when it comes up to the payment processing or the Creditor from a financial perspective.
- *Payer*. It represents the party receiving the goods and services to whom the RTP is addressed and the originator of the funds transferred in the resulting payment flow. In payment processing this role is usually identified with the Originator of a payment, which can be also defined as the Debtor.
- *Payee’s RTP Service Provider*. It is usually represented by a PSP but encompassing the end-to-end commerce processes, other entities can assume this role. Therefore, the Payee’s RTP Service Providers can be:
 - PSPs*
 - E-invoicing Service Providers
 - E-commerce Service providers
 - MSCT service providers (entities providing services enabling the use of Mobile devices to receive payments)
- *Payer’s RTP Service Provider*. It is usually represented by a PSP but other entities can assume this role. Therefore, the Payer’s RTP Service Providers can be:
 - PSPs*
 - E-invoicing Service Providers
 - MSCT service providers (entities providing services enabling the use of Mobile devices to initiate payments)

(*) Even though multiple types of providers can process RTPs, only PSPs can execute functions related to payment, such as initiation or execution of payment instructions through inter-PSP networks.

2.4 RTP processing models

Having taken into account the market practices and established models for electronic payments and e-invoicing eco-systems, the following processing models can be distinguished:

- **4 corners**. In this model both Payee and Payer use their own RTP Service Provider. The Payers are reachable from any Payee through routing entities.
- **3 corners**. In this model the Payee and Payer use a common RTP Service Provider which provides a centralised routing mechanism.



- **Payee or Payer direct models.** In these models a simplified RTP is directly exchanged between the Payee and Payer. Direct models rely on direct links between the Payee and its Payer enabling the presentation of the RTP on the Payer's device.

A 4-corner model allows a broad interoperability and responds to the needs of integrated user experience and "straight-through processing" with multiple payment networks. Nevertheless, a common RTP implementation could also be available for other models as they enable further adoption of RTP features and facilitate a smooth transition to more interoperable models.

3 Use-cases

3.1 RTP use cases

This section provides examples of use cases whereby the RTP has been identified as **complementing** component. Some of these examples are in the scope of several initiatives currently undertaken by the ERP/ or the EPC.

| Use-case identifier | Description | Related use cases* |
|---|--|---|
| RTP-C2B-1: RTP at physical POI followed by an Instant payment | A retail merchant presents an RTP to a consumer for a retail commerce transaction at physical POI. The RTP is followed by an SCT Inst payment for immediate delivery of purchased goods. | MSCT use cases C2B-2 and 3 (Mobile device – Payment at POI involving merchant-presented QR-code) SEPA API Access Scheme – Illustrative Customer journey # 2b (in case of SCT Inst) |
| RTP-C2B-2: RTP at remote POI with the payment initiation notified to the merchant | An online merchant presents an RTP to a consumer for an e-commerce transaction at remote POI. The RTP is followed by an SCT or SCT Inst payment. The merchant is immediately informed by its PSP that the Payer's PSP has accepted the payment instruction and initiated the payment so that the delivery processes can start. | MSCT use cases C2B-4 and 5 (Mobile device – m-commerce – merchant application or mobile browser) |
| RTP-C2B-3: RTP at remote POI with the payment initiation and funds receipt verified | An online merchant presents an RTP to a consumer for an e-commerce transaction at remote POI. The RTP is followed by an SCT or SCT Inst payment. The merchant starts the delivery processes after checking the receipt of funds in its bank accounts. | SEPA API Access Scheme – Illustrative Customer journey #1a and #1b |
| RTP-C2B-4: RTP at remote POI with payment at a later time | An online merchant presents an RTP to a consumer for an e-commerce transaction at remote POI. The customer accepts the RTP and chooses to pay at the delivery of goods | SEPA API Access Scheme – Illustrative Customer journey #5 |



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| | and/or by multiple instalments. | |
| RTP-C2B-5: RTP with guarantee of payment | A physical or online merchant presents an RTP to a consumer. Upon acceptance, the payment by SCT is triggered, and the merchant can benefit from a guarantee of payment so that the delivery of goods or services can start immediately. | SEPA API Access Scheme – Illustrative Customer journey #1c (for e-commerce) and #2b (physical commerce with payment guarantee) |
| RTP-C2B-6: RTP for pre-authorisation with guarantee of payment | A physical or online merchant presents an RTP to a consumer with a maximum amount pre-authorised. The amount really paid may vary depending on the actual level of consumption of the goods and services purchased (“pre-authorisation” service). If the RTP is accepted, the merchant has the guarantee that the amount corresponding to the underlying transaction will be paid. | SEPA API Access Scheme – Illustrative Customer journey #4 |
| RTP-P2P-1: P2P RTP followed by a payment initiation | A person asks an amount of money to another person (“person-to-person”) by sending an RTP via an inter-provider network. The Payer consults the RTP, accepts it immediately or later, and pays by SCT or SCT Inst. The Payee can be informed that the payment has been initiated, or can immediately verify the received funds if SCT Inst was used for the payment | |
| RTP-P2P-2: proximity P2P RTP followed by a payment initiation | A person asks an amount of money to another person (“person-to-person”) by sending an RTP using proximity communication techniques. The Payer consults the RTP, accepts it immediately and pays with SCT or SCT Inst. The Payee may be informed that the payment has been initiated or can immediately verify the received funds if SCT Inst was used for the payment. | P2P-4 (Mobile device – using proximity between the 2 parties – via QR-code generated by beneficiary) |
| RTP-P2P-3: RTP for P2P via messaging applications | A person asks an amount of money to another person (“person-to-person”) by sending an RTP using messaging applications. The Payer consults the RTP, accepts immediately or later it and pays with SCT or SCT Inst. The Payee may be informed that the payment has been initiated, or can immediately verify the received funds if SCT Inst was used for the payment | P2P-3 (Mobile device – payment request message via messaging application) |
| RTP-EIPP-1: RTP for B2C E-invoicing with immediate payment | A supplier presents to a consumer an RTP encapsulating an e-invoice. The delivery of the underlying service or goods is decoupled from this presentment. The consumer pays by SCT | EIPP for B2C segment |



| | | |
|--|---|----------------------|
| | or SCT Inst at the acceptance of the RTP and the Payee can reconcile its accounting at the receipt of funds. | |
| RTP-EIPP-2: RTP for B2C E-invoicing with deferred payment | A supplier presents to a consumer an RTP encapsulating an e-invoice. The delivery of the underlying service or goods is decoupled from this presentment. The consumer accepts the RTP and pay at a later payment date. | EIPP for B2C segment |
| RTP-EIPP-3: RTP for B2C E-invoicing with payment guarantee | A supplier presents to a consumer an RTP encapsulating an e-invoice. In addition to the characteristics of other EIPP-related use cases, the supplier may benefit from a guarantee of payment. | EIPP for B2C segment |
| RTP-EIPP-4: RTP for B2B E-invoicing | A supplier presents an RTP to a business customer. The delivery of goods and services is decoupled from the presentation and the payment may be executed later by the business payer. B2B specific functions can be performed on payer side such as partial payment, forwarding the RTP to another party for financing purposes, grouping multiple RTPs in one payment, etc. The Payee can benefit from a guarantee of payment. | EIPP for B2B segment |

Table 1: list of RTP use cases

* Related use cases are mentioned to highlight the links between the RTP use cases and use cases identified by other initiatives such as: ERPB Working Group on SEPA API Access Scheme, EPC Multi-stakeholder Group on Mobile Initiated SCT and SCT Inst (MSCT), EPC Multi-stakeholder Group on E-invoice Presentment and Payment (EIPP MSG). The development of standards or rules implementing EIPP use cases (RTP-EIPP-1 to 4) is out of the scope of the present RTP standardisation framework, as it is covered in the deliverables of the EIPP MSG. Following the first release of a RTP Rulebook the alignment with the results of the EIPP MSG (standards) could be taken up.

The above RTP use cases make clear that a RTP standard or scheme needs to cover four generic payment situations, illustrated in the Annex 11.1.

3.2 Taxonomy of use cases

In order to assess if the current standards cover the above-mentioned use cases and to identify the possible needs for standards updates, this section sets out a more abstract definition of the criteria and conditions for a well-defined RTP.

The use cases involving RTP can be categorised by multiple criteria, depending on the perspectives the analysis is focused on. These criteria and the specific cases covered could be:



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- Type of transaction: physical commerce, online commerce, Person-to-Person, e-invoicing, collection of taxes or levies
- Business segment: Customer-to-Business (C2B), Business-to-Customer (B2C), Business-to-Business (B2B), Person-to-Person (P2P), Government-to-Customer (G2C), Government-to-Business (G2B).
- Payment instrument: SCT, SCT Inst
- Timing related criteria: acceptance and payment time: immediate (“now”) or deferred (“later”)
- Special conditions or functions: notification of execution of payment instruction, payment guarantee, pre-authorisation of payment, instant payment, payment in the future, payment of different amount, payment in multiple instalments, payment initiation in Payer’s PSP’s application.

Whereas the type of transaction and business segment criteria don’t fundamentally change the nature of the RTP from a standard perspective, the payment instrument and the acceptance or payment time - both timing related criteria - may impact other business processes that RTP should support.

From the timing perspective the following stages can be identified in the RTP lifecycle:

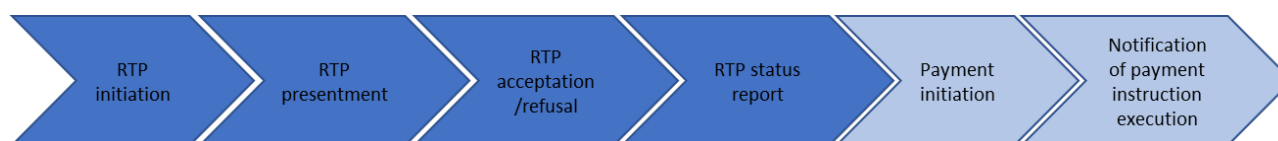


Figure 2: RTP lifecycle

The scope of the present specifications is on the first four stages of this lifecycle, which are directly related to the RTP.

