1 HIGH VALUE PAYMENTS (RTGS - HVP)
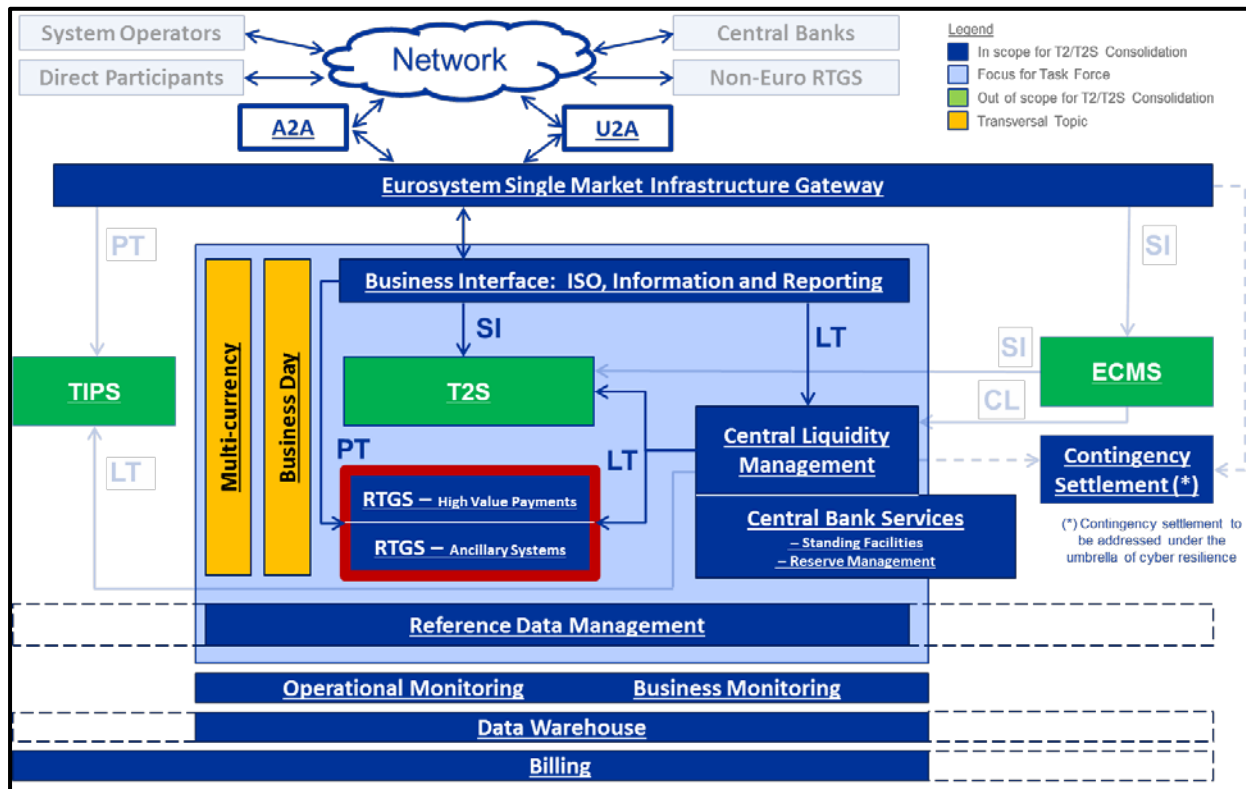
1.1 OVERVIEW

1.1.1 Context Diagram

Figure 1 - Context diagram for RTGS - High Value Payments

[Description of the business processes within the Business Domain, which should be shown as boxes in the diagram above, indicating how they relate to the outside world, or each other]

The RTGS for High Value Payments is in charge of settling payments orders on the participants' accounts.

This includes the entry disposition, the booking and the queue management.

1.1.2 Business Processes

Business Process Name	BP Reference	Business Process Description
Payment/Transaction Order Settlement	RTGS.BP.PAYT	Settlement of a payment order.
Queue Management/ Payment/Transaction Order Amendment	RTGS.BP.PAYA	Amendment of a payment order originally submitted before with respect to a pre-defined set of interventions.
Queue Management/ Payment/Transaction Order Cancellation	RTGS.BP.PAYC	Cancellation of a payment order originally submitted before.

