T2/T2S CONSOLIDATION

USER REQUIREMENTS DOCUMENT

FOR

FUTURE RTGS (RTGS)

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T2/T2S Consolidation
User Requirements
Future RTGS (RTGS)

EUROPEAN CENTRAL BANK
EUROSYSTEM

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1 HIGH VALUE PAYMENTS SETTLEMENT (HVP)

1.1 OVERVIEW

1.1.1 Context Diagram
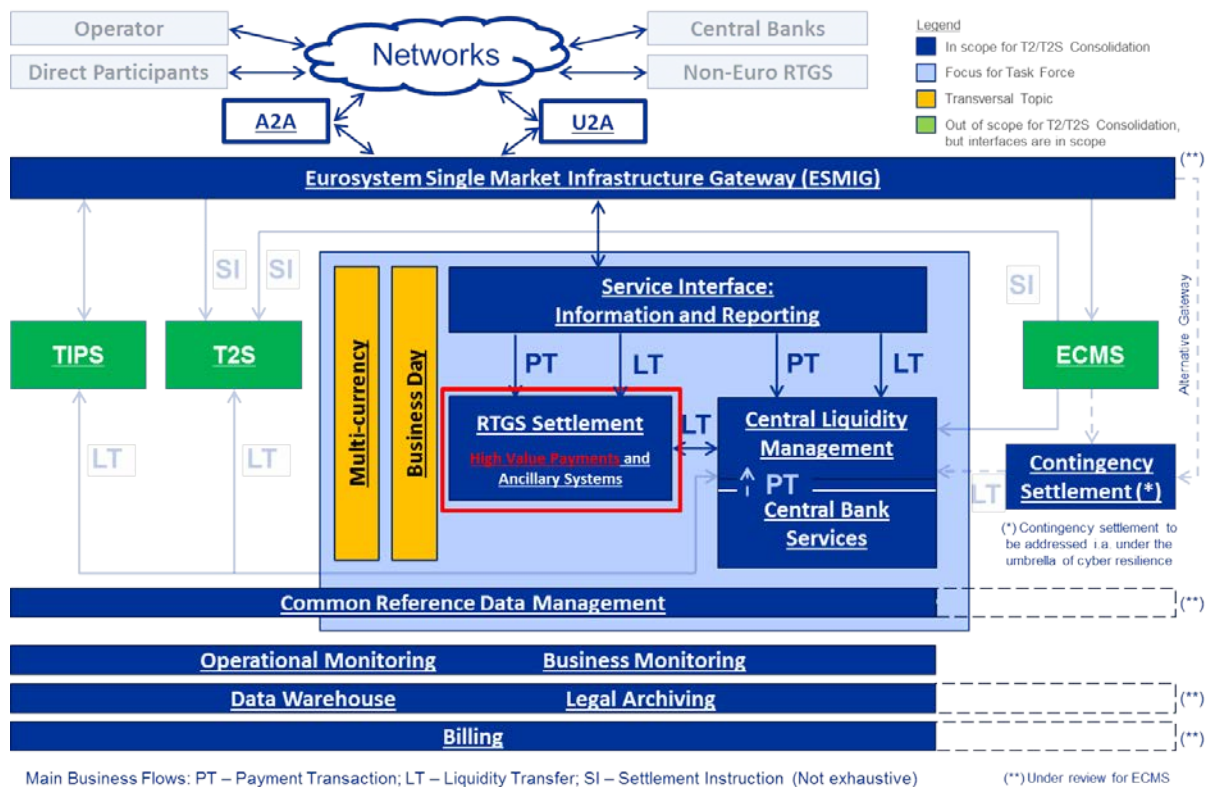
Figure 1: Context diagram for High Value Payments Settlement

This section describes the services offered for High Value Payments (HVP). The RTGS for High Value Payments is in charge of processing payment orders on the participants RTGS Dedicated Cash Accounts (DCA).

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

For details on the account structure used in the RTGS Services, please refer to the User Requirements Document for Central Liquidity Management.

This document does not define the channels through which the interaction with the system has to take place, i.e. no channel - whether it is A2A or U2A - is excluded for now. The description of the processes generic as all processes could possibly be provided in both U2A and A2A modes.

1.1.2   Business Processes

Business Process Name	BP Reference	Business Process Description
Payment Order Processing	RTGS.BP.HVP.PAYT	Processing of a payment order, which can be: • A credit transfer; • A direct debit; or • A mandated payment. The payment order types listed above can also be warehoused or processed as a back-up payment
Queue Management/Payment Order Amendment	RTGS.BP.HVP.PAYA	Amendment of a payment order originally submitted before with respect to a predefined set of interventions. Including Queue Management.
Queue Management/Payment Order Cancellation	RTGS.BP.HVP.PAYC	Cancellation of a payment order originally submitted before. Including Queue Management.
Liquidity Reservation	RTGS.BP.HVP.LIQR	Execution of a Liquidity Reservation (increase and decrease).
Intra-RTGS Liquidity Transfer	RTGS.BP.HVP.LIQT	Intra-RTGS liquidity transfer for the settlement of a liquidity transfer between RTGS DCAs (any RTGS DCA or RTGS AS DCA) of the same participant

Table 1: Business Processes for High Value Payments

1.2 PAYMENT ORDER PROCESSING

Business Process Ref: RTGS.BP.HVP.PAYT

1.2.1 Business Process Model
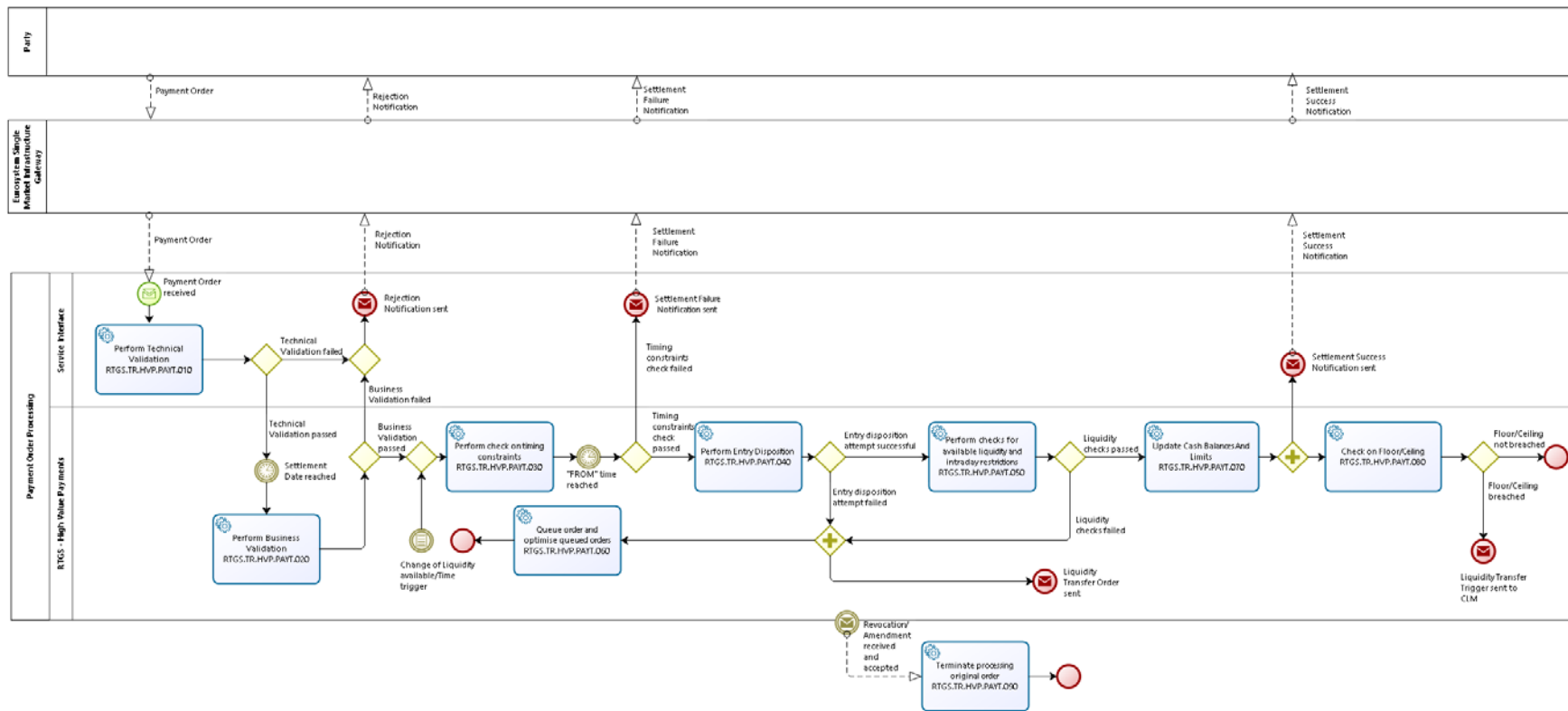
Business Process Model 1: Payment Order Processing

1.2.2   Process Overview

Process goal:

▶ This business process describes the processing of a payment order. An RTGS participant will initiate the process by sending of the respective message containing a payment order to the RTGS Services, which will process the payment order. If the message content is either invalid or would result in reference data checks to fail, it will be rejected and a rejection notification will be sent to the sender. If the message content is valid and 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 timing, e.g. on the execution time reached. If either of these checks fails, the core settlement operation may result in a failure and an alert or a settlement failure notification is sent to the sender. Furthermore, there will be checks on blocked accounts/participants. If these are not passed (i.e., one of the accounts / participants involved is blocked), the payment order will be earmarked and its processing suspended (until possible approval/rejection by the CB or continuation after unblocking). Additionally, the core settlement operation also includes provision checks on available liquidity on the balances involved, limits possibly breached, liquidity reservations/segregation possibly over-exploited and specific offsetting checks. If, on the one hand, these provision checks fail and all the aforementioned checks succeeded, the payment order will be queued for a re-attempt for settlement. The queue will then be dissolved through offsetting with new incoming liquidity and optimisation algorithms, payment order amendment (e.g. change order in queue) or through payment order cancellation or through time-induced rejection (e.g. end of day, "REJECT 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 payment order on the debit and credit accounts involved. In that case, the platform can optionally send a settlement success notification to the sender. All in all, the sender will receive - as long as it does not send additional instructions affecting the settlement of the original payment order- only one notification related to the payment order from the platform through push-mode: either a rejection, or a failure, or a cancellation, or a success notification.