- The RTP initiation is a stage specific to the Payee whereby the content of the RTP is populated in function of the transaction requirements. Mandatory elements such as the amount to be paid, transaction reference, Payer, Payer’s provider identifier should be included at this stage, etc.
- The RTP presentment can be defined as the moment when the RTP is received by the Payer. It can be assumed that once created, the RTP is immediately sent and presented as there is no business need to delay this stage, even though for technical reason there could be a certain delay until the moment when it is made available to the Payer.
- The acceptance or refusal is the moment when the Payer utilises an application (mobile application, Web browser) installed in a physical device (e.g. smartphone, PC) to accept or refuse a RTP, usually by clicking on “confirm”, “accept”, “pay” button, or “decline/refuse” button.
- The “status report” is the step where the Payer acceptance or refusal is transmitted to the Payee via a status report message. Depending on the use case the status report can be linked with the payment initiation. In case of acceptance, the payer gives to its PSP the instruction to initiate the payment. The Payer’s PSP² is committed to execute the payment

² The Payer’s PSP in this context is an ASPSP (Account Servicing PSP)



at execution date in respect of the current regulation and the obligations set by the payment schemes.

- The payment initiation, even though not part of the RTP lifecycle itself, is included to illustrate the close link it has with the RTP, as it uses payment data from the RTP and performed upon the Payer's action.
- The notification of execution of payment instruction, also not part of the RTP lifecycle itself, is included to illustrate the possibility that the Payer's PSP notifies the Payee's PSP that the payment instruction has been executed.

The immediate and deferred timing aspects ("now" or "later") can be assigned to the RTP acceptance and payment initiation with the following meanings:

- **"accept now"**: the RTP must be accepted immediately, at the presentation time. A user action of type "Accept", "Confirm", or "Pay" implies both acceptance of the RTP and initiation of the payment.
- **"accept later"**: the RTP can be accepted at a later time than the presentation time.
- **"pay now"**: the RTP must be paid by the Payer immediately, at the acceptance time. It might be possible that the payment is "embedded" in the acceptance, meaning that by accepting the RTP, the Payer automatically initiates the payment of the RTP. In that case, a user action of type "Accept", "Confirm" or "Pay" implies both acceptance of the RTP and initiation of the payment.
- **"pay later"**: the payment is initiated at a later term than the acceptance time. Depending of the use case the Payer may indicate a date and time for the payment, accept a time predefined by the Payee, define instalments, or indicate the intention to pay upon the reception of the purchased goods or services.

In addition to these time-related criteria, the RTP can include functions that fulfil other needs mostly in relation with payment features:

- **Notification to the payee of execution of payment instruction.** This function allows the Payee's PSP to be informed by the Payer's PSP through the inter-PSP network that the payment instruction has been executed. This notification helps the Payee to initiate subsequent steps of the purchase flow (e.g. preparation of delivery) before the payment is completed and the funds received in the Payee's account.
- **Guarantee of payment.** It gives to the Payee the certainty that the payment instruction associated with the acceptance of a RTP will be effective, so that the delivery of the goods and services can be safely triggered. The guarantee of payment can be implemented by reservation of funds or by other methods and may imply a pre-agreed liability. To establish a guarantee of payment, further financial arrangements might be needed between the actors, at present outside of the RTP framework.
- **Pre-authorisation of payment:** A guarantee of payment whereby a different amount from the RTP amount will be actually paid. In agreement with the Payer and for a limited period of time, a maximum amount can be indicated in the RTP and guaranteed (or "pre-authorised"), but on the basis of actual consumption of goods and services, a lower amount may be paid.
- **Instant payment (SCT Inst in SEPA).** The Payee can require that the payment associated with an RTP is executed by an SCT Inst.



- **Payment in the future.** If this option is allowed by the Payee, it enables the Payer to choose a future payment date. The payment is automatically initiated at the future payment time by the Payer's PSP without further interaction with the Payer.
- **Payment of a different amount** than the RTP amount. If the option is allowed by the Payee, the Payer can pay a different amount than the amount indicated in the RTP.
- **Payment in multiple instalments.** Combining the previous two options, it provides the Payer the option to set up a sequence of payments for a single RTP, specifying the amount and number of instalments. The payments in the sequence are automatically executed by the Payer's PSP without further interaction with the Payer.
- **Payment initiation in Payer's PSP's application.** The Payer selects its PSP and does not communicate its identity to the Payee. The Payee sends an "anonymous" RTP to the Payer's PSP which, in return, provides a secure URL for acceptance and payment in the e-banking interface.

Combined with the timing-related criteria, these options can be illustrated in the following diagram.

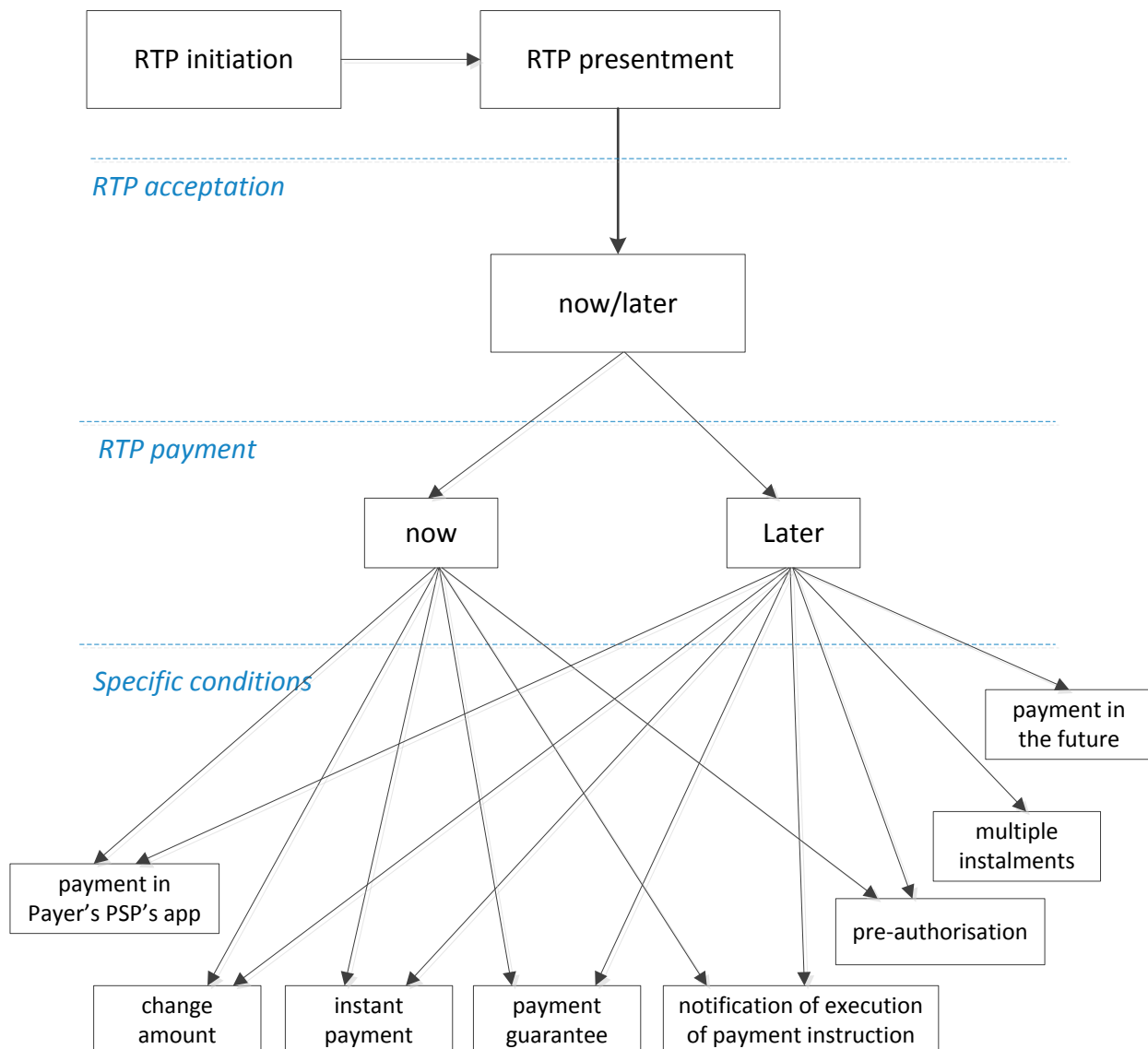


Figure 3: taxonomy of RTP use cases



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The specific conditions are not exclusive. They can be combined making possible a large variety of use cases.