Table 1 - Business Processes for RTGS - High Value Payments

1.2 PAYMENT/TRANSACTION ORDER SETTLEMENT - RTGS.BP.PAYT

This business process describes the settlement of a payment order. The process will be initiated by an external party participating in the platform via sending of the respective message to the platform. The platform will process the message. If the message content is either invalid or would result in certain reference data checks to fail, it will be rejected and a rejection notice will be sent to the initiating external party. If the message content is valid and certain reference data checks have been passed, the platform will perform a series of operations according to the message content:

These core settlement operations of a payment order include various checks on the execution time reached, limits possibly breached, liquidity reservations/segregation possibly over-exploited and intraday restrictions on accounts/participants possibly blocked. If either of these checks fails, the core settlement operation will result in a failure and a settlement failure notice is sent to the initiating external party. Additionally, the core settlement operation also includes provision checks on available liquidity on the balances involved. If, on the one hand, these provision checks fail and all the aforementioned checks succeeded, the payment/transaction order will be queued for a re-attempt for settlement. The queue will then be dissolved either through offsetting with new incoming liquidity or through payment/transaction order cancellation or amendment or through time-induced rejection (e.g. end-of-day, "TILL" time reached). If, on the other hand, these provision checks succeed, the core settlement operation will result in a success and the platform will finally and irrevocably book the transaction on the debit and credit accounts involved. In that case, the platform will send a settlement success notice to the initiating external party.
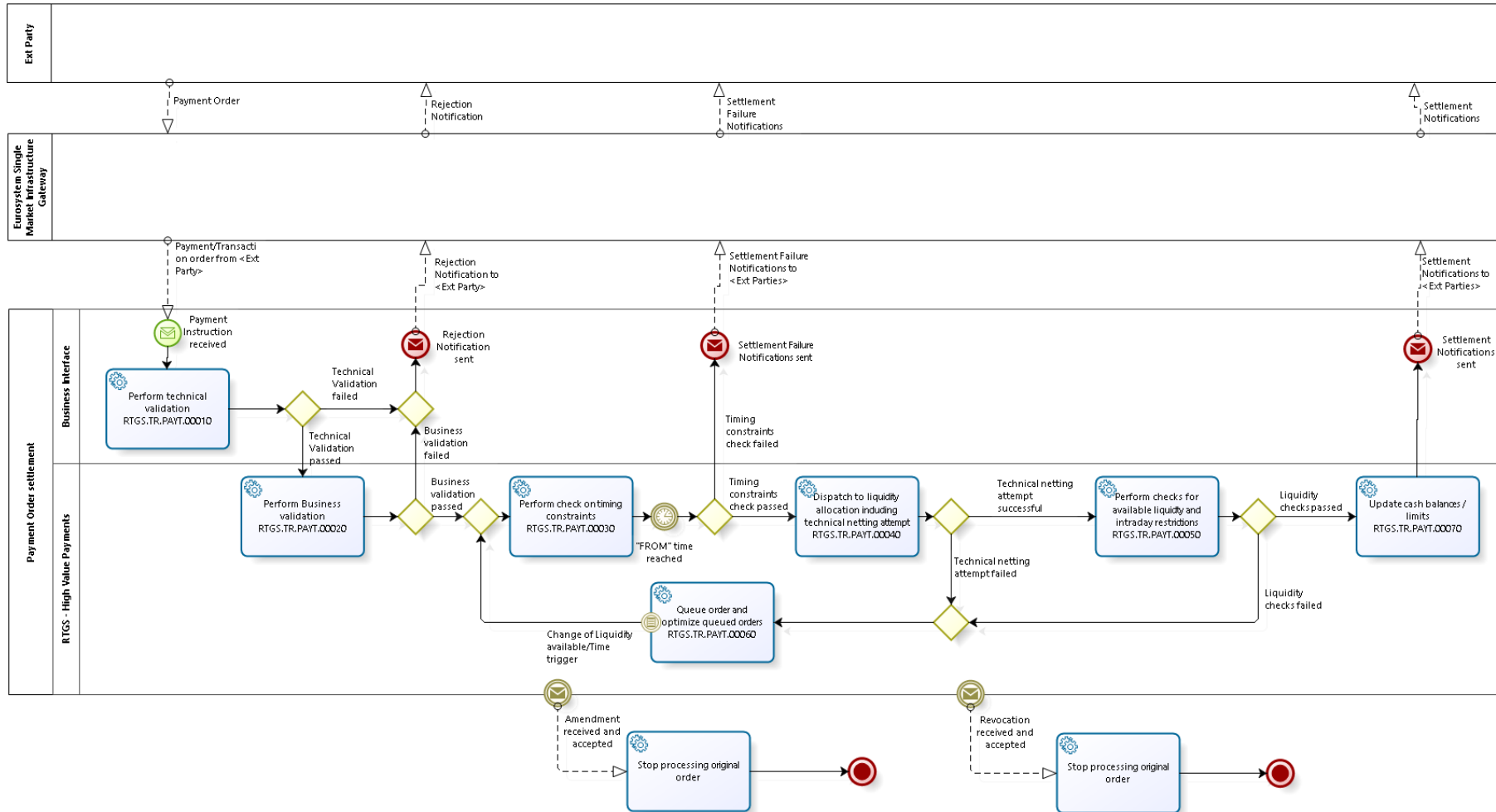
1.2.1 Business Process Model

Figure 2 - Business Process Model: <Name of Business Process>

1.2.2 User Requirements

[Describe each User Requirement identified for the business process. Requirements may relate to a specific Task described within the business process, or (more often) will relate to the business process in a general sense.]