▶ The settlement process described here is as generic as possible, i.e. the description tries to capture most part of the requirements imposed by the different RTGS services involved on the platform (including High Value Payments and Ancillary Systems). Main features of the settlement process can be found here, whereas discrepancies to and specifics for Ancillary System settlement can be found in the respective chapter on Ancillary Systems.

Process context:

▶ This generic process is valid for all types of payment orders.

Pre-conditions:

▶ Respective privileges have been granted to the initiating participant

Time constraints:

▶ The processing has to be completed until the end of day

Expected results:

The RTGS services shall either

▶ Settle the payment order or

▶ Queue the payment order or

▶ Reject/Cancel the payment order.

Triggers:

▶ This process is triggered by a request from a participant/Central Bank sending the payment order.

Sub-processes:

▶ None

1.2.3 User Requirements

1.2.3.1 TECHNICAL VALIDATION

Task Ref: **RTGS.TR.HVP.PAYT.010**

Id	RTGS.UR.HVP.PAYT.010.010
Name	Technical Validation - Syntax/Schema checks
Description	The RTGS Services shall parse the message and perform a field level validation - e.g. on correct data type, size. The RTGS Services shall check whether all mandatory fields are populated actually. If the validation failed, rejection notification with appropriate reason code must be sent to the relevant parties (depending on the channel, a proper message in A2A mode or an error message on the screen in U2A mode).

1.2.3.2 BUSINESS VALIDATION

Task Ref: **RTGS.TR.HVP.PAYT.020**

Id	RTGS.UR.HVP.PAYT.020.010
Name	Business Validation - Process specific authorisation checks
Description	The RTGS Services shall ensure that the sender of a payment order can be: • The owner of the account to be debited; • The owner of the account to be credited (in case of a direct debit and if there is a contractual arrangement between creditor and debtor to do so); • A third party which is neither debtor nor creditor (in case of a mandated payment or if there is a contractual arrangement between the third party and both creditor and debtor to do so, e.g., an Ancillary System); or • A Central Bank acting on behalf a credit institution. The check has to be performed as soon as the message has passed the technical validation, in particular, before the intended settlement date.

Id	RTGS.UR.HVP.PAYT.020.020
Name	Business Validation - Check on intended Settlement date
Description	The RTGS service shall only accept a payment order that specifies a value date that is not later than five business days from the business day on which the RTGS service received the payment order. Nonetheless, the RTGS Services shall perform the authorisation checks described above as soon as the message has passed the technical validation, in particular, before the intended settlement date.

Once the intended settlement date is reached, the RTGS Services will send the payment order automatically and immediately to the business validation step described below.

On the contrary, the RTGS Services will send non-warehoused payment orders having passed all the checks described above, immediately to the business validation step described below.

The RTGS Services will perform the checks described below in one step in order to capture all the possible breaches; the checks therefore must not stop after the first breach occurring, if there could be further breaches in the subsequent checks. If the validation failed overall, the RTGS Services must send rejection notifications with appropriate reason codes for all breaches which occurred to the sender.

Id	RTGS.UR.HVP.PAYT.020.030
Name	Business Validation - Payment type specific checks
Description	The RTGS Services shall check consistency versus a defined set of rules which depend on the message type. Customer payments will have to pass specific checks, whereas interbank payments will have to pass other, different checks.

Id	RTGS.UR.HVP.PAYT.020.040
Name	Business Validation - White list check
Description	The RTGS Services shall check if the debited account is on the white list for High value payments of the credited account. If not, the order will be rejected.

Id	RTGS.UR.HVP.PAYT.020.050
Name	Business Validation - field and reference data checks
Description	The RTGS services shall perform the following field and reference data checks: • Field value validation - codes are valid, domain values are within allowed range; • Cross-field validation - e.g., currency of the accounts involved same as amount currency etc.; and • Referential Integrity checks - Checks vs database to ensure that an object either does exist, or doesn't exist (as appropriate to the process being performed).

Id	RTGS.UR.HVP.PAYT.020.060
Name	Business Validation - duplicate checks
Description	The RTGS services shall perform the following checks: • Duplication checks

1.2.3.3 CHECK ON TIMING CONSTRAINTS

Task Ref: **RTGS.TR.HVP.PAYT.030**

Id	RTGS.UR.HVP.PAYT.030.010
Name	From Time
Description	The RTGS Services shall ensure that a payment order can only be submitted to settlement if its "From Time" - if indicated - is reached.

The payment order may specify an earliest time at which the service shall submit the payment for settlement. When the RTGS Services checks the eligibility of a payment order for settlement, then it shall verify whether the current date and time is greater than or equal to the earliest time for settlement that the payment order specifies.

Id	RTGS.UR.HVP.PAYT.030.020
Name	Reject Time and To Time
Description	The RTGS Services shall ensure that a payment order can only be submitted to settlement if its "Reject Time" - if indicated - is not yet reached. Otherwise, it will be rejected.
	15 min before the indicated Reject Time and Till time and without successful settlement yet, the RTGS services shall send out a warning notification to the party to be debited on an optional basis.

The payment order may specify a latest time until which the service has to submit the payment for settlement. When the RTGS Services checks the eligibility of a payment order for settlement, then it shall verify whether the current date and time is less than or equal to the latest time for settlement that the payment order specifies.

Id	RTGS.UR.HVP.PAYT.030.030
Name	End of Day - specific cut-off times
Description	The RTGS Services shall ensure that a new payment order can only be submitted to settlement if the relevant cut-off time is not yet reached. The RTGS Services have to settle:
	• New customer payments until a predefined customer payment cut-off time;
	• New interbank payments until another predefined, different interbank payment cut-off time; and
	• All new payments until the cut-off time which depends on the currency.

Id	RTGS.UR.HVP.PAYT.030.040
Name	End of Day - revocation of queued orders
Description	The RTGS Services shall ensure that a queued payment order can only be settled if the relevant cut-off time is not yet reached. The RTGS services shall cancel: • Queued customer payments not yet settled until a predefined customer payment cut-off time; • Queued interbank payments not yet settled until another predefined, different interbank payment cut-off time; and • All queued payments not yet settled until the cut-off time which depends on the currency.

1.2.3.4   PERFORM ENTRY DISPOSITION

Task Ref: RTGS.TR.HVP.PAYT.040

Through this activity, the RTGS Services will check whether the payment order settlement can be attempted. That is possible only if no queued payment order of the same priority or higher exists. There are two exceptions to this rule:

▶ Normal payment (so called "bypass principle" for normal payments, which means that the submission time for normal payment is meaningless); and

▶ Offsetting bringing additional liquidity to the debited account.

Id	RTGS.UR.HVP.PAYT.040.010
Name	Priority classification
Description	The RTGS Services shall process payments according to their priority classification. The service shall support three priority classes: • Highly Urgent (HU) • Urgent (U) • Normal (N) If no priority class is selected, The RTGS Services shall handle payments as normal payments.

Id	RTGS.UR.HVP.PAYT.040.020
Name	Conditions for settlement attempt of highly urgent and urgent payments
Description	The RTGS Services shall ensure that a highly urgent or urgent payment can - apart from the exception described below - be submitted to settlement only if no payment with a higher or the same priority is queued on the same account to be debited. The RTGS Services shall use the FIFO principle based on submission time stamp to sequence.

Id	RTGS.UR.HVP.PAYT.040.030
Name	Conditions for settlement attempt of normal payments - so called "bypass principle" for normal payments
Description	The RTGS Services shall ensure that a normal payment can - apart from the exception described below - be submitted to settlement only if no payment with a higher priority is queued on the same account to be debited.

Note: This means that the submission time for normal payment is meaningless.

Id	RTGS.UR.HVP.PAYT.040.040
Name	Exception for settlement attempt – offsetting with liquidity increase
Description	Even if the conditions described above are not fulfilled, the RTGS Services shall nevertheless attempt settlement for the payment if bilateral offsetting between the debited and credited accounts brings additional liquidity to the debited account. In case this optimisation feature does not improve the debited participant liquidity, the RTGS Services shall queue the payment order.