Not all combinations of the specific conditions with acceptance and payment time are relevant or represent real use cases. The following table sets out possible compatibilities starting from the use cases described in the section 3.1:

| Use case | RTP acceptance | Payment initiation | Specific conditions |
|---|----------------|--------------------|--|
| RTP-C2B-1: RTP at physical POI followed by an Instant payment | Now | Now | SCT Inst required and payment by SCT Inst |
| RTP-C2B-2: RTP at remote POI with the payment instruction execution notified to the merchant | Now | Now | Notification of payment instruction execution, no payment guarantee, payment by SCT Inst or SCT |
| RTP-C2B-3: RTP at remote POI with notification of payment instruction execution and funds receipt verified | Now | Now | No payment guarantee, no notification of payment instruction execution, payment by SCT Inst or SCT |
| RTP-C2B-4: RTP at remote POI with payment at a later time | Now/Later | Later | No payment guarantee, payment by SCT Inst or SCT, multiple instalments optional |
| RTP-C2B-5: RTP with guarantee of payment | Now | Now | Payment guarantee, payment by SCT |
| RTP-C2B-6: RTP for pre-authorisation with guarantee of payment | Now/Later | Later | Payment guarantee, "pre-authorisation", payment by SCT Inst or SCT |
| RTP-P2P-1: P2P RTP (followed by a notification of payment instruction execution) | Now/Later | Now | Notification of payment instruction execution and payment by SCT, or payment by SCT Inst |
| RTP-P2P-2: proximity P2P RTP (followed by a notification of payment instruction execution) | Now | Now | Notification of payment instruction execution and payment by SCT, or payment by SCT Inst |
| RTP-P2P-3: RTP for P2P via messaging applications | Now/Later | Now | Notification of payment instruction execution, payment by SCT Inst or SCT |
| RTP-EIPP-1: RTP for B2C E-invoicing with | Now/Later | Now | No payment guarantee, no notification of payment instruction execution, payment |



| | | | |
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| immediate payment | | | by SCT Inst or SCT |
| RTP-EIPP-2: RTP for B2C E-invoicing with deferred payment | Now/Later | Later | No payment guarantee, payment by SCT Inst or SCT, Change amount |
| RTP-EIPP-3: RTP for B2C E-invoicing with payment guarantee | Now/Later | Now/Later | Payment guarantee. |
| RTP-EIPP-4: RTP for B2B E-invoicing | Later | Later | Payment guarantee, payment by SCT or SCT Inst |

Table 2: compatibility table of RTP use cases

Further analysis should focus on the capability of the existing standards for RTP messages (e.g. ISO 20022) to implement the above-mentioned use cases along with the specific conditions.

3.3 Basic RTP functions

The previous section describes a wide set of use cases resulting from market observation, while the taxonomy sets out a functional overview of the possible options that can implement those use cases.

Nevertheless, to provide guidance for developing a basic framework for an RTP scheme and helping to prioritise further developments by solution providers, a basic RTP service could cover the following RTP-related functions and options.

- Basic RTP based on ISO 20022 existing message for RTP (pain.013) covering “now” and “later” of the acceptance and payment initiation.
- RTP rejection by the Payer’s RTP provider due to technical or business issues (e.g. Account closed...), reason based on ISO 20022 existing message for RTP status report (pain.014)
- RTP acceptance/refusal by the Payer with reason based on the existing ISO 20022 message for RTP status report (pain.014)
- Set of other requests such as Cancellation, Technical Inquiry...

The above basic functions must be implemented in a way that they can be available at:

- Physical and remote POI
- P2P transactions
- EIPP

The RTP scheme must cater for adherence to specific payment situations as illustrated in the Annex 11.1.

3.4 Further evolutions of the RTP framework

Additional functions could be included in an enhanced RTP framework, after further analysis, such as:



- “Pre-authorisation” of payment
- Payment in multiple instalments
- Payment initiation in Payer’s PSP’s application
- Guarantee of payment

The guarantee of payment could bring additional value to an RTP scheme as it responds to business requirement to have certainty of payment provided that RTP has been accepted by the Payer. Currently, at the ISO 20022 standard level, the pain.013/014 messages set includes this feature as indicative information, but its use requires bilateral or multilateral additional agreements which are not part of the RTP framework. Therefore, it is recommended that the guarantee of payment is further analysed and needed actions are undertaken to ensure it can be operational in support of the RTP framework.

4 Actors and information flows

4.1 Request-to-pay in the 4-corners model

The diagram below illustrates the involved actors and the RTP flows for a generic, 4-corner ecosystem, applied to basic use cases in physical or online retail commerce, P2P, or EIPP transactions. The identity of the Payer has to be known by the Payee, so that the Payee’s provider finds the route for reaching the Payer’s provider and this provider presents the authentication request to the Payer.

For simplification, the payment flows are not presented. In a more complex scenario, the RTP service providers are different from the PSPs on Payee, Payer, or both sides.

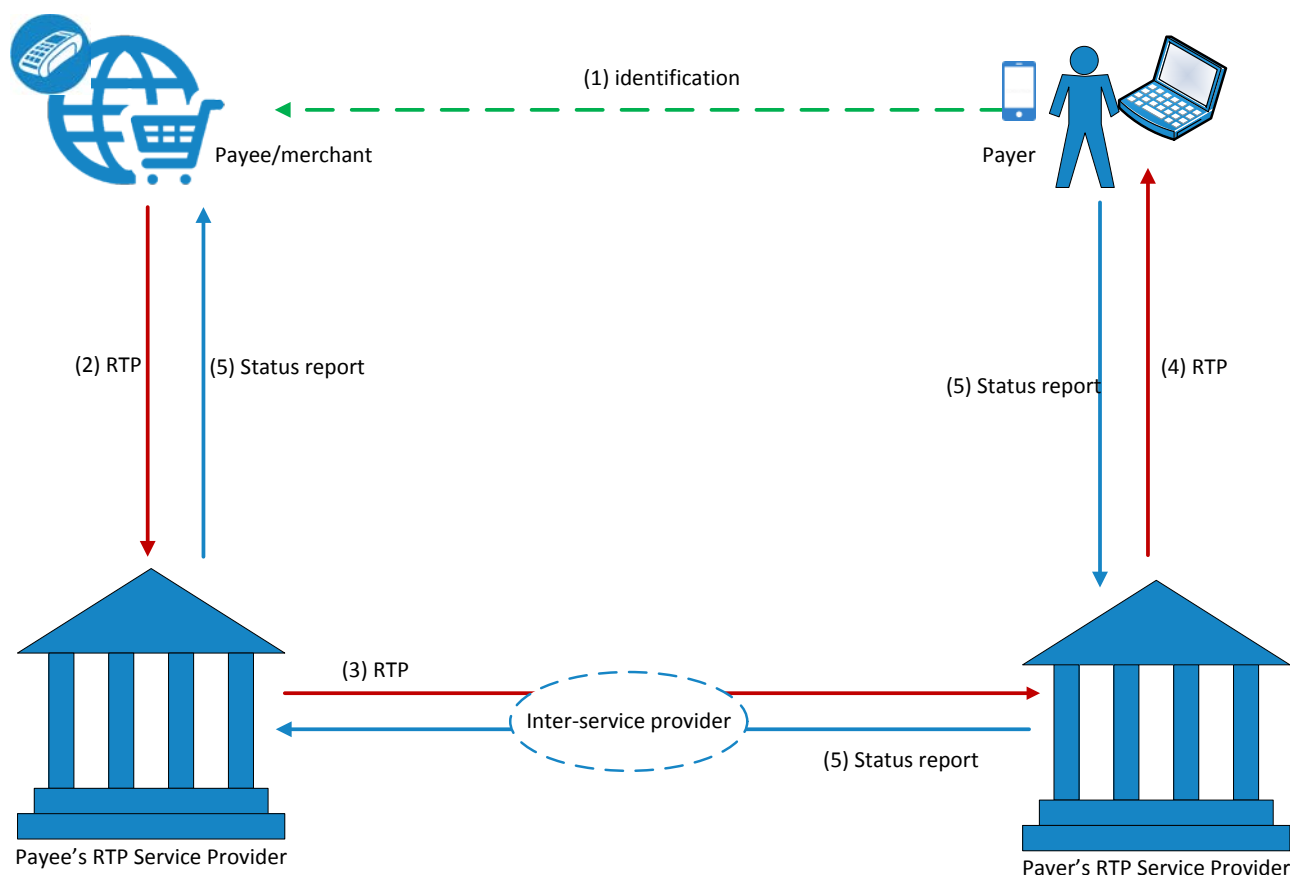


Figure 4: RTP actors and information flow in 4 corners eco-system

The steps in the above diagram can be briefly described as follows:

| | |
|--------------------------------|---|
| 1. Payer identification | A first interaction enables the communication of the Payer identifier (e.g. IBAN, Payer's provider identifier along with an identifier of the Payer within its provider, etc.) from the Payer's to Payee's device (proximity) or through online Payer's identification and authentication (online). |
| 2. RTP to Payee's provider | The RTP is sent by the Payee to its provider. It contains all RTP core data, including the Payer's identifier |
| 3. RTP in inter-provider space | The RTP is sent through the inter-provider network space |
| 4. RTP to Payer | The RTP is presented to the Payer on its device (e.g. smartphone, web browser) |
| 5. Status report | The acceptance/refusal of the RTP by the Payer is sent back to the Payee through the inter-provider environment |

Table 3: RTP for basic use cases: steps of actors and information flow



The Annex 1 (section 11.1) sets out detailed processing flows and some payment related rules that could be considered for further work on elaborating an RTP scheme.

4.2 Other requests

In addition to the core RTP request and its corresponding status report, two other requests have been identified to complete the functional and technical needs:

- ***Request for RTP Cancellation by the Payee***

In some cases, the Payee may need to cancel a previous sent RTP, for example due to an erroneous amount or error on the identification of the Payer. The Cancellation request is sent by the Payee or its Provider to the Payer's provider using the same routing path as the original RTP. Prior to sending a cancellation, the Payee's RTP Service Provider should test the validity of the request, e.g. if already paid, already refused or already cancelled. Upon receipt, the Payer's RTP Provider updates its own records to mark the corresponding RTP as cancelled.

The Payer's RTP Provider should then acknowledge the receipt and treatment of the request and inform the Payer accordingly. In cases where the cancellation cannot be executed by the Payer's RTP Provider (e.g. if already paid or refused), a responding negative answer to the cancellation shall be allowed.

- ***RTP Technical Inquiry Request***

In some cases, the Payee may need to investigate the status of a previously sent RTP, for example when there has been no status report received for a period of time exceeding a value defined by the Payee or its provider. The RTP Technical Inquiry is sent by the Payee or its provider using the same routing path as the original RTP to the Payer's provider. Upon reception, the Payer's provider searches for the corresponding RTP in its records and responds to the sender with needed information.

4.3 Exception handling

The exceptions to RTP messages can be raised by the RTP providers as response messages containing error codes and/or more detailed error reasons. These exceptions are generated either on the basis of technical and or business checks without involvement of the Payer.