[Each User Requirement has a reference that is unique within the business process, and may additionally be associated with a specific Task in either the business process model or any of the sub-processes.]

Requirement Id	RTGS.UR.PAYT.nnnn0
Requirement Name	<Concise descriptive title for requirement>
Task Ref	RTGS.TR.PAYT.

Description

[Detailed description of the requirement.

This may be related to a particular Task within the business process, i.e. a particular activity or step within the process, in which case the Task Ref will be specified above.

Alternatively, the requirement may be more generic and cannot be associated with any particular Task, but nevertheless is a requirement of the business process, in which case the Task Ref above is left blank.]

[The description should include details of any limits, restrictions, dependencies or exceptions relating to the requirement, as well as the details of the impact on the requirement in these circumstances.]

1.2.2.1 TECHNICAL VALIDATION - RTGS.TR.PAYT.00010

[Placeholder for description of the task. Describe the main activity, exceptions and how decisions are reached (where appropriate)]

If the validation failed, rejection notifications with appropriate reason code must be sent to the relevant parties.

1.2.2.2 BUSINESS VALIDATION - RTGS.TR.PAYT.00020

[Placeholder for description of the task. Describe the main activity, exceptions and how decisions are reached (where appropriate)]

If the validation failed, rejection notifications with appropriate reason code must be sent to the relevant parties.

Warehoused payments for which the intended settlement date and time is not yet reached the payment/transaction order will be parked and therefore not considered as an object for the core settlement operation.

Once the intended settlement date and time is reached, the payment/transaction order will be automatically and immediately sent to the core settlement operation described below.

On the contrary, Non warehoused payment/transaction orders having passed all the checks described above, will be sent immediately to the core settlement operation described below.

1.2.2.3   CHECK ON TIMING CONSTRAINTS - RTGS.TR.PAYT.00030

[Placeholder for description of the task. Describe the main activity, exceptions and how decisions are reached (where appropriate)]

Requirement Id	RTGS.UR.PAYT.00310
Requirement Name	From Time
Task Ref	RTGS.TR.PAYT.00030

Description

A payment - or, more general - transaction order can only be submitted to settlement if its "From Time" - if indicated - is reached. If no "From Time" is indicated, no restriction applies in that respect.

Requirement Id	RTGS.UR.PAYT.00320
Requirement Name	Information period
Task Ref	RTGS.TR.PAYT.00030

Description

In contrast to the "From Time" above, which is a defined point in time, the "Information Period" is a time period. A payment - or, more general - transaction order can only be submitted to settlement if its "Information Period" - if indicated - has already elapsed. If no "Information Period" is indicated, no restriction applies in that respect.

Requirement Id	RTGS.UR.PAYT.00330
Requirement Name	Till Time
Task Ref	RTGS.TR.PAYT.00030

Description

A payment - or, more general - transaction order can only be submitted to settlement if its "Till Time" - if indicated - is not yet reached. If no "Till Time" is indicated, no restriction applies in that respect.

Requirement Id	RTGS.UR.PAYT.00340
Requirement Name	End-of-Day
Task Ref	RTGS.TR.PAYT.00030

Description

A payment - or, more general - transaction order can only be submitted to settlement if the system wide "End-of-Day" is not yet reached.

1.2.2.4 DISPATCH TO LIQUIDITY ALLOCATION INCLUDING TECHNICAL NETTING ATTEMPT - RTGS.TR.PAYT.00040

[Placeholder for description of the task. Describe the main activity, exceptions and how decisions are reached (where appropriate)]

This activity, also called "entry disposition", includes:

- the definition of the priority of the transaction

- the identification of the related queue where the transaction is to be located

- the transaction can be attempted only if no older transaction of the same priority or no transaction of higher priority is unsettled. There are two exceptions to this rule: normal payment; offsetting bringing additional liquidity to the sender

Then, once it is checked that the settlement can be attempted, description of the offsetting (transaction covered or offsetting on top of the receiver's queue, or offsetting from the receiver's queue bring additional liquidity to the sender)

1.2.2.4.1 Priority

Requirement Id	RTGS.UR.PAYT.00410
Requirement Name	Priority
Task Ref	RTGS.TR.PAYT.00040

Description

Every payment should be marked as "normal", "urgent" or "highly urgent". If no priority class is selected, payments will be handled as normal payments.