Id	RTGS.UR.HVP.PAYT.040.050
Name	Offsetting for settlement attempt
Description	When the RTGS Services have submitted a payment order to settlement, offsetting is required in order to reduce the liquidity needed for its settlement, in any case. The RTGS Services can select other payments together with the payment submitted to settlement if those former are: • Payments on top of the receiver's queue ("offsetting position 1"); and • Payments not on top of the receiver's queue, but bringing liquidity to the receiver ("extended offsetting").

1.2.3.5   PERFORM CHECKS FOR AVAILABLE LIQUIDITY AND BLOCKED ACCOUNTS

Task Ref: RTGS.TR.HVP.PAYT.050

The RTGS Services shall settle a payment order only when it fulfils all of the following conditions:

▶   The debit account is not blocked for debit.

▶   The credit account is not blocked for credit.

▶   The party whose account is subject to the credit is not blocked.

▶   The party whose account is subject to the debit is not blocked.

▶   The bilateral or multilateral limits are not breached for normal payments.

▶   The balance is sufficient.

  Note: For a EURO-CB, this check is not relevant since a EURO-CB account can be negative. For a non-CB party, the credit line is managed within CLM, so the balance on the debit account cannot be negative.

▶   The reservation is sufficient:

  ▪   Two reservations are available : one for highly urgent (HU) payments, and one for urgent (U) payments;

  ▪   At the start of day, reservations are set according to the standing orders, and up to the available balance. The amount that cannot be reserved is called "pending value" and is queued. Following any incoming credit, the pending value is updated and the "defined value" (i.e. the reserved amount minus the related debits) of the related reservation is increased;

  ▪   After each debit, the "defined value" of the related reservation is updated

  ▪   The condition for drawing liquidity depends on the priority of the payment. As described hereafter, a payment can draw liquidity from its own reservation and lower level reservations.

Id	RTGS.UR.HVP.PAYT.050.010
Name	Blocked accounts validation
Description	The RTGS services shall check whether the credited accounts are eligible (i.e. not blocked) for being credited and debited accounts are eligible for debiting. If the check fails, the RTGS Services shall earmark the payment order and shall - for the time being - take it out of the processing. The payment order can be re-released or rejected through authorisation by the Central Bank of the blocked account.

Id	RTGS.UR.HVP.PAYT.050.020
Name	Blocked parties validation
Description	The RTGS services shall check whether the credited parties are eligible (i.e. not blocked) for being credited and debited parties are eligible for debiting. If the check fails, the RTGS Services shall earmark the payment order and shall -for the time being- take it out of the processing. The payment order can be re-released or rejected through authorisation by the Central Bank of the blocked party.

Id	RTGS.UR.HVP.PAYT.050.030
Name	Limit check
Description	The RTGS Services shall perform a check toward bilateral and multilateral limits, only for normal payments.
	First, the RTGS Services shall check whether a bilateral limit exists between the debited and the credited participant. In case the amount of the normal payment is less than the free bilateral limit position, the check is positive. If the check fails, the RTGS Services shall queue the order.
	In case no bilateral limit is defined, the RTGS Services shall check the multilateral limit. In case the amount of the normal payment is less than the free multilateral limit position, the check is positive. If the check fails, the RTGS Services shall queue the order.

Id	RTGS.UR.HVP.PAYT.050.040
Name	Balance check for highly urgent payments
Description	The RTGS Services shall ensure that a highly urgent payment will, if any, draw liquidity from:

1. The HU reservation;

2. if the latter is not enough, from the non-reserved liquidity (balance of the account minus the HU and U reservations); and

3. if the latter is not enough, the U reservation

In case not enough liquidity is available, the RTGS Services shall queue the payment and send a liquidity transfer order.

Id	RTGS.UR.HVP.PAYT.050.050
Name	Balance check for urgent payments
Description	The RTGS Services shall ensure that a urgent payment will, if any, draw liquidity from:

1. The U reservation

2. If not enough, from the non-reserved liquidity (balance of the account minus the HU and U reservations)

In case not enough liquidity is available, the RTGS Services shall queue the payment and send a liquidity transfer order.

Id	RTGS.UR.HVP.PAYT.050.060
Name	Balance check for normal payments
Description	The RTGS Services shall ensure that a normal payment will, if any, draw liquidity from the non-reserved liquidity (balance of the account minus the HU and U reservations)

In case not enough liquidity is available, the RTGS Services shall queue the payment and send a liquidity transfer order. |

1.2.3.6 QUEUE PAYMENT ORDER AND OPTIMISE QUEUED PAYMENT ORDERS

Task Ref: RTGS.TR.HVP.PAYT.060

If the entry disposition fails, this activity includes the identification of the related queue where the payment order is to be located

Id	RTGS.UR.HVP.PAYT.060.010
Name	Identification of the queue
Description	The RTGS Services shall manage queued payments according to the priority of the payment: • Highly urgent queue; • Urgent queue; and • Normal queue

Id	RTGS.UR.HVP.PAYT.060.020
Name	Order in the queues
Description	The RTGS Services shall ensure that the payment orders are ordered -by default- according to the submission time, i.e. FIFO.

Note: This default order may be changed through amendment/cancellation of queued payment orders (see queue management processes).

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 offsetting, 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). Optimisation is designed in a way to provide liquidity-saving features.

Id	RTGS.UR.HVP.PAYT.060.030
Name	Optimisation objectives
Description	The RTGS Services shall reduce the stock of unsettled payments and minimise the needed liquidity through optimisation. The constraints described before in the entry disposition (order in the queues, bypass principle for normal payments, offsetting) need to be applied strictly.

1.2.3.7   BOOKING

Task Ref: RTGS.TR.HVP.PAYT.070

1.2.3.7.1   Update Cash Balances and Limit

Id	RTGS.UR.HVP.PAYT.070.010
Name	Update cash balance - Booking on a gross basis
Description	The RTGS Services shall post each and every payment order on a gross basis. This is without prejudice to the use of offsetting effects in the provision check when the RTGS Services submit several payment orders together for settlement and they settle simultaneously on a gross basis within one legal and logical second.

Id	RTGS.UR.HVP.PAYT.070.020
Name	Update reservation - Debiting highly urgent payment
Description	For each debiting Highly Urgent payment, the RTGS Services shall update the reservations according to the steps of the check: 1. The available amount within the HU reservation is updated; 2. In case the amount in the HU reservation is not enough, and that the non-reserved liquidity for normal payments is not enough neither, the remaining amount is deduced from the U reservation

Id	RTGS.UR.HVP.PAYT.070.030
Name	Update reservation - Debiting urgent payment
Description	For each debiting urgent payment, the RTGS Services shall update the U reservation according to the available amount within the U reservation.

Id	RTGS.UR.HVP.PAYT.070.040
Name	Update pending reservation
Description	In case of pending reservation, the RTGS Services shall reduce the pending value in case of a crediting payment bringing liquidity to a party, first the pending HU reservation and then the pending U reservation, by the same amount.

Id	RTGS.UR.HVP.PAYT.070.050
Name	Update limit in case of debit
Description	The RTGS Services shall, for each normal payment debiting an account, decrease the free bilateral or multilateral limit by the same amount

Id	RTGS.UR.HVP.PAYT.070.060
Name	Update limit in case of credit
Description	The RTGS services shall, for each payment (whatever its priority), increase the free bilateral or multilateral limit.

At the start of day, limits are set according to the standing orders (so called "defined limit"), and are updated all along the business day after each relevant credit and debit (so called "free limit position")

Id	RTGS.UR.HVP.PAYT.070.070
Name	Update - All-or-non basis
Description	The RTGS Services shall perform all of the specified updates above in one transaction on an all-or-none basis.

Id	RTGS.UR.HVP.PAYT.070.080
Name	Exclusive control over the settlement
Description	The RTGS services shall ensure that no credit or debit can take place on the cash accounts without being processed by the settlement process.

This requirement will prevent concurrency of different settlement processes for the same units of liquidity.

Id	RTGS.UR.HVP.PAYT.070.090
Name	Exclusive control over the update
Description	The RTGS services shall ensure that no update specified above can take place on the cash accounts without being processed by the settlement process.