Exceptions can also be raised by RTP providers as response messages to other requests, Cancellation by the Payee and Technical Inquiry.

It is not in the scope of this document to provide a list of exceptions, but further work on RTP framework or Rulebook should include them along with detailed descriptions.

5 Standards for the RTP

5.1 ISO 20022

ISO 20022, the international standard for financial messages includes in its business domain "Payments" a pair of messages designed for RTP purposes, namely the Creditor Payment Activation Request/Response messages that currently enable the Payee:

- To send an RTP message (pain.013, "Creditor Payment Activation Request") to the Payer to request the payment. According to the ISO 20022 formal definition, it *"is sent by the Creditor sending party to the Debtor receiving party, directly or through agents. It is used by a Creditor to request movement of funds from the debtor account to a creditor"*



- To receive a corresponding status report message (pain.014, “Creditor Payment Activation Request Status Report”) informing as to whether the RTP has been accepted or rejected³. According to the ISO 20022 formal definition, it “*is sent by a party to the next party in the creditor payment activation request chain. It is used to inform the latter about the positive or negative status of a creditor payment activation request...*”

Considering the current adoption of ISO 20022 standard for the SEPA Payment schemes (SCT, SCT Inst and SDD), the RTP Multi-stakeholder Group recommends the above-mentioned messages as the most suitable for a standardisation initiative at pan-European level for RTP for the following reasons:

- It fulfils the identified requirements for a broad RTP function
- It enables the harmonisation with the payment’s standards for SEPA schemes
- The providers can leverage their developments of ISO 20022 implementations in the payments and other business areas

The generic RTP flows using ISO 20022 can be illustrated as follows:

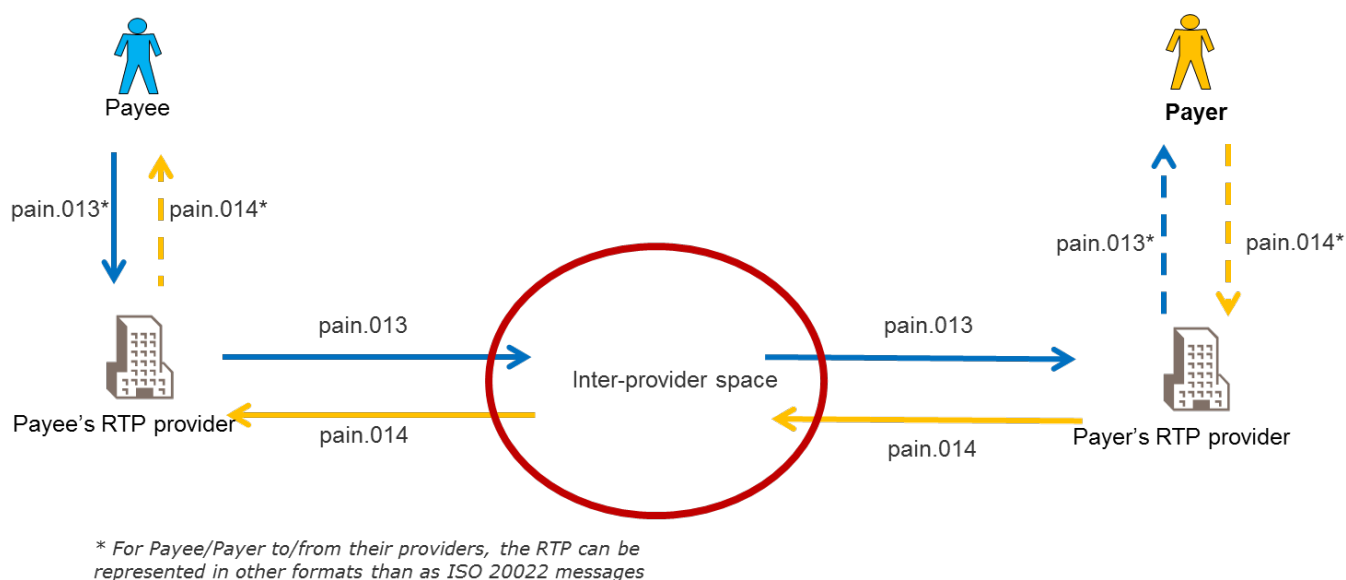


Figure 5: actors and information flow of ISO 20022 RTP

5.2 RTP and SEPA SCT and SCT Inst payment schemes

In relation with how current and future RTP service providers could articulate the RTP framework with existing SCT and SCT Inst payment schemes, two options exist:

- RTP framework as optional or mandatory part of the SCT and SCT Inst schemes. This option implies that the RTP functions are included in the SCT and SCT Inst rulebooks and the ISO 20022 messages for RTP (i.e. pain.013 and pain.014) under specific conditions are part of the SCT and SCT Inst implementation guidelines.
- As a separate scheme. This option implies that the RTP becomes a standalone scheme including its rulebook and implementation guidelines, based on the ISO 20022 messages for RTP (pain.013 and pain.014).

³ rejected (by the Payer’s RTP provider), accepted or refused (by the Payer)



After a careful analysis of the advantages and the consequences of each of these options, the RTP MSG considers that RTP as a separate scheme would be the best option for the follow-up development of the RTP framework, for the following reasons:

A separate scheme

- could have its own lifecycle, independent from the payment schemes, including its own public consultation, which would help a more open and cooperative input on RTP from the relevant stakeholders and other interested parties
- would allow a separate adherence process to the RTP scheme, opening the adherence also to non-PSP RTP service providers
- would allow more flexibility for the implementation of the technical standards and transport networks for RTP

6 Technologies and environments for RTP initiation

The approach based on the 4-corners model using ISO 20022 standard for RTP relies on the principle that the RTP message is initiated by the Payee, sent to its RTP service provider, then routed through the inter-provider network to the Payer's RTP service provider which presents it to the Payer.

This model is the basis for the interoperability, even though – and this will be also emphasized in the next chapter – 3 corners or direct model can also be supported. Regardless the model, the use of the same standard (ISO 20022 in the MSG approach) is crucial in an eco-system where several types of models, actors and technologies exist.

In practice, when it comes to the way the RTP is initiated and how the Payee communicates it to the Payer, this approach can be combined with the reception of a simplified RTP directly from the Payee (e.g. between the “front end” applications of the parties). This direct presentation can be initiated through various technologies and environments:

- For **proximity** payments, a simplified RTP could be initiated by the Payee using proximity technologies such as NFC (Near Field Communication), QR-code, BLE (Bluetooth Low Energy), on the Payee's Point of interaction, such as Payee's Payment terminal or Payee's mobile device. The following specifications could be analysed to assess their compatibility with the minimum dataset of ISO 20022 RTP standard:
 - *NFC* (NFC Forum: <https://nfc-forum.org>)
 - *QR-codes*:
 - [EPC MSCT IIGs – Table 24: Proposed MSCT QR-code⁴](#). In addition, the MSCT MSG is undertaking an analysis on interoperability of proprietary QR-codes. It is recommended to leverage this work for further analysis related to the RTP.
 - [EMVCo QR Code Specification for Payment Systems - Merchant Presented Mode](#)
 - *BLE* (<https://www.bluetooth.com/bluetooth-technology/radio-versions/>)

⁴ [MSCT IIGs - for public consultation](#)



(See also the EPC White Paper on non-NFC-based mobile proximity payments) <https://www.europeanpaymentscouncil.eu/document-library/other/white-paper-non-nfc-based-mobile-sepa-card-proximity-payments>)

- Any future technical developments that may support the RTP process

The use of the simplified RTP for proximity interactions may imply that the identity of the Payer - as client of its RTP service provider - is not known at the moment of the RTP presentation. A subset of RTP dataset is therefore presented including only the RTP's information about the transaction and the Payee's identity. Alternatively, Payers may prefer to identify themselves (e.g. using Payee-specific identification schemes) before receiving the RTP so that their identity is known by the Payee and the RTP can also contain the Payer's identity.

An illustrative mapping between the proposed EPC MSCT QR-code specifications, EMVCo QR-code specifications and ISO 20022 RTP (pain.013) is provided in the Annex 1.

- For **remote** payment, the RTP is sent by the Payee to the Payer through remote technologies such as APIs, presented by an e-&m-commerce platform to the consumer via a mobile application or via web browser (this may be in the form of a QR-code) , or via messaging platforms (e.g. WhatsApp, Facebook, email). A compelling initiative on standardisation of payment request embedded in web browsers is provided by W3C ([W3C Payment Request API](#)).

7 Interoperability guidelines

7.1 Actors and roles in the RTP eco-system

As mentioned in the section 2.3, multiple types of organisations can have roles in the RTP eco-system. Multiple models are possible, as RTP is not a payment service so there is no impediment for other entities than PSPs to operate parts of RTP framework.

For example, e-invoicing service providers can have the role of RTP service provider, or even Payees themselves can create and send RTPs, using their internal infrastructure or making use of services from external providers, that could be PSPs or other types of entities.

The entity that will be responsible for managing the RTP scheme needs to elaborate a common adherence process to enable the 4-corners model for the RTP service. All adhering entities should fulfil some criteria such as:

- To be well identified, as part of adherence process, and be able to maintain a trustworthy relationship with the RTP framework managing entities
- To have the capacity to undertake KYC measures in relation with the Payees, as part of contractual relationship
- To have the capacity to build and maintain a secure and reliable technical infrastructure for the connection with the RTP eco-system
- To follow the trust and security requirements outlined in the section 8 below and that may be detailed and formalised in the course of the development of the RTP framework



These adherence criteria must be assessed considering the different characteristics of adhering entities such as PSPs and non-PSPs.

The 4-corners model can better ensure interoperability, but as different roles could be combined, 3-corners or 2-corners (direct) models should be also enabled, provided that the participating actors fulfil the above-mentioned criteria.