Requirement Id	RTGS.UR.PAYT.00420
Requirement Name	Identification of the queue
Task Ref	RTGS.TR.PAYT.00040

Description

Once the priority of a payment is determined, it is queued in order to debit the identified allocations. There is one queue for each priority.

Requirement Id	RTGS.UR.PAYT.00430
Requirement Name	Order in the queues
Task Ref	RTGS.TR.PAYT.00040

Description

The transactions are ordered according to the following criteria:

▶ Order of the priorities (HU, U, N)

▶ Age of the transaction (submission time)

1.2.2.4.2   Settlement Attempt Conditions

Requirement Id	RTGS.UR.PAYT.00440
Requirement Name	Conditions for settlement attempt
Task Ref	RTGS.TR.PAYT.00040

Description

A payment can be submitted to settlement only if:

► it is on top of its queue

► the queues with a higher priority are empty

1.2.2.4.3   Exceptions for immediate settlement attempt

Requirement Id	RTGS.UR.PAYT.00450
Requirement Name	Exceptions for immediate settlement attempt
Task Ref	RTGS.TR.PAYT.00040

Description

There are two exceptions to this rule:

► Normal payments can settle independently of their age, if no other payment with a higher priority is queued

► Technical netting bringing additional liquidity to the sender/debited participant (technical netting between the debited participant and the credited participant). See T2 "offsetting with liquidity increase".

1.2.2.4.4   Offsetting / Technical netting for settlement attempt

Requirement Id	RTGS.UR.PAYT.00460
Requirement Name	Offsetting / Technical netting for settlement attempt
Task Ref	RTGS.TR.PAYT.00040

Description

When a payment is submitted to settlement, technical netting is required in order to reduce the liquidity needed for its settlement.

The payments that can be selected together with the payment submitted to settlement are:

► Payments on top of the receiver's queue (See T2 "offsetting position 1")

► Payments not on top of the receiver's queue, but bringing liquidity to the receiver (See T2 "extended offsetting")

1.2.2.5   PERFORM CHECKS FOR AVAILABLE LIQUIDITY AND INTRADAY RESTRICTIONS - RTGS.TR.PAYT.00050

[Placeholder for description of the task. Describe the main activity, exceptions and how decisions are reached (where appropriate)]

Here are described the rules for provision-checks for each type of transactions, for liquidity and limits.

Type of transactions:

- liquidity transfers. No checks towards limits. LT use what is available, in order to fully settle or partially settle (in case of empty balance, LT are unsettled).

- payments. Checks towards limits. A payment is settled using first the reserved balance (if mentioned / according to the rules defined in CLM), and secondly the main balance. No partial settlement.

- reservations. A reservation moves liquidity from the main balance to the reserved balance. It moves what is available (meaning possibly partial amount).

PS: rules for credit line are to be further detailed, notably in case of decrease of the credit line that would bring the account to be negative. In such a case, the credit line needs to be queued.

1.1.1.1.1   Provision check Ia – Blocking/Intraday restriction validation

Requirement Id	RTGS.UR.PAYT.00510
Requirement Name	1.2.2.5.1 Provision check Ia - Blocking/Intraday restriction validation
Task Ref	RTGS.TR.PAYT.00050

Description

(to be further detailed) It is to be checked whether the receiving parties are eligible (i.e. not blocked) for receiving and sending parties are eligible for sending. If the check fails, the order is finally rejected.

1.1.1.1.2   Provision check Ib – Sanction list validation

Requirement Id	RTGS.UR.PAYT.00520
Requirement Name	1.2.2.5.2 Provision check Ib – Sanction list validation
Task Ref	RTGS.TR.PAYT.00050

Description

(to be further confirmed and detailed) The future RTGS shall be able to check transactions against sanction lists (like OFAC for the American listed names and BANZ for the listed names coming from the European Union) - also on the beneficiary level.

1.1.1.1.3	Provision check II / Limit check

Requirement Id	RTGS.UR.PAYT.00530
Requirement Name	Provision check II - Limit check
Task Ref	RTGS.TR.PAYT.00050

Description

(to be further detailed). Check toward bilateral and multilateral limits (only for payments).

If the Provision Check II fails, the order is queued.