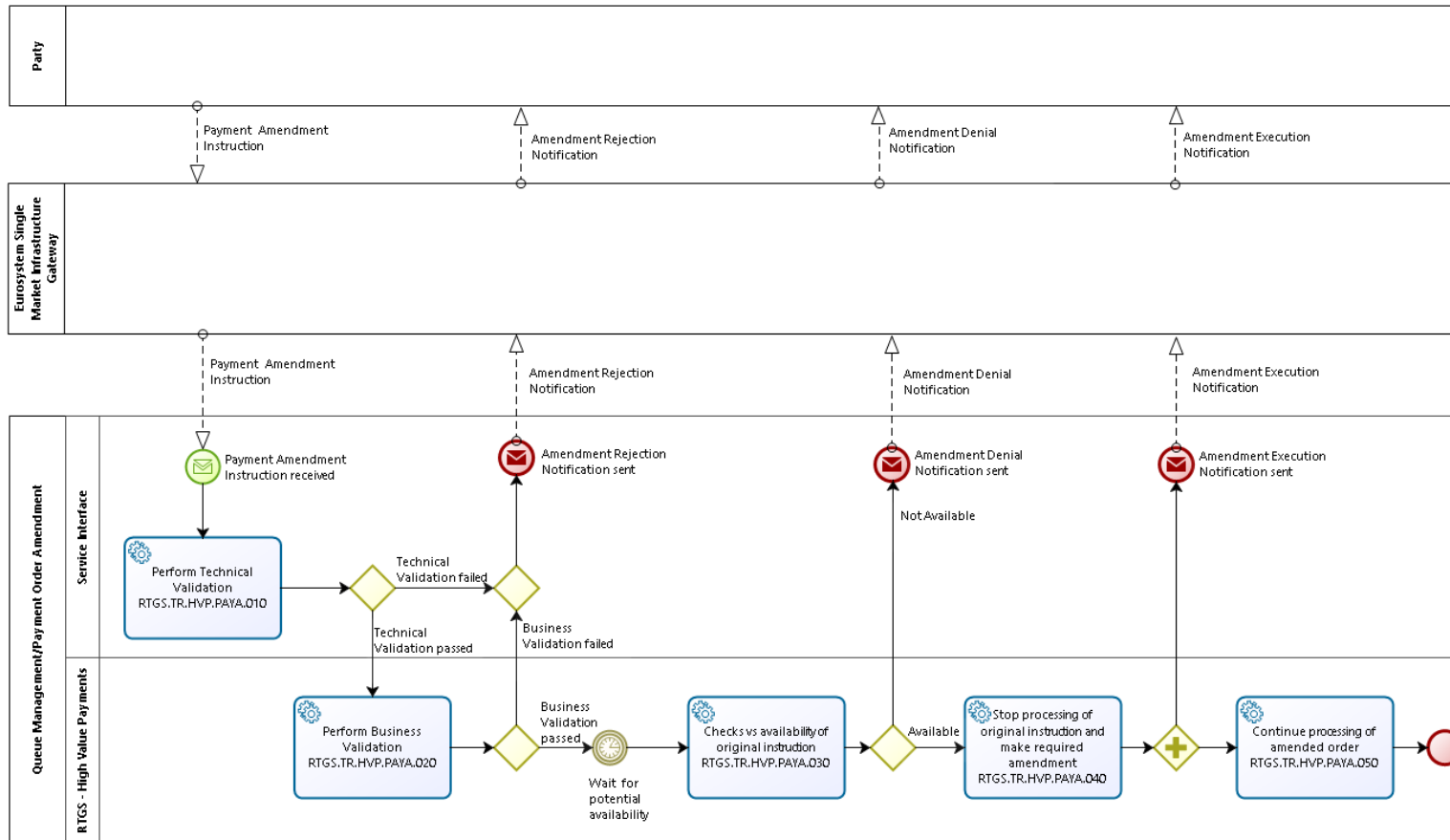| Id	RTGS.UR.HVP.PAYT.070.100
Name	Final booking process
Description	The RTGS Services shall ensure that, once booked on the cash accounts, cash debits and credits must be final, i.e. irrevocable and unconditional.

1.2.3.7.2   Check Balance Floor and Ceiling

Task Ref: RTGS.TR.HVP.PAYT.080

Id	RTGS.UR.HVP.PAYT.080.010
Name	Floor and ceiling
Description	Once the payment is final, the RTGS services shall check whether the account balance is below the floor balance that the account owner defined for the account or is above the ceiling balance that the account owner defined for the account. If either is the case, then the RTGS Services must generate a liquidity transfer request for submission to Central Liquidity Management to adjust the liquidity on the accounts involved so that the balance of the affected account is above the specified floor balance and below the specified ceiling level. The outcome of this final check does not affect the finality of the settlement of the payment.

1.3   QUEUE MANAGEMENT/PAYMENT ORDER AMENDMENT

Business Process Ref: RTGS.BP.HVP.PAYA

1.3.1   Business Process Model

Business Process Model 2: Queue Management/Payment Order Amendment

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1.3.2 Process Overview

Process goal:

▶ This business process describes the amendment of a payment order. The process will be initiated by a 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 reference data checks to fail, it will be rejected and a rejection notification with appropriate reason code will be sent to the sender of the amendment. If the message content is valid and reference data checks have been passed successfully, the platform will perform an amendment attempt of the original payment order the amendment message is referring to. If the amendment operation fails, an amendment denial notification with appropriate reason code is sent to the sender of the amendment. In case the amendment operation succeeds, the platform will amend the original payment accordingly and the platform will send an amendment success notification to both the sender of the amendment and to the initial sender of the original payment order.

▶ The following control options are offered:

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

- Put on top of the respective queue one or several payment orders for re-ordering the queued transaction (triggering their settlement attempt). In case several payment orders were selected they will be put on top of the queue according to their previous order. The default-order is determined by the submission timestamp;

- Bring one or several payment orders to the bottom of the respective queue for re-ordering the queued transaction (possibly triggering the settlement of another payment order). In case several payment orders were selected they will be put on the bottom of the queue according to their previous order. The default-order is determined by the submission timestamp; and

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

Process context:

▶ This generic process is valid for all types of amendments of queued payment orders.

Pre-conditions:

▶ Respective privileges have been granted to the initiating participant

Time constraints:

▶ The processing has to be completed until the end of day

Expected results:

The RTGS services shall either

▶ Reject/Deny the amendment instruction; or

▶ Accept and perform the amendment on the queued payment order;

Triggers:

▶ This process is triggered by a request from a participant/Central Bank sending the amendment instruction.

Sub-processes:

▶ None

1.3.3 User Requirements

1.3.3.1 TECHNICAL VALIDATION

Task Ref: **RTGS.TR.HVP.PAYA.010**

Same as **RTGS.TR.HVP.PAYT.010.**

1.3.3.2 BUSINESS VALIDATION

Task Ref: **RTGS.TR.HVP.PAYA.020**

Id	RTGS.UR.HVP.PAYA.020.010
Name	Business Validation - Process specific authorisation checks
Description	The RTGS Services shall ensure that an amendment of a payment order can be sent: • By the participant owning the account to be debited or • By the participant sending the original instruction or • By the respective CB acting on its behalf. If the validation failed, a rejection notification with appropriate reason code must be sent to the sender of the payment amendment instruction.

Note: For direct debits, the debtor (=receiver) can initiate a reprioritisation and a reordering within the queue.

Additionally, **RTGS.UR.HVP.PAYT.020.050** and **RTGS.UR.HVP.PAYT.020.060** apply.

Id	RTGS.UR.HVP.PAYA.020.020
Name	Amendment of payment orders
Description	The RTGS Services shall check the validity of amendment instructions. Only the following payment amendment instructions are valid: • Change priority (not possible for highly urgent) (This does not change the submission time). • Put on top of the respective queue one or several payment orders for re-ordering the queued transaction (triggering their settlement attempt). In case several payment orders were selected they will be put on top of the queue according to their previous order. The default-order is determined by the submission timestamp. • Bring one or several payment orders to the bottom of the respective queue for re-ordering the queued transaction (possibly triggering the settlement of another payment order). In case several payment orders were selected they will be put on the bottom of the queue according to their previous order. The default-order is determined by the submission timestamp. • Change of execution time (only if it was set before) (possibly triggering the settlement of another payment order). If the validation failed, the RTGS Services shall send a rejection notification with appropriate reason code to the sender of the payment amendment instruction.

1.3.3.3   CHECKS VS. AVAILABILITY OF ORIGINAL PAYMENT ORDER

Task Ref: RTGS.TR.HVP.PAYA.030

Id	RTGS.UR.HVP.PAYA.030.010
Name	Status of original payment order
Description	The original payment order to be amended with the respective payment amendment instruction has to be in an intermediate state (excluding blocked payments) to be eligible for amendment (e.g. queued and not considered in an ongoing optimisation simulation process, an order for which the "FROM" time was not reached yet or a warehouse payment). Thus, amendment of instructions is not feasible if they are already in an end state (e.g. settled, rejected or cancelled). The check for availability should also wait for a short period of time until a currently ongoing optimisation cycle is over, so that the payment orders not settled within this settlement attempt reached again an intermediate state

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" or "REJECT time" as long it has not elapsed and only to a time which has not yet elapsed etc. |

1.3.3.4   STOP PROCESSING OF ORIGINAL PAYMENT ORDER AND MAKE REQUIRED AMENDMENT

Task Ref: RTGS.TR.HVP.PAYA.040

Id	RTGS.UR.HVP.PAYA.040.010
Name	Suspension and Amendment of payment order
Description	The RTGS Services shall suspend the original payment order from the general processing of payment orders before and while the requested amendment takes place. This means that the RTGS Services shall remove a currently queued instruction 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 RTGS Services will amend the original payment order according to the valid payment amendment instruction. |

1.3.3.5   CONTINUE PROCESSING OF AMENDED ORDER

Task Ref: RTGS.TR.HVP.PAYA.050

Id	RTGS.UR.HVP.PAYA.050.010
Name	Continue processing of amended payment order
Description	Depending on the most recent state of the original payment order and the attribute which was amended, the RTGS Services will process the amended payment order through the core settlement operations chain. If the queue order was changed, the RTGS Services will place the amended payment order at the respective position and the usual queue dissolution processes will capture it. If, on the other hand, the priority has changed, the RTGS Services will place the amended payment order in the queue according to the new priority and the original submission time of the original payment order (i.e., the amendment does not result in an update of that relevant timestamp; the position in the new queue is determined as if the original payment order has already been placed to that queue originally).