7.2 Interoperability aspects

Ensuring the right to adherence to all categories of trusted solution providers helps the reachability and deployment of the RTP service but does not guarantee interoperability between RTP service provider's solutions. Interoperability can be analysed from various angles but for the purpose of this document i.e. to specify the main aspects for an RTP standardisation framework, the key challenges are:

- *Interoperability at the level of standards.* This can be achieved by making use of ISO 20022 message set and agreeing on common implementation guidelines of this standard. For the environments that enable direct exchange of simplified RTPs, the adoption of a single RTP-enabled standard for proximity technologies (NFC, QR-codes, BLE, etc) could be an option allowing the secure and complete encapsulation of the RTP data in radio-transmitted data. Remote interactions for direct RTPs (APIs, in-browser RTPs, messaging applications, etc) could also be considered as other ways for RTP initiation.
- *Interoperability for participants' reachability.* Using the same standard and adhering to the same framework is not sufficient to achieve operational interoperability. The key elements for reachability are a comprehensive addressing scheme including participants' identification, and availability of RTP service on RTP service providers' platforms. Assuming that the RTP framework will not require a single addressing scheme, multiple ways of routing and participants' identification should be allowed. The RTP framework should assess and register the identification schemes allowed on both the Payee and Payer sides, and the acceptance of these schemes could be indicated by the RTP Service providers as part of the adherence process.
- *Interoperability at the level of functions.* A common set of minimum basic mandatory functions, options or service levels should be proposed by participating entities in order to foster the development of compelling RTP-based products.
- *Interoperability at the level of acceptance technologies.* Proximity technologies such as NFC, QR-codes and BLE require further consideration to develop an RTP-enabled standard.

The development of the RTP framework should include solutions to these challenges, which should constitute the "basics" that all participants should support. If options will be included in the framework and some participants adhere to them, interoperability aspects should be specifically addressed directly in the framework.

8 Guidelines for security and trust

It is not the purpose of the RTP MSG and its expected deliverables to provide detailed specifications related to security and trust. Nevertheless, the guidelines for acceptance and interoperability of various types of actors must follow some principles to ensure security and trust.



With respect to the customer authentication for payments, PSD2 defines the regulatory framework comprehensively. ASPSPs have adopted these rules and translated them into a range of standards and solutions for the online and mobile banking environment. This may also constitute a basis for the acceptance of an RTP if the RTP acceptance is not embedded in the payment authentication. Additional guidelines for security aspects related to payment initiation on mobile devices have been provided in the document released by the MSCT MSG, “Mobile Initiated SEPA Credit Transfer Interoperability Implementation Guidelines” – MSCT IIGs⁵. As a number of RTP use cases are in practice materialised on mobile devices, those guidelines fully apply to the RTP framework too. Moreover, the MSCT IIGs explicitly mention RTP as possible targets for security threats.

In addition, some security principles specific to EIPP have been highlighted in the EIPP MSG report released in November 2018⁶. As a number of RTP use cases originate from EIPP processes, those principles also apply to the RTP framework.

A thorough Risk Assessment needs to be made both on business rules as well as the IT and operational rules after the requirements of the RTP are set in the rulebook. The already available analysis mentioned above can be a reference for this assessment. RTP participants must take appropriate measures to mitigate the risks to maintain an appropriate level of trust and security in the RTP ecosystem.

9 Operational guidelines

This document is not intended to provide operational requirements that implementing entities should follow. Therefore, exact figures on volumes, response times, sizes of datastores, service levels, etc. are not provided.

Nevertheless, it would be in the interest of the future work on a RTP scheme to address operational aspects such as:

- Time limits to qualify a transaction as “now” or “later”
- Time-out as from the Payer’s RTP provider can send automatic exceptions for non-response from the Payer if necessary
- Time limit to allow Cancellation requests sent by Payee’s provider to cancel an RTP
- Maximum size of relevant data elements of RTP messages

10 Conclusions and way forward

The MSG concluded that the RTP functionality could be a key element of the end-to-end retail commerce experience, for transactions in both online and physical stores. It should support end-to-end processes, especially based on credit transfer payments – used in a large set of use cases. The use of ISO 20022 standard for RTP related messages could ensure a smooth articulation with the SEPA payment schemes and maintains the RTP within the broad scope of a global standard.

⁵ [MSCT IIGs - for public consultation](#)

⁶ [Report from the EIPP Multi-Stakeholder Group - November 2018](#)



Recognising that the design based on 4-corner model is the most common for interoperability, the MSG also considers that other models would be possible for the RTP services. Various types of entities could operate RTP eco-systems, whereas payment initiations always involve PSPs.

In addition to the transmission of the RTP messages through inter-provider, secure networks, the information about RTP initiation can be sent to Payers using various technologies such as proximity technologies or messaging applications.

On the basis of the analysis done and of the findings set out in this document, the MSG recommends that the following actions are launched to set up an operational RTP eco-system:

- Creation of an RTP scheme, separate from the SEPA payment schemes, the scope of which is outlined in the section 3.3 above (“Basic RTP functions”). The work on the scheme should be undertaken by the EPC with the regular involvement of all the relevant stakeholders and the interested parties in a multi-stakeholder format. All the additional work items should be also followed up by the EPC, including public consultations and submission to ISO 20022 of Change Requests and message creation requests, if necessary. The extension of the RTP scheme with functions outlined in the section 3.4 should be considered for the next stage, after publication of the first release.
- In addition, assess whether there is a need for creation of supporting Change Requests as part of the SCT and SCT Inst 2020 change management cycle:
 - EPC internal Change Requests to the SCT and SCT Inst payment schemes to allow linking an SCT or SCT Inst transaction with a preceding RTP. This may include corresponding Change Requests to ISO 20022 if the underlying ISO messages should be updated.
 - EPC internal Change Request to the SCT payment scheme to implement the special function “Notification to the payee of execution of payment instruction”. It will be assessed whether this function should be part of SCT scheme or of the RTP framework.
- In parallel, starting from the considerations set out in the section 6 above, development of guidelines for interfaces between the ISO 20022 based RTP scheme and ongoing standardisation initiatives for SCT and SCT Inst initiation at POIs.

All these further steps should be performed in accordance with the interoperability guidelines, as well as with the guidelines for security and trust as presented in this document.

11 Annexes

11.1 Examples of payment situations to be covered by the RTP framework

| Payment situation | Pay Now (real time) | Pay Later (Future Payment) |
|-------------------|-------------------------------------|---|
| Proximity | Physical commerce (C2B), P2P mobile | Physical pre-authorisation, payment in multiple instalments |



| | | |
|---------------|-----------------------------------|--|
| Remote | E-commerce, m-commerce (C2B), P2P | E-invoicing, e-commerce (B2B), funds collection, taxes |
|---------------|-----------------------------------|--|

Table 4: generic payment situations

Table 4 illustrates generic payment situations, which are only examples which the RTP framework will cover. In all these payment situations a RTP, based on the RTP standard, can be used to initiate the payment. This does not necessarily mean that all payment situations will be, from the start, supported by all RTP providing parties, i.e. all parties in the RTP eco-system. The RTP standard (rulebook) must make clear to which payment situations and services a RTP adherent is supporting when joining the RTP eco-system.

11.2 RTP processing flows

The processing flows and associated rules presented in this section are only for indicative purposes and are not exhaustive. A complete set of rules and their implementation guidelines should be provided as part of RTP scheme development.

Generic flow

The section below illustrates the processing flows for an RTP during the inter-provider stage, applicable to both proximity and remote cases.