1.1.1.1.4	Provision check III / Balance check

Requirement Id	RTGS.UR.PAYT.00540
Requirement Name	Provision check III - Balance check
Task Ref	RTGS.TR.PAYT.00050

Description

(to be further detailed). Check toward balance: first reservations if mentioned, then main balance. Liquidity transfers and reservation only use what is available, thus provision check III never fails.

If the Provision Check III fails for payments, the order is queued.

1.2.2.6   QUEUE ORDER AND OPTIMISE QUEUED ORDERS - RTGS.TR.PAYT.00060

[Placeholder for description of the task. Describe the main activity, exceptions and how decisions are reached (where appropriate)]

1.2.2.6.1   Optimisation

Optimisation has the objective to dissolve as soon as possible the queues. It can be either event-based, i.e. triggered when any event that can help settling a payment occurs, such as new liquidity on an account or settlement of a payment higher in a queue, or time-based, i.e. started regularly, to take into account all the events that occurred since the last optimisation.

Optimisation is aiming at resolving the reasons for non-settlement, i.e. either lack of liquidity through technical netting, or breach of a limit which can be bilateral or multilateral. It is described in terms of objective (to increase the number of settled payments) and constraints (balances and limits, order in the queues). Its implementation (deselect strategy, mathematical optimisation…) will be decided during the realisation phase.

1.2.2.6.2   Triggers for optimisation/recycling

Requirement Id	RTGS.UR.PAYT.00610
Requirement Name	Triggers for optimisation/recycling
Task Ref	RTGS.TR.PAYT.00060

Description

The trigger for optimisation is the unsettlement of the transaction.

The triggers for recycling can be any event that can help settling a payment:

- the settlement of a transaction ahead in the queues

- the arrival of new liquidity in one account / allocation

- the change of a limit

Optimisation and recycling can as well be time-based in order to streamline the process.

1.2.2.6.3   Optimisation objectives

Requirement Id	RTGS.UR.PAYT.00620
Requirement Name	Optimisation objectives
Task Ref	RTGS.TR.PAYT.00060

Description

The requirement for optimisation is to reduce the stock of unsettled payments and to minimise the needed liquidity.

Question: should priority be strictly respected? What are the exceptions to this rule: when additional liquidity is brought to one participant (see above technical netting); are there any other cases where a participant would accept priority to be breached because its overall situation is improved?

1.2.2.7   BOOKING - RTGS.TR.PAYT.00070

Requirement Id	RTGS.UR.PAYT.00710
Requirement Name	Booking on a gross basis
Task Ref	RTGS.TR.PAYT.00070

Description

Each and every transaction shall be booked on a gross basis. This is without prejudice to the use of technical netting effects in the provision check when several transactions are submitted together for settlement.

Requirement Id	RTGS.UR.PAYT.00720
Requirement Name	Exclusive control over the booking process
Task Ref	RTGS.TR.PAYT.00070

Description

No credit or debit can take place on the cash accounts without being processed by the booking process.

Requirement Id	RTGS.UR.PAYT.00730
Requirement Name	Final and unconditional booking process
Task Ref	RTGS.TR.PAYT.00070

Description

Once booked on the cash accounts, cash debits and credits must be final, i.e. irrevocable and unconditional.

1.3 QUEUE MANAGEMENT / PAYMENT/TRANSACTION ORDER AMENDMENT - RTGS.BP.PAYA

Queue management / amendment is composed of:

1 - Change priority (not possible for highly urgent) (This does not change the submission time)

2 - Put on top of the queue one or several payments (triggering their settlement attempt)

3 - Bring one or several payments to the bottom of the queue (possibly triggering the settlement of another payment)

4 - Change of execution time (only if it was set before) (possibly triggering the settlement of another payment).