1.4   QUEUE MANAGEMENT/PAYMENT ORDER CANCELLATION

Business Process Ref: **RTGS.BP.HVP.PAYC**

1.4.1   Business Process Model
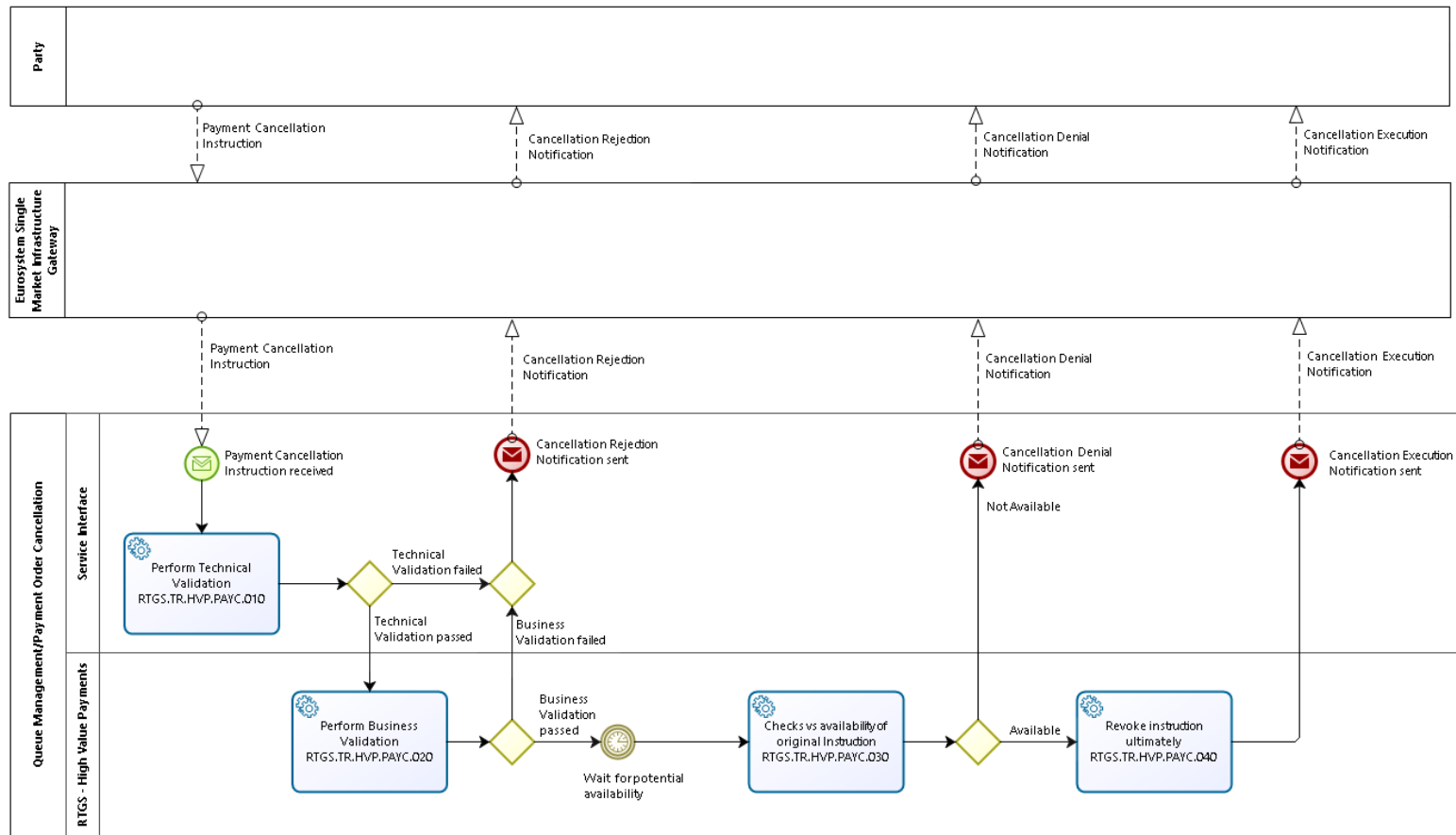
Business Process Model 3: Queue Management/Payment Order Cancellation

1.4.2   Process Overview

Process goal:

▸ This business process describes the cancellation of a payment order. The process will be initiated by a 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 reference data checks to fail, it will be rejected and a rejection notification will be sent to the sender of the cancellation. If the message content is valid and reference data checks have been passed successfully, the platform will perform a cancellation attempt of the original payment order the cancellation message is referring to. If the cancellation operation fails, a cancellation denial notification with appropriate reason code is sent to the sender of the cancellation. In case the cancellation operation succeeds, the platform will cancel the original message and the platform will send a cancel success notification to both the sender of the cancellation and the initial sender of the original payment order.

Process context:

▸ This generic process is valid for all types of cancellations of queued payment orders.

Pre-conditions:

▸ Respective privileges have been granted to the initiating participant

Time constraints:

▸ The processing has to be completed until the end of day

Expected results:

▸ The RTGS services shall either

  ▪ Reject/Deny the cancellation instruction or

  ▪ Accept and perform the cancellation on the queued payment order

Triggers:

▸ This process is triggered by a request from a participant/Central Bank sending the cancellation instruction.

Sub-processes:

▸ None

1.4.3   User Requirements

1.4.3.1   TECHNICAL VALIDATION

Task Ref: **RTGS.TR.HVP.PAYC.010**

Same as **RTGS.TR.HVP.PAYT.010.**

1.4.3.2   BUSINESS VALIDATION

Task Ref: RTGS.TR.HVP.PAYC.020

Id	RTGS.UR.HVP.PAYC.020.010
Name	Business Validation - Process specific authorisation checks
Description	The RTGS Services shall ensure that the cancellation instruction can be sent by the sending participant, the participant owning the account to be credited in the case of a direct debit, or the respective Central Bank acting on behalf its credit institutions/customers.

If the validation failed, the RTGS Services shall send a rejection notification with appropriate reason code to the sender of the cancellation. |

Note: For direct debits, the creditor (=sender) can initiate the revocation.

Additionally, **RTGS.UR.HVP.PAYT.020.050** and **RTGS.UR.HVP.PAYT.020.060** apply.

1.4.3.3   CHECKS VS. AVAILABILITY OF ORIGINAL INSTRUCTION

Task Ref: **RTGS.TR.HVP.PAYC.030**

Id	RTGS.UR.HVP.PAYC.030.010
Name	Status of original payment order
Description	The 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 payment orders is not feasible if they are already in an end state (e.g. settled, rejected or cancelled).
	The RTGS Services must reject the cancellation of a payment order the service has already rejected, settled or cancelled and to which the payment cancellation refers to.
	A payment order eligible for cancellation can either be a queued Payment Order, an order for which the "FROM" time was not reached yet or a warehouse payment.
	Payment orders which are captured in an optimisation cycle must also be treated as "potentially settled" and are therefore not available to an immediate cancellation. The check for availability should also wait for a short period of time until a currently ongoing optimisation cycle is over, so that the payment orders not settled within this settlement attempt reached again an intermediate state.