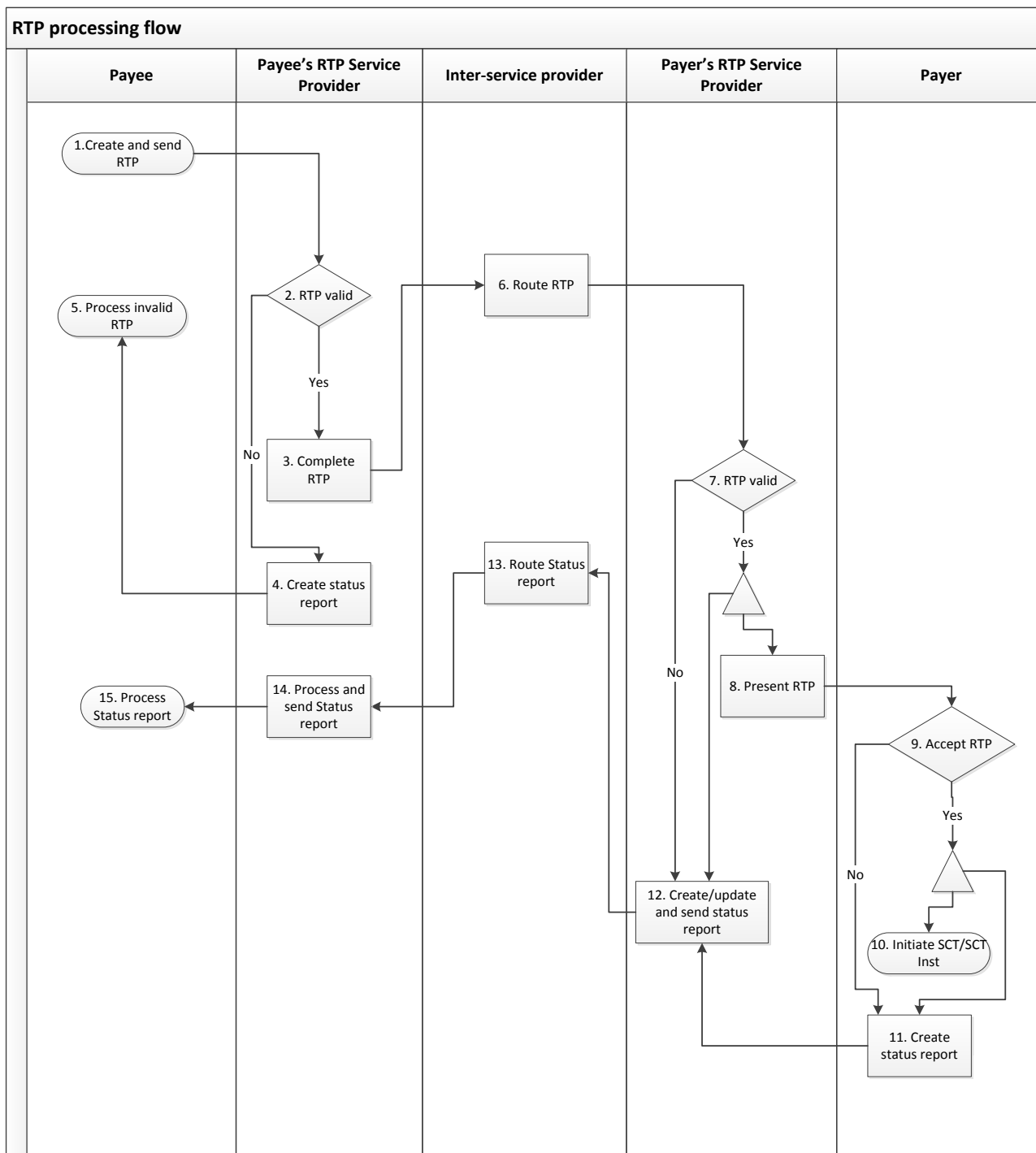


Figure 6: RTP processing flow

| Step/function | Label | Description |
|---------------|---------------------|---|
| 1 | Create and send RTP | The Payee creates the RTP in the standardised format (or in a bilaterally agreed format with its provider). It contains all mandatory elements and optional elements that may fine-tune the flow depending on |



| | | |
|----|--------------------------------------|---|
| | | the business conditions. |
| 2 | RTP valid | The Payee's provider performs a first validation of the RTP. This includes technical, security and format validation. |
| 3 | Complete RTP | In case of positive result of validation at step 2, the Payee's provider enriches the RTP with elements required for routing in the inter-provider space. |
| 4 | Create status report | In case of negative result of the validation at step 2, the Payee's provider creates a negative status report and sends it back to the Payee in the format agreed with the Payee. Some Payees can require at this stage a status report for any result (acknowledgement), not only for negative result. |
| 5 | Process invalid RTP | As a result, the Payee may correct and resend or cancel the initial RTP. |
| 6 | Route RTP | The RTP is routed through the inter-provider network based on the established routing mechanisms (e.g. via CSMs) |
| 7 | RTP valid | The Payer's provider validates the RTP, including the check of the Payer's identity. This may include Payer specific validation (e.g. if the Payer hasn't opted-out from the service so that the RTP is refused by default). |
| 8 | Send RTP | In case of positive result of the validation at step 7, the Payer's provider sends the RTP to the Payer. According to the format agreed with the Payer the RTP may be converted at this step. |
| 9 | Accept/Refuse RTP | The Payer decides on the follow-up to the RTP |
| 10 | Initiate SCT/SCT Inst | If the Payer decides to accept and pay the RTP, the payment is initiated at this step. Specific conditions, if allowed by the Payee, may be processed such as: partial payment, etc. |
| 11 | Create status report | In parallel to step 10, the Payer (e.g. in B2B) or the Payer's application creates and send back to the Payee the RTP status report to inform whether the RTP is accepted or rejected. The step 10 and 11 are not necessarily executed in the same time. For example, for "pay later" the status report is created before the payment. |
| 12 | Create/update and send status report | The Payer's provider can create the status report after validation of received RTP (negative or positive) at the step 7, or update/forward the status report received from the Payer |
| 13 | Route Status report | The Status report (positive or negative) is routed through the same inter-provider network used for the original RTP and based on the established routing |



| | | mechanisms (e.g. via CSMs) |
|----|--------------------------------|---|
| 14 | Process and send status report | The Payee's provider processes the received status report and may take decisions upon agreement with the Payee. Before sending it to the Payee the provider may apply format transformations. |
| 15 | Process status report | The Payee executes final actions upon receipt of status report: update the final status of the RTP record, prepares the RTP-payment reconciliation, etc. |

Table 5: steps of RTP processing flow

The RTP processing flow terminates with the initiation of the payment. The execution of the payment is performed under the rules of SCT or SCT Inst schemes that are outside of the RTP framework.

To ensure that payment instruction options are properly correlated with the RTP specific conditions, the following rules should apply:

- The SCT or SCT Inst instruction should include an indicator “payment for an RTP” as well as an End-to-End identifier for linking the RTP with the payment instruction.
- If the specific condition “SCT Inst required” is applied, the payment instruction should be created using the SCT Inst scheme. An “SCT Inst not supported” exception should be raised if SCT Inst is required but not supported by the Payer's PSP.
- If the specific condition “Change amount” is applied, the amount of the payment should be equal with the amount chosen and should be included in the status report.
- If the specific condition “Future payment” is applied, the upcoming payment instruction should be created and scheduled for later initiation and execution at a chosen time. At this term the payment should be initiated and executed without further action from the Payer. The payment will then follow the SCT or SCT Inst rules; i.e. until the payment term the Payer can still change the scheduled payment: cancel it, chose another term, execute it, change the amount, provided that such changes are allowed by the Payee and supported by the Payee and Payer RTP service providers.
- If the specific condition “Instalments” is applied, payment instructions for the instalments should be scheduled. At the instalment terms the recurrent payments should be executed without further action from the Payer. At any time before the execution of an instalment, the remaining instalments can be modified by the Payer.
- If the specific condition “Notification to the payee of execution of the payment instruction” is applied, an information message associated with the payment instruction should be sent by the Payer's PSP to the Payee's PSP immediately after the initiation of the payment.

In addition to these rules, the relevant elements of the dataset “DS-01 Customer-to-Bank SEPA Credit Transfer Information” as specified in the SCT or SCT Inst Rulebook⁷ should be set to the corresponding values from the originating RTP.

⁷ [EPC125-05 2019 SCT Rulebook version 1.0](#)

[EPC004-16 2019 SCT Instant Rulebook v1.0](#)



Specific flows

The above described flow is valid for common use cases whereby no specific conditions are applied and for “accept now” criteria.

Specific processing requirements can be identified when it comes up to the description of use cases with applied specific conditions and for “accept later” criteria.

The following specificities can be identified, deviating from the generic flow:

For “Embedded acceptance” use case:

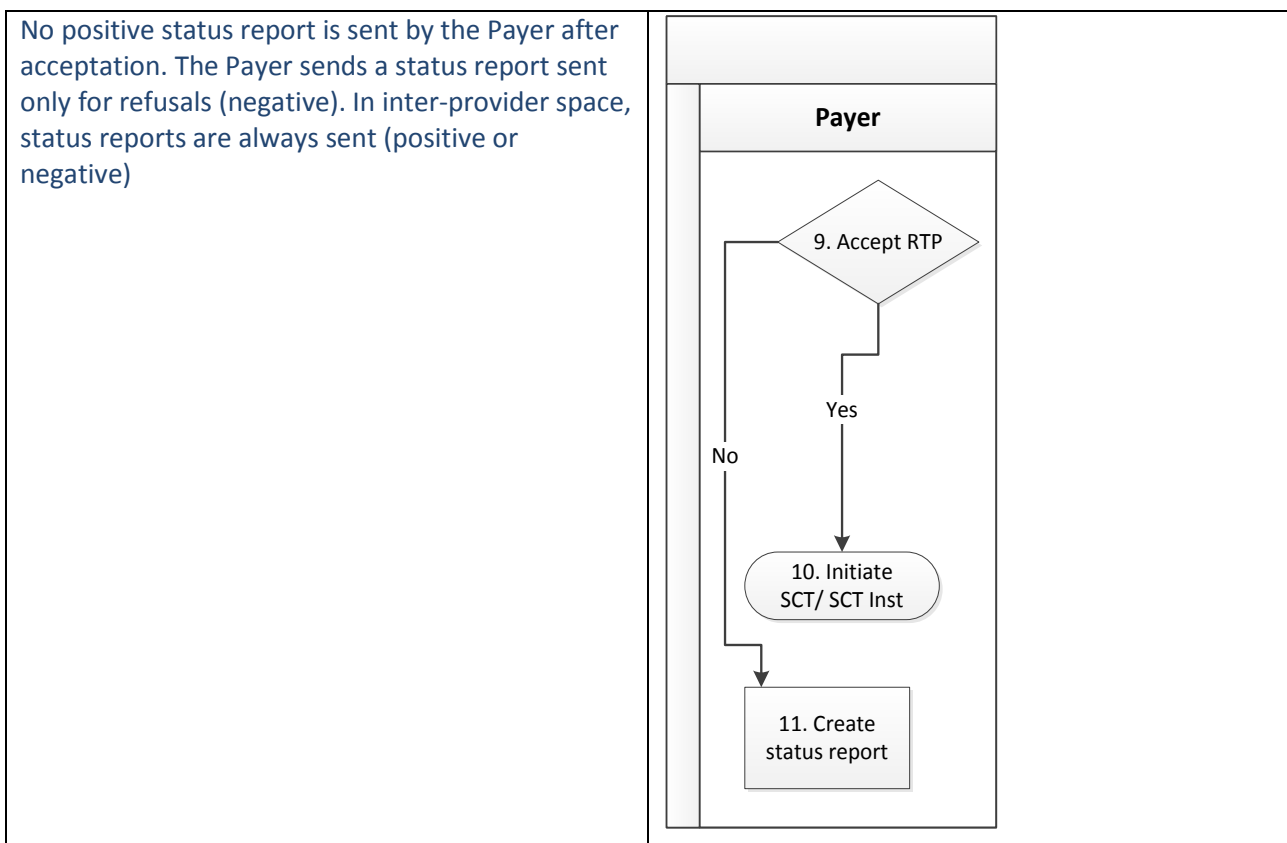


Figure 7: RTP specific processing flow for “embedded acceptance”

For “Accept Now” use cases

- The Payee should indicate in the RTP that the immediate acceptance is required (“Accept now”). The immediate aspect of the RTP can be fine-tuned by using an appropriate, short enough, RTP expiry date and time.
- Optionally, the Payee may indicate if SCT Inst specific condition is required or at least preferred. This option may not be available if the Payee’s PSP doesn’t support instant payments
- If SCT Inst is required and the Payer’s PSP doesn’t support SCT Inst, this should be indicated in a negative status report sent by the Payer’s PSP and the RTP should not be presented to the Payer.