This business process describes the amendment of a payment order. The process will be initiated by an external party participating in the platform via sending of the respective message to the platform. The platform will process the message. If the message content is either invalid or would result in certain reference data checks to fail, it will be rejected and a rejection notice with appropriate reason code will be sent to the initiating external party and to all other relevant parties. If the message content is valid and certain reference data checks have been passed, the platform will perform the amendment of the original payment order the amendment message is referring to. If the amendment operation fails, an amendment denial notice is sent to the initiating external party. In case the amendment operation succeeds, the platform will amend the original message accordingly and the platform will send an amendment success notice to the initiating external party.
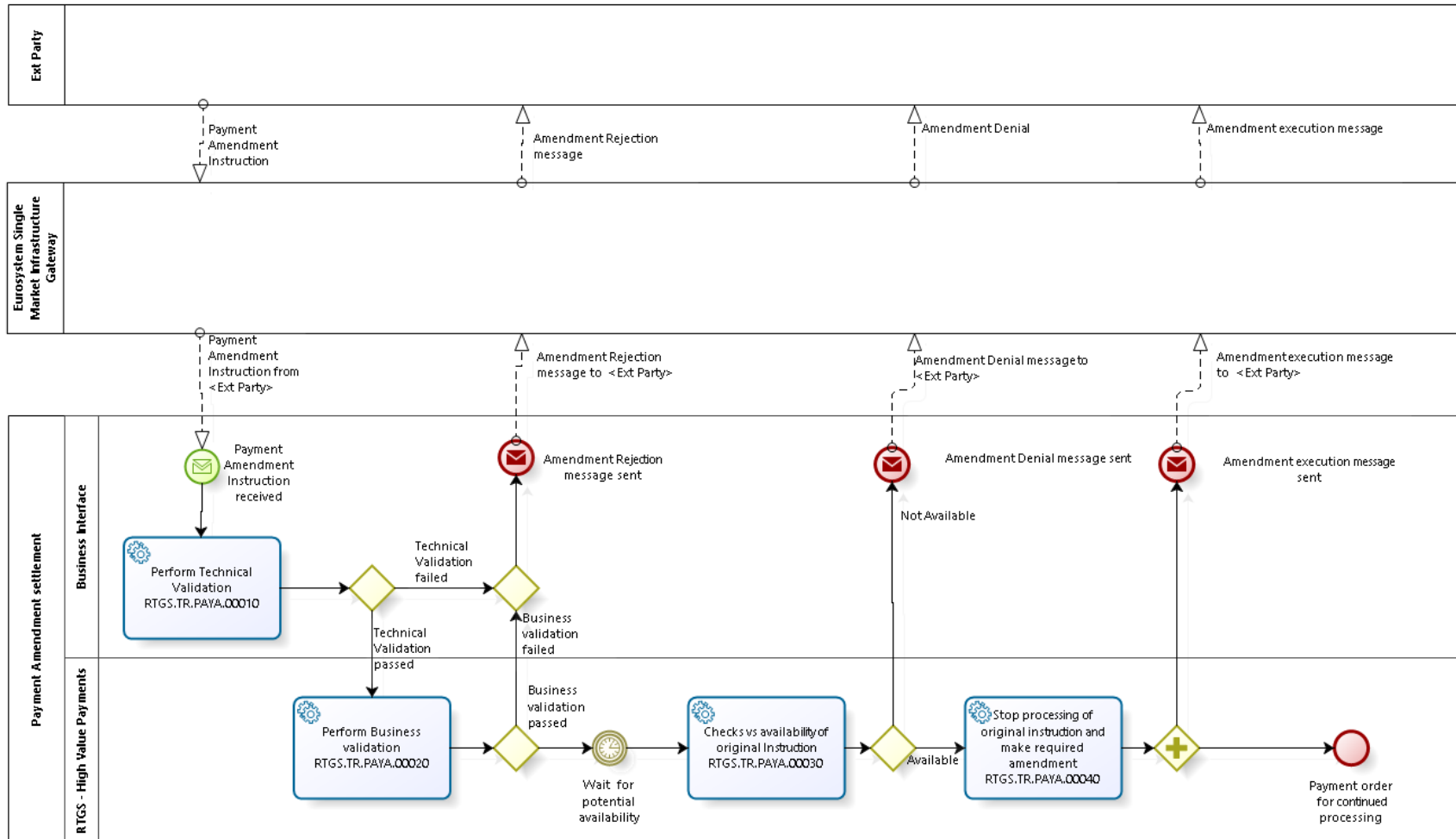
1.3.1 Business Process Model

Figure 3 - Business Process Model: Queue Management/ Payment/Transaction Order Amendment

1.3.2 User Requirements

1.3.2.1 TECHNICAL VALIDATION - RTGS.TR.PAYA.00010

(see 1.2.2.1)

If the validation failed, rejection notifications with appropriate reason code must be sent to the relevant parties.

1.3.2.2 BUSINESS VALIDATION - RTGS.TR.PAYA.00020

Requirement Id	RTGS.UR.PAYA.00020
Requirement Name	Amendment of instructions
Task Ref	RTGS.TR.PAYA.00020

Description

The following amendment instructions are valid:

1 - Change priority (not possible for highly urgent) (This does not change the submission time).

2 - Put on top of the queue one or several payments (triggering their settlement attempt).

3 - Bring one or several payments to the bottom of the queue (possibly triggering the settlement of another payment).

4 - Change of execution time (only if it was set before) (possibly triggering the settlement of another payment).