1.4.3.4   REVOKE INSTRUCTION ULTIMATELY

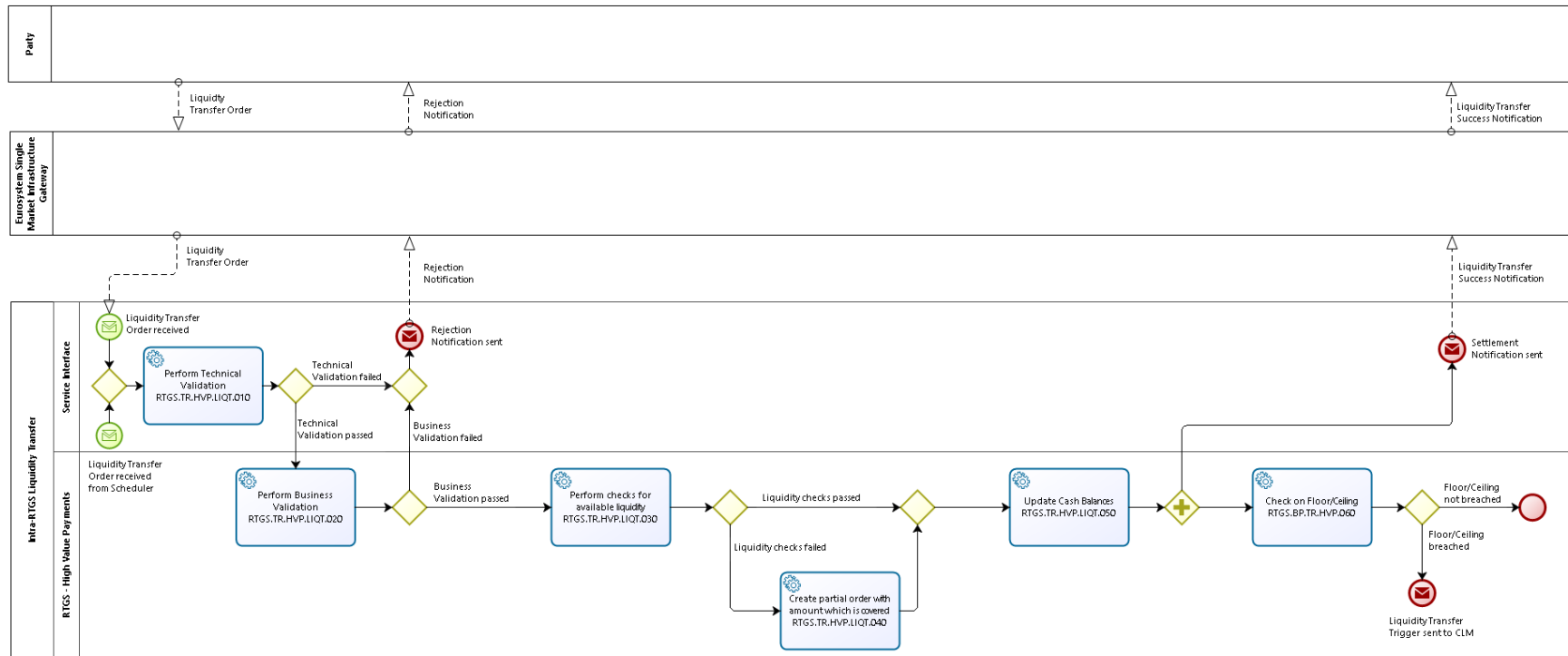**Task Ref:**   **RTGS.TR.HVP.PAYC.040**

Id	RTGS.UR.HVP.PAYC.040.010
Name	Revoke Instruction ultimately
Description	The RTGS Services shall cancel the original payment order according to the valid Payment Cancellation Instruction.

1.5 INTRA-RTGS LIQUIDITY TRANSFER

Business Process Ref: **RTGS.BP.HVP.LIQT**

1.5.1 Business Process Model

Business Process Model 4: Intra-RTGS Liquidity Transfer

1.5.2   Process Overview

Process goal:

▶ This business process describes the processing of an intra-RTGS liquidity transfer request from an AS participant's RTGS DCA to another RTGS DCA (e.g. from an AS participant's RTGS HVP DCA to its RTGS AS DCA and vice versa). Standing Order Liquidity Transfers, Immediate Liquidity Transfers and Predefined Liquidity Transfers are covered by this business process. The process will be initiated by either the RTGS participant itself or by the AS on the participants' behalf or by the CB on the participants' behalf via sending the respective liquidity transfer to the RTGS service. The RTGS Services will process the liquidity transfer. If the liquidity transfer content is either invalid or would result in reference data checks to fail, it will be rejected and a rejection notification will be sent to the sender (depending on the channel, a proper message in A2A mode or an error message on the screen in U2A mode). If the liquidity transfer content is valid and certain reference data checks have been passed, the RTGS service will attempt to transfer (part of) the liquidity amount requested to the account referred to. In case the intra-RTGS liquidity transfer (partly) succeeds, the RTGS service will transfer (part of) the amount requested and the RTGS service will send a (partly) transfer success notification to the participants involved (in case the participant opted for it).

▶ Transfer of liquidity from a RTGS DCA to another RTGS DCA, e.g.:

  ▪ Transfer of liquidity from AS participant's RTGS HVP DCA to its RTGS AS DCA

  ▪ Transfer of liquidity from AS participant's RTGS AS DCA to its RTGS HVP DCA

Process context:

▶ This generic process is valid for all types of intra-RTGS liquidity transfers.

Pre-conditions:

I.   Both RTGS DCAs exist

II.   Respective privileges have been granted to the initiating participant

Time constraints:

▶ The processing has to be completed until the end of day

Expected results:

▶ Liquidity successfully transferred

Triggers:

▶ Liquidity Transfer Order (via A2A or U2A)

▶ Time-based event (for pre-defined order)

Sub-processes:

▶ None

1.5.3 User Requirements

1.5.3.1 PERFORM TECHNICAL VALIDATION

Task Ref: **RTGS.TR.HVP.LIQT.010**

Same as **RTGS.TR.HVP.PAYT.010.**

1.5.3.2 PERFORM BUSINESS VALIDATION

Task Ref: **RTGS.TR.HVP.LIQT.020**

The checks described below will be performed in one step in order to capture all the possible breaches; the checks therefore must not stop after the first breach occurring, if there could be further breaches in the subsequent checks. If the validation failed overall, a rejection notification with appropriate reason codes for all breaches which occurred must be sent to the sender.

Id	RTGS.UR.HVP.LIQT.020.010
Name	Business Validation - Process specific authorisation checks
Description	The RTGS services shall perform service specific authorisation checks. A request for a liquidity transfer from the participant's RTGS HVP DCA to the RTGS AS DCA can be sent by the AS, the AS on the participant's behalf or the respective CB acting on behalf its participants/AS. As for the cross-border scenario (i.e. RTGS HVP DCA and dedicated RTGS AS DCA can be owned by participants in different banking communities), the CB acting on behalf is the one holding the account to be debited in its books. The request for a liquidity transfer can also be triggered by the scheduler in the case of standing orders. The request for a liquidity retransfer from the RTGS AS DCA to the participant's RTGS HVP DCA can be sent by the participant, AS or the respective CB acting on behalf of its AS or triggered by a predefined order set up by the AS or by the participant.

Id	RTGS.UR.HVP.LIQT.020.020
Name	Business Validation - White list check
Description	The RTGS Services shall check if the sending account is on the white list for Liquidity transfers of the receiving account. If not, the order will be rejected.

Additionally, **RTGS.UR.HVP.PAYT.020.050** and **RTGS.UR.HVP.PAYT.020.060** apply.

1.5.3.3   PERFORM CHECKS FOR AVAILABLE LIQUIDITY

Task Ref: **RTGS.TR.HVP.LIQT.030**

Id	RTGS.UR.HVP.LIQT.030.010
Name	Check vs. amount to be transferred
Description	The RTGS services shall perform checks versus the amount to be transferred. The liquidity available covers the requested liquidity transfer amount. In case of lack of liquidity the usual rules for partial execution apply (cf Table "Liquidity Transfer Types" in the section on Ancillary Systems).

1.5.3.4   CREATE PARTIAL REQUEST WITH AN AMOUNT WHICH IS COVERED

Task Ref: **RTGS.TR.HVP.LIQT.040**

Id	RTGS.UR.HVP.LIQT.040.010
Name	Partial Request
Description	If the liquidity transfer is initiated either by an AS on its participant's' behalf or by an automatic trigger from the scheduler, the RTGS Services shall settle the liquidity transfer partially. For several standing orders, in case the sum of all standing orders for intra-RTGS liquidity transfers of the participant to be settled at the same event is larger than the available liquidity; the RTGS Services shall reduce all respective standing orders in a pro-rata mode.

1.5.3.5 UPDATE CASH BALANCES

Task Reference   **RTGS.TR.HVP.LIQT.050**

| Id	RTGS.UR.HVP.LIQT.050.010
Name	Update Cash Balances
Description	The RTGS services shall book the liquidity transfer finally and irrevocably on the two RTGS accounts and shall update the defined value. The RTGS Services shall send a (partly) success notification to the sending party and to the owner of the debited account.

1.5.3.6 CHECK ON FLOOR/CEILING

Task Reference   **RTGS.TR.HVP.LIQT.060**

Id	RTGS.UR.HVP.LIQT.060.010
Name	Check on Floor/Ceiling
Description	If certain floor or ceiling amounts are breached on the RTGS HVP DCA or on the RTGS AS DCA, the RTGS Services shall trigger a liquidity transfer.