- If the specific condition “Payment guarantee” or “Pre-authorisation” is required, the Payer’s PSP should perform all actions needed for the application of the guarantee. These actions are out of the RTP framework.
- If the specific condition “Notification to the Payee of payment instruction execution” is required, the Payer’s PSP should send this notification message to the Payee through the inter-PSP space.

The specific parts of the processing flows could be:

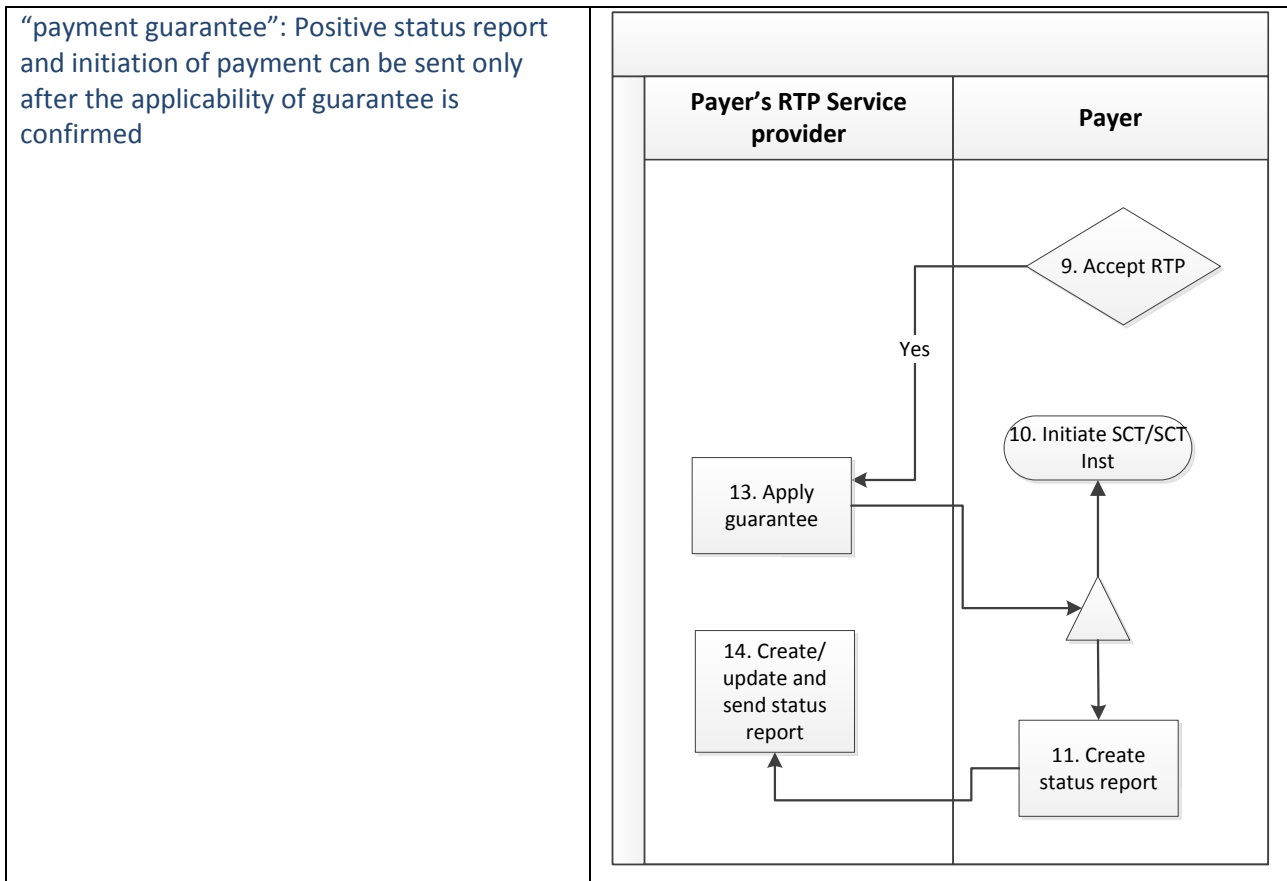


Figure 8: RTP specific processing flow for “payment guarantee”

- Other specific conditions (for simplicity the specific processing flows are not represented):
 - Distinction between SCT and SCT Inst. If both schemes are supported by the Payer’s PSP and the Payee requires the Payer’s choice, an additional step should be included before initiation of payment: “Choice of payment scheme”.
 - If the Payee allows the amount change and if the Payer makes use of this option, the amount of the payment should be equal to the amount chosen and this value should be returned to the Payee in the status report. The processing flow is not changed.
 - If the payment at a later term is allowed, and if the Payers makes use of this option, the corresponding payment is only scheduled for a later term and not initiated, so that the step “Initiate SCT/SCT Inst” becomes “Schedule SCT/SCT Inst”



- If the payment in instalments is allowed, and if the Payer makes use of this option, an additional step is included (“Select instalment options”, representing the user action of choosing the amount, number and frequency of instalments). The first instalment might be executed, and the scheduling of others is recorded by the Payer’s PSP for further execution. The instalment options should be included in the status report.

For “Accept Later” use cases

The specific parts of the processing flows could be:

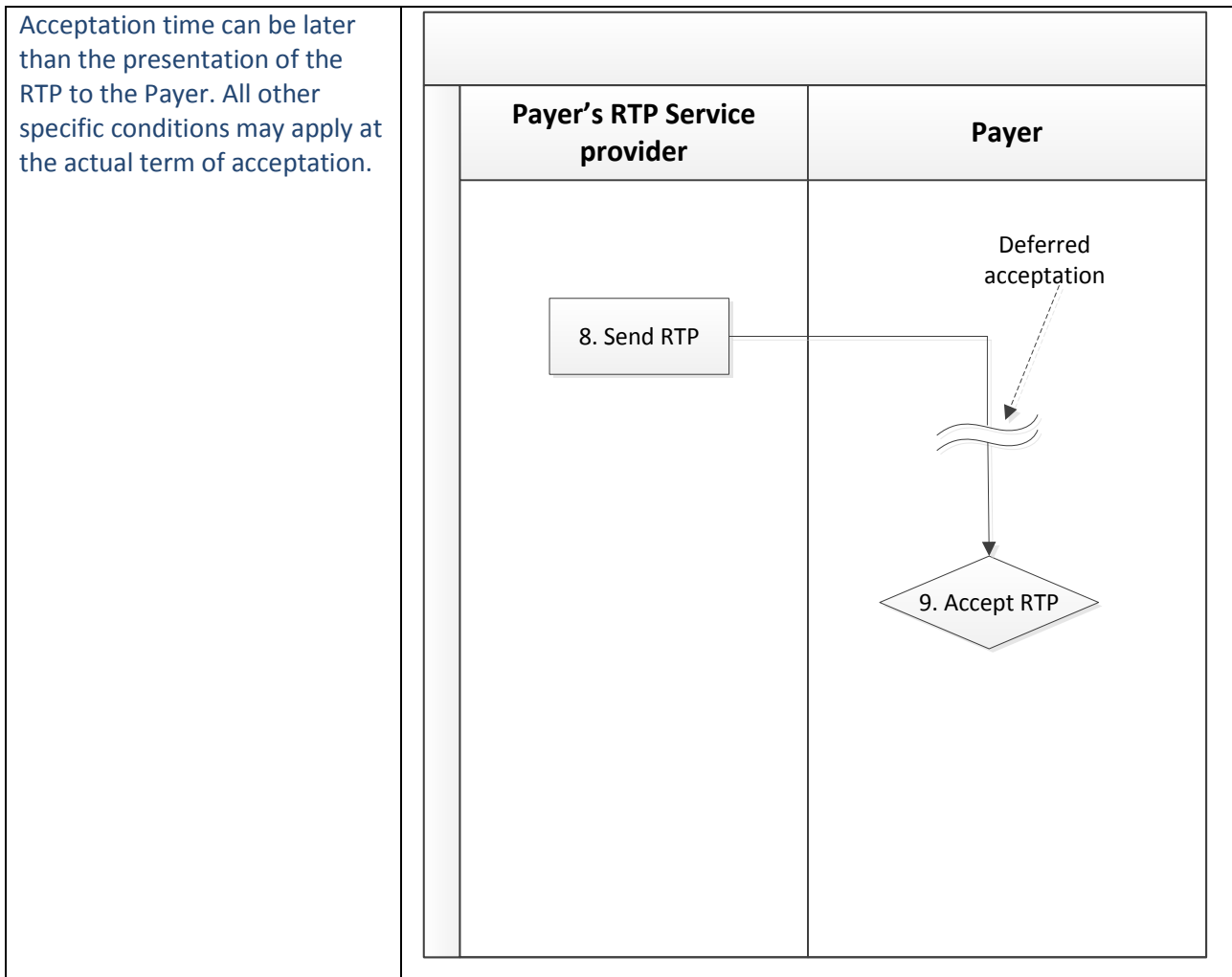


Figure 9: RTP specific processing flow for “accept later”

- The Payee should indicate in the RTP an acceptance term (“expiry date”).
- Optionally and specifically to EIPP use cases, the Payee may indicate specific conditions for early payments or for payments performed later than the deadline, such as rebates or penalties.
- If instant payment is required (instant payments scheduled in the future) and the Payer’s PSP doesn’t support instant payments, this should be indicated to the Payer.