The amendment instruction can be sent by the sending participant, the account owning participant or the respective CB acting on behalf its credit institutions/customers.

(Maybe additional restrictions have to be added to the amendment instructions. E.g, Which attributes can be changed by whom?)

If the validation failed, rejection notifications with appropriate reason code must be sent to the relevant parties.

1.3.2.3 CHECKS VS. AVAILABILITY OF ORIGINAL INSTRUCTION - RTGS.TR.PAYA.00030

Requirement Id	RTGS.UR.PAYA.00310
Requirement Name	Status of original payment/transaction order
Task Ref	RTGS.TR.PAYA.00030

Description

The original payment order to be amended with the respective instruction has to be in an intermediate state to be eligible for amendment (e.g. queued and not considered in an ongoing optimisation simulation process). Thus, amendment of instructions is not feasible if they are already in an end

state (e.g. settled, rejected or cancelled). For an improved user experience, the check for availability should also wait case-by-case until the intermediate state has been reached.

An instruction eligible for amendment can either be a Queued Order (see RTGS.TR.PAYT.00060), an order for which the "FROM" time was not reached yet or a warehouse payment.

The availability can be also dependent not only on the state, but also on the attribute to be changed itself. E.g., one can change the "TILL" time as long it has not elapsed and only to a time which has not yet elapsed etc.

1.3.2.4 STOP PROCESSING OF ORIGINAL INSTRUCTION AND MAKE REQUIRED AMENDMENT - RTGS.TR.PAYA.00040

The original payment has to be suspended from the general processing of payments/transactions before and while the requested amendment takes place.

This means that a currently queued instruction has to be removed from its queue, if it is not considered in an ongoing optimisation simulation process.

An instruction for which the "FROM" time is not reached yet or a warehouse payment have not to be considered in the checks related to their eligibility.

The original payment order will be amended according to the valid Payment Amendment Instruction.

1.3.2.5 CONTINUE PROCESSING OF AMENDED ORDER

Depending on the most recent state of the original instruction and the attribute which was amended, the amended instruction will be processed through the core settlement operations chain. For instance, if the queue order was changed, the amended instruction will be placed at the respective position and will be captured by the normal queue dissolution processes. If, on the other hand, the priority has changed, the amended order will be dispatched to the appropriate queue and placed there at the position appropriate to the relevant time stamp the original instruction had (i.e., the amendment does not result in an update of that relevant timestamp; the positon in the new queue is determined as if the original instruction has already been placed to that queue originally).