1.6 LIQUIDITY RESERVATION

Business Process Ref: **RTGS.BP.HVP.LIQR**

1.6.1 Business Process Model
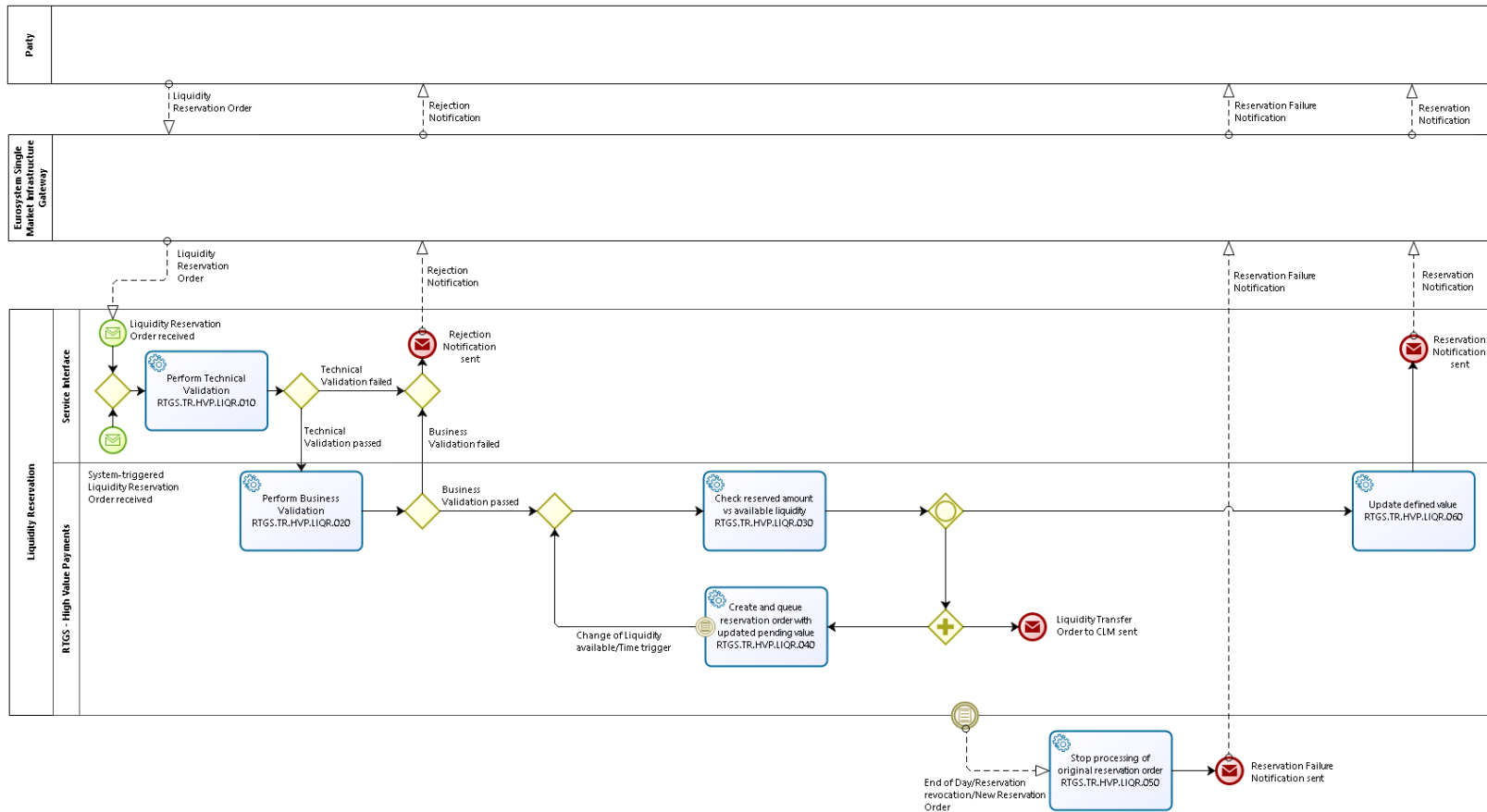
Business Process Model 5: Liquidity Reservation

1.6.2   Process Overview

Process goal:

▸   This business process describes the processing of a request to reserve liquidity. The initiation of this process takes place through the execution of a start-of-day standing order to reserve liquidity or through the receipt of a liquidity reservation request from the account owner or another entity that the account owner has authorised to act on its behalf.

▸   The service performs a technical validation of the liquidity reservation request and, if successful, a subsequent business validation of the liquidity reservation request. The service shall send a rejection if either the technical validation or the business validation fails. If the service completes both the technical validation and the business validations without identifying any errors, then the service will attempt to reserve the requested amount on the account referred.

▸   In case the reservation operation (partly) succeeds, the platform will reserve (part of) the amount requested and the platform will send a (partly) reservation success notice to the sender of the request and to the account owner.

▸   The amount that cannot be reserved is called "pending value" and is queued. Following any incoming credit, the pending value is updated and the "defined value" (i.e. the reserved amount minus the related debits) of the related reservation is increased.

Process context:

▸   This generic process is valid for all types of liquidity reservations.

Pre-conditions:

▸   The RTGS DCA exists

▸   Respective privileges have been granted to the initiating participant

Time constraints:

▸   The processing has to be completed until the end of day

Expected results:

▸   Liquidity successfully reserved

Triggers:

▸   A Liqudity Reservation Order (via A2A or U2A)

▸   Time-based event (for pre-defined order)

Sub-processes:

▸   None

1.6.3   User Requirements

1.6.3.1   TECHNICAL VALIDATION

Task Ref: **RTGS.TR.HVP.LIQR.010**

Same as **RTGS.TR.HVP.PAYT.010.**

1.6.3.2   BUSINESS VALIDATION

Task Ref: **RTGS.TR.HVP.LIQR.020**

Id	RTGS.UR.HVP.LIQR.020.010
Name	Business Validation - Process specific authorisation checks
Description	The RTGS Services shall ensure that the reservation request can be sent by the sending participant, the participant owning the account to be debited or the respective CB acting on behalf its credit institutions/customers. The request can also come from a scheduler in case of a standing order.
	If the validation failed, a rejection notification with appropriate reason code must be sent to the sender.

Additionally, **RTGS.UR.HVP.PAYT.020.050** and **RTGS.UR.HVP.PAYT.020.060** apply.

1.6.3.3   CHECK RESERVED AMOUNT VS AVAILABLE LIQUIDITY

Task Ref: **RTGS.TR.HVP.LIQR.030**

Id	RTGS.UR.HVP.LIQR.030.010
Name	Check vs. amount to be pre-empted
Description	The RTGS Services shall check if the liquidity available covers the requested reservation amount. According to the check, the RTGS Services shall create a partial reservation request with the amount which can be immediately covered. The RTGS Services shall reserve this covered amount for the purpose indicated immediately.

Note: The amount which is surpassing the available liquidity coverage is called "pending value".

1.6.3.4   CREATE AND QUEUE RESERVATION ORDER WITH UPDATED PENDING VALUE

Task Ref: **RTGS.TR.HVP.LIQR.040**

Id	RTGS.UR.HVP.LIQR.040.010
Name	Create and queue reservation
Description	The RTGS Services will queue the remaining (reduced) pending part and will process it in an event-oriented way. In case of an increase of the available liquidity an asynchronous resolving process attempts to process the pending reservation order. Even if the increase of available liquidity is not sufficient for the complete processing, the RTGS Services will process the pending reservation partly (the RTGS Services will decrease the pending reservation and increase the defined value).

Id	RTGS.UR.HVP.LIQR.040.020
Name	Interventions on queued reservations
Description	The RTGS Services shall allow for interventions on pending reservation requests: New reservation requests related to the participant's RTGS account will either increase the pending amount, or decrease it.

Note: Due to the asynchronous processing incoming liquidity might be blocked and used by a parallel booking process before the attempt to increase the reservation has been performed.

1.6.3.5   STOP PROCESSING OF ORIGINAL RESERVATION ORDER

Task Ref: **RTGS.TR.HVP.LIQR.050**

Id	RTGS.UR.HVP.LIQR.050.010
Name	Stop Processing
Description	Upon reception of End-of-day notification, a Reservation revocation or a New Reservation Order, the RTGS Services shall stop to process of the original reservation order.

1.6.3.6   UPDATE DEFINED VALUE

Task Ref: **RTGS.TR.HVP.LIQR.060**

Id	RTGS.UR.HVP.LIQR.060.010
Name	Update defined value
Description	The RTGS Services shall book the reservations finally and irrevocably.

2 RTGS SERVICES FOR ANCILLARY SYSTEMS (AS)

2.1 OVERVIEW
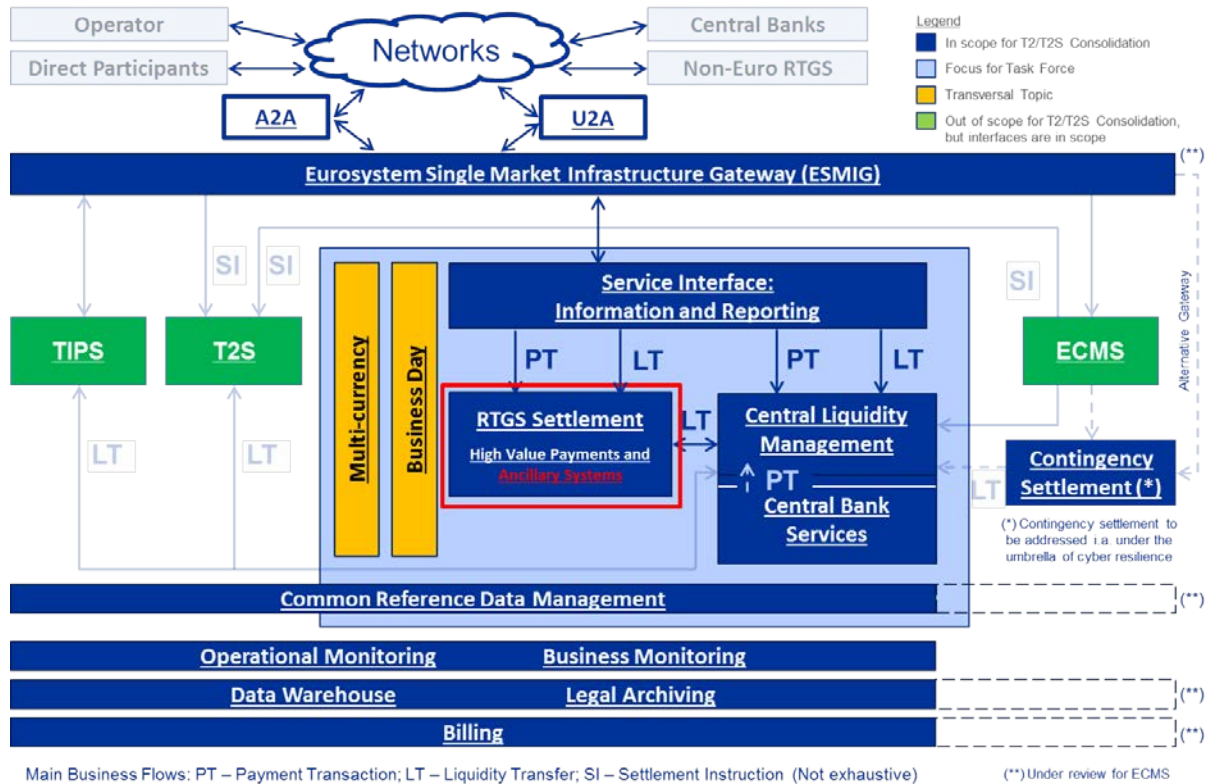
2.1.1 Context Diagram

Figure 2: Context diagram for RTGS Services for Ancillary Systems

This section describes the RTGS Services for Ancillary Systems (AS). It includes *Ancillary System Liquidity Transfer Order, Ancillary System Standing Order for Liquidity Transfer and Ancillary System Transaction Processing.* The RTGS services are in charge of processing transactions orders on the ASs participants' accounts.