- Similar to the “Accept now” criterion, the option to choose the payment date and time should be presented to the Payer. It can be fine-tuned taking into account the payment deadline and RTP expiry date.

Information to be included in a Positive status report (accepted RTP), in addition to the technical elements and elements identifying the underlying RTP:

- Optional Payer’s comment
- Actual payment instruction execution date and time
- Different amount (if allowed)
- Payment scheme selected (SCT Inst or SCT) (provided that the specific condition “SCT Inst required” or “SCT required” is applied and the Payer’s PSP allows this choice)
- Instalment details (when this specific condition is used)

Request for RTP Cancellation by the Payee

The diagram below illustrates the processing flows of the cancellation request. For simplification, the inter-PSP space is not represented as the routing function is similar to the RTP flow.

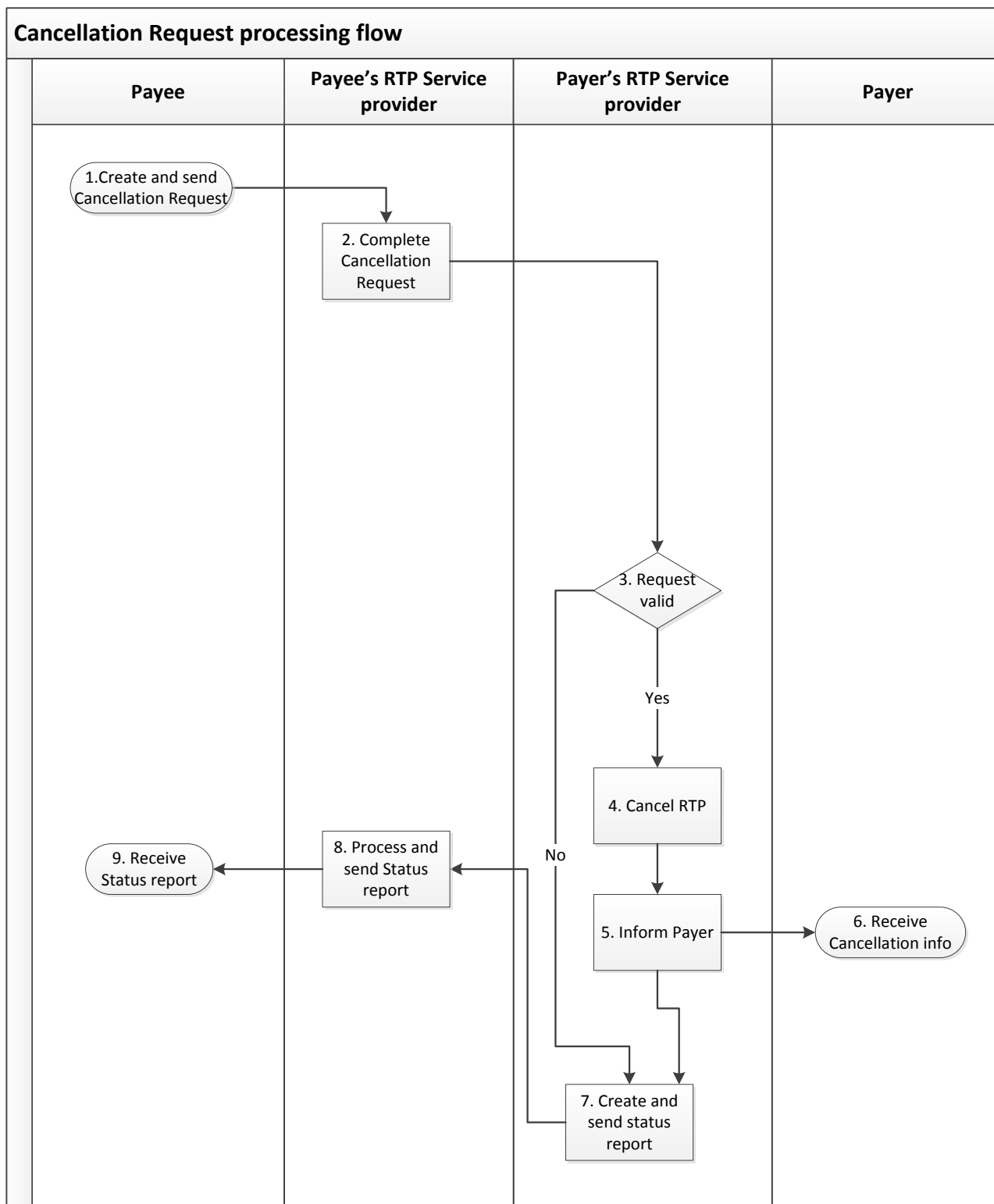


Figure 10: Request for RTP Cancellation by the Payee – processing flow

| Step/function | Label | Description |
|---------------|--------------------------------------|--|
| 1 | Create and send Cancellation Request | The Payee creates the Cancellation Request in the format agreed with its provider. |



| | | |
|---------|---------------------------------|---|
| 2 | Complete Cancellation Request | The Payee's provider enriches the RTP with elements required for routing in the inter-provider space. |
| 3 | Cancellation Request valid | The Payer's provider validates the request, including the check of the Payer's identity. This also includes functional validation such as: the cancelled RTP exists, is not already paid, already cancelled including for exceeding expiry date. |
| 4 | Cancel RTP | The RTP is marked as cancelled in the Payer's provider records |
| 5, 6 | Information to the Payer | Information is sent to the Payer on the cancellation of the RTP, in a format specific to the interface provided to the Payer. |
| 7, 8, 9 | Status report sent to the Payee | A status report is sent to the Payee via the Payee's provider |

Table 6: steps of Cancellation by the Payee processing flow

11.3 Structure of the ISO 20022 RTP messages

The essential elements of the pain.013 message allowing the fulfilment of the RTP broad requirements listed in the table below. In addition, it contains other technical elements, common to all ISO 20022 messages.

| Data element | Description |
|------------------------------|---|
| Initiating Party | The Payee itself or the party that initiates the request on behalf of the Payee. |
| Payment Method | Credit transfer or cheque are possible payment methods. However, cheque is not applicable for RTP in SEPA. |
| Amount | Amount of the RTP |
| Amount Modification Allowed | If the Payee allows the Payer to pay a different amount than the requested amount |
| Service level | Agreement under which or rules under which the transaction should be processed |
| Local instrument | User community specific instrument |
| Requested Execution Date | Date at which the initiating party requests the payment |
| Expiry Date | Date (and time) by which the debtor must have accepted or rejected the request. |
| Guaranteed Payment Requested | If a payment guarantee is requested, assuming a payment guarantee contract exists between the different actors. |
| Debtor (name, identifier) | Payer's name and identifier |
| Debtor agent | Financial institution servicing an account for the debtor |



| | |
|-----------------------|---|
| End to End Identifier | Identifier to be used in the upcoming payment messages |
| Creditor identifier | Payee's identifier |
| Creditor account | Identifier of the Creditor account, beneficiary of the upcoming payment |
| Enclosed File | Document attached |

Table 7: relevant data elements of ISO 20022 RTP

11.4 Illustrative mapping between elements of QR-code specifications with ISO 20022 RTP

| ISO 20022 RTP (pain.013) | MSCT QR-code | EMVCo QR-code (merchant presented) |
|--|--|---|
| | | Point of Initiation Method |
| | | Cyclic Redundancy Check (CRC) |
| | | Merchant Account Information |
| | Service tag (ID for the reading application) | |
| | Version Number | Payload Format Indicator |
| | Character set | |
| PaymentTypeInformation->LocalInstrument | Identification of MSCT payment context | |
| Initiating Party->identification | MSCT service provider | |
| | MCC | Merchant Category Code |
| Creditor->OrganisationIdentification->Identification | Proxy/token Beneficiary | |
| | Proxy/token type | |
| Creditor->OrganisationIdentification->Issuer | Proxy/token provider | |
| Creditor->Name | Name of Beneficiary | Merchant Name |
| | | Merchant Information-Alternate Language |
| Creditor->Country | | Country Code |
| Creditor->PostalAddress->TownName | | Merchant City |
| Creditor->PostalAddress->PostCode | | Postal Code |
| Creditor->PostalAddress->Department | | Store Label |
| Creditor->PostalAddress->SubDepartment | | Terminal Label |
| Creditor Agent->BIC | BIC Beneficiary ASPSP | |
| CreditorAccount->Identification->IBAN | IBAN Beneficiary | |
| Purpose | Purpose of credit transfer | Purpose of Transaction |
| RemittanceInformation->Structured | Remittance information structured | |
| RemittanceInformation->Structured->CreditorReferenceInformation | | Bill Number |
| RemittanceInformation->Structured->AdditionalRemittanceInformation | | Mobile Number |
| RemittanceInformation->Structured->AdditionalRemittanceInformation | | Additional Consumer Data Request |
| RemittanceInformation->Unstructured | Remittance information unstructured | |
| Amount->ActiveCurrency | Currency | Transaction Currency |



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| | | |
|--|---|-------------------------------------|
| Amount->CurrencyAmount | Transaction amount | Transaction Amount |
| | | Tip or Convenience Indicator |
| | | Value of Convenience Fee Fixed |
| | | Value of Convenience Fee Percentage |
| | | Bill Number |
| Supplementary Data | Beneficiary to Originator information | |
| | Max # chars/bytes incl. LF of largest alternation | |
| Debtor->OrganisationIdentification->Identification | | Loyalty Number |
| Debtor->OrganisationIdentification->Identification | | Customer Label |
| CreditTransferTransaction->Payment Identification | | Reference Label |
| <i>Non-mapped ISO 20022 elements</i> | | |



11.5 RTP MSG membership list

| Name | Institution |
|----------------------|------------------------------------|
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| Rasmus Eskestad | EACHA (Nets) |
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| Dmitry Yatskaer | OpenWay |
| Erwin Kulk | EBA CLEARING |
| Henrik Hodam | Worldline |
| José Luis Langa | EACHA (Iberpay) |
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