1.4 QUEUE MANAGEMENT / PAYMENT/TRANSACTION ORDER CANCELLATION - RTGS.BP.PAYC

This business process describes the cancellation of a payment order. The process will be initiated by an external party participating in the platform via sending of the respective message to the platform. The platform will process the message. If the message content is either invalid or would result in certain reference data checks to fail, it will be rejected and a rejection notice will be sent to the initiating external party. If the message content is valid and certain reference data checks have been passed, the platform will perform the cancellation of the original payment order the cancellation message is referring to. If the cancellation operation fails, a cancellation denial notice is sent to the initiating external party. In case the cancellation operation succeeds, the platform will cancel the original message and the platform will send a cancel success notice to the initiating external party.
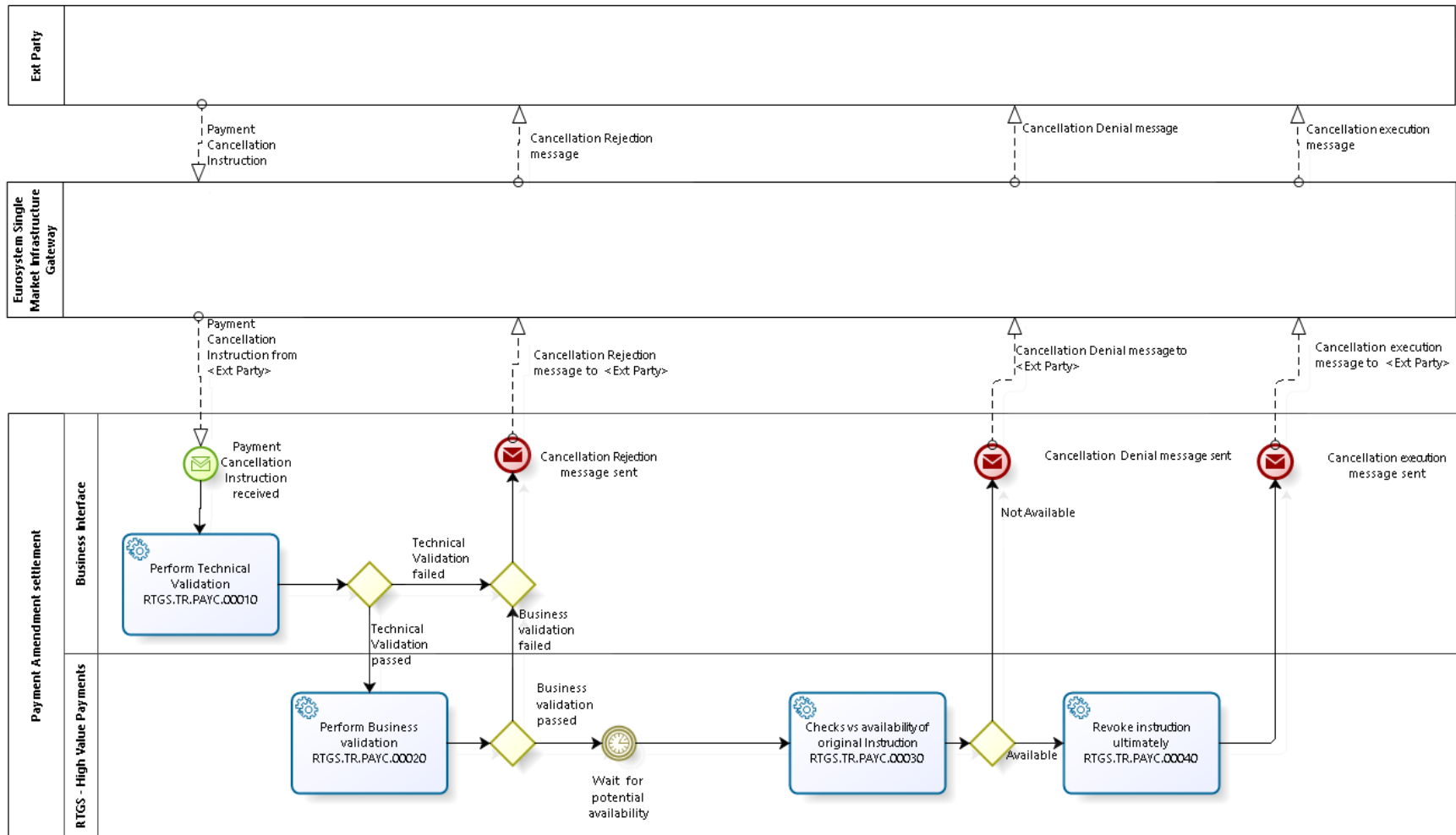
1.4.1 Business Process Model

Figure 4 - Business Process Model: Queue Management/ Payment/Transaction Order Cancellation

1.4.2   User Requirements

1.4.2.1   TECHNICAL VALIDATION - RTGS.TR.PAYC.00010

(see 1.2.2.1)

If the validation failed, rejection notifications with appropriate reason code must be sent to the relevant parties.

1.4.2.2   BUSINESS VALIDATION - RTGS.TR.PAYC.00020

(see 1.2.2.2)

Requirement Id	RTGS.UR.PAYC.00020
Requirement Name	Cancellation of instructions
Task Ref	RTGS.TR.PAYC.00020

Description

The cancellation instruction can be sent by the sending participant, the account owning participant or the respective CB acting on behalf its credit institutions/customers.

If the validation failed, rejection notifications with appropriate reason code must be sent to the relevant parties.

1.4.2.3   CHECKS VS. AVAILABILITY OF ORIGINAL INSTRUCTION - RTGS.TR.PAYC.00030

(see 1.3.2.3)

Requirement Id	RTGS.UR.PAYC.00310
Requirement Name	Status of original payment/transaction order
Task Ref	RTGS.TR.PAYC.00030

Description

The original payment order to be cancelled with the respective instruction has to be in an intermediate state to be eligible for cancellation (e.g. queued). Thus, cancellation of instructions is not feasible if they are already in an end state (e.g. settled, rejected or cancelled).

An instruction eligible for cancellation can either be a Queued Order (see RTGS.TR.PAYT.00040), an order for which the "FROM" time was not reached yet or a warehouse payment.

Instructions which are captured in a optimisation cycle must also be treated as "potentially settled" and are therefore not available to an immediate revocation. For an improved user experience, the check for availability should also wait case-by-case until the optimisation cycle has ended without final settlement and the intermediate state has been reached again.

1.4.2.4   REVOKE INSTRUCTION ULTIMATELY - RTGS.TR.PAYC.00040

The original payment order will be cancelled according to the valid Payment Cancellation Instruction.