For details on the account structure used in the RTGS Services for ASs, please refer to the section of Central Liquidity Management.

2.1.2 Business Process

Business Process Name	BP Reference	Business Process Description
Ancillary System Transaction Processing	RTGS.BP.AS.AST	Settlement of an ASs transaction.

Table 2: Business Process for Ancillary Systems

2.1.3 Account types for Ancillary Systems Business

The following diagram depicts a generic account constellation for an AS participant (Party A), e.g. a settlement bank with various types of settlement businesses and with accounts opened in the book of one Central Bank:
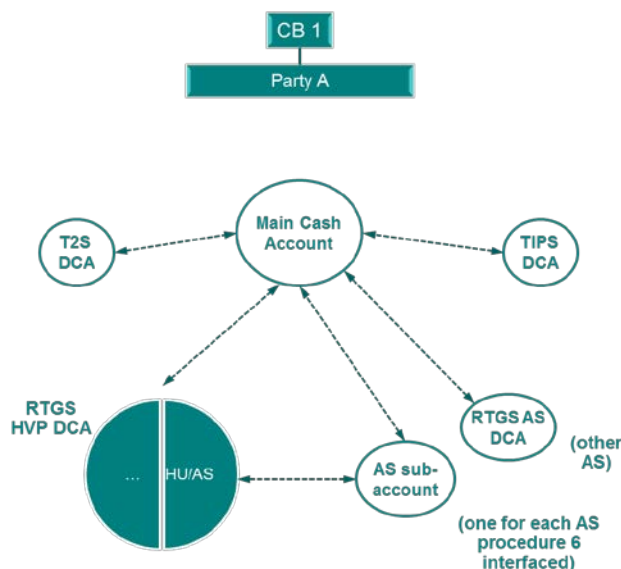

Figure 3: Generic account constellation for an AS participant

Besides DCAs for securities and instant payments settlement, it has a RTGS DCA for High Value Payments (with reserved amounts for Highly-Urgent AS related transactions) and two accounts for AS transactions: one account (for AS procedure "Settlement on dedicated Liquidity Accounts (interfaced)") as a sub-account of the RTGS HVP DCA, the second account (for other AS) as an RTGS AS DCA. RTGS HVP DCA and RTGS AS DCA are the same account types from a technical point of view. The two types differ in how they are used.

Account type	Ownership
RTGS HVP DCA	Party A
RTGS AS DCA	Party A
RTGS HVP DCA sub-account	Party A
Guarantee Funds Account	Guarantor, CB or the AS

Table 3: Account Types and their ownership

The settlement itself will be executed either on technical accounts owned by the AS or on RTGS HVP DCAs held by the AS. These technical accounts can have a non-zero balance at the end-of day.

2.1.3.1   SEPARATION OF LIQUIDITY

Account type	Settlement Procedure	Shared among several AS?
RTGS HVP DCA	• direct settlement in the former TARGET2 PM account (e.g., Continuous Linked Settlement payments); • "Real-Time Settlement"; • "Bilateral Settlement"; • "Standard Multilateral Settlement"; • "Simultaneous Multilateral Settlement"; and • "Settlement on dedicated Liquidity Accounts (real-time)"[1]	• Y
RTGS AS DCA	• direct settlement in the former TARGET2 PM account (e.g., Continuous Linked Settlement payments); • "Real-Time Settlement"; • "Bilateral Settlement"; • "Standard Multilateral Settlement"; and • "Simultaneous Multilateral Settlement"	• Y
RTGS HVP DCA sub-account	• "Settlement on dedicated Liquidity Accounts (interfaced)"	• N

Table 4: Separation of liquidity for different settlement procedures

---

[1] Liquidity for "Settlement on dedicated Liquidity Accounts (real-time)" can be transferred from the RTGS HVP DCA to a technical account either held by the AS or the CB for prefunding purposes.

2.1.3.2   SOURCES OF LIQUIDITY

The following table provides a summary on the liquidity used for settlement and the respective accounts the liquidity stems from:

Liquidity source	Usage	Complementation	Segregation of liquidity
RTGS HVP DCA	Usage of reservations for HU payment.	Possibly complemented by other reservations/liquidity as outlined in the reservations section on HVP settlement on the RTGS HVP DCA.	No further separation by AS procedure/AS possible.
RTGS AS DCA	Usage of liquidity transferred from the RTGS HVP DCA to the RTGS AS DCA.	By default, no automated complementation is set up. Complementation can be set up by the participant through pre-defined liquidity transfers.	Separation by AS procedure/AS possible.
RTGS HVP DCA sub-account	Usage of liquidity transferred from the RTGS HVP DCA to the RTGS HVP DCA sub-account.	By default, no automated complementation is set up. Complementation can be set up by the participant through pre-defined liquidity transfers.	Separation by AS procedure/AS possible.
Guarantee Funds	Furthermore, a guarantee funds mechanism can be used for multilateral settlement procedures.	-	-

Table 5: Liquidity usage for AS settlement

2.1.4 Liquidity Transfer Types for Ancillary System Business

In general, the following types of liquidity transfers are foreseen:

Liquidity Transfer Type	Initiator	Settlement	Amount
Immediate Liquidity Transfer	AS participant	Only fully settable, if possible	Given in instruction
	AS (on behalf)	Partially settable, if necessary	Given in instruction
	CB (on behalf)	Only fully settable, if possible	Given in instruction
Predefined Liquidity Transfer	AS participant	Partially settable, if necessary	Given in instruction
	AS (on behalf)	Partially settable, if necessary	Can be variable (e.g. sweep back all)
Standing Order Liquidity Transfer	AS participant	Partially settable, if necessary	Given in instruction
	AS (on behalf)	Partially settable, if necessary	Can be variable (e.g. sweep back all)

Table 6: Liquidity Transfer Types

2.1.5   Ancillary System Settlement Procedures

The following former TARGET2 settlement procedures will be supported by the single platform:

Procedure	Description
Direct settlement in the former TARGET2 PM account (e.g., Continuous Linked Settlement payments).	Usual real-time gross-mode settlement of bilateral high value payments.
Real-Time Settlement	Usual real-time gross-mode settlement of bilateral high value payments.
Bilateral Settlement	Usual real-time gross-mode settlement of bilateral high value payments.
Settlement on dedicated Liquidity Accounts (real-time)	Usual real-time gross-mode settlement of bilateral high value payments.
Settlement on dedicated Liquidity Accounts (interfaced)	Usual real-time gross-mode settlement of bilateral high value payments.
Standard Multilateral settlement	"Debits first", i.e. first all the debits are executed, then all the credits. If one of the transactions fails, the others, probably already executed, are unwound.
Simultaneous multilateral settlement	"All or Nothing", i.e. debits and credits are simultaneously executed. If one of the transactions fails, all the others aren't executed neither.

Table 7: Settlement Procedures

2.1.5.1 SETTLEMENT ON DEDICATED LIQUIDITY ACCOUNTS (INTERFACED) ON THE CONSOLIDATED PLATFORM

The features listed below ensure that the TARGET2 procedure known as "Settlement on dedicated Liquidity Accounts (interfaced)" can be almost fully mapped to the consolidated RTGS service:

Feature	Proposal for mapping
Dedicated Liquidity	Either as reservation on RTGS HVP DCA, or as liquidity on sub-account ("for AS1"), or as liquidity on a proper DCA ("for AS2")
Start of procedure	Regular liquidity transfers (e.g. from RTGS HVP DCA to AS sub-account) at these business events can be set up through standing orders.
Blocking/control of liquidity by the AS	Whenever the AS using this interfaced procedure starts a cycle, the liquidity on the sub-accounts involved will be controlled/blocked by the AS. The control is given back to the participant through the end of cycle.
Liquidity increase during cycle initiated by the participant	Always possible, either through a liquidity transfer or a payment.
Increase of Liquidity during cycle through Auto-collateralisation/redemption and coupon payments	Will not be supported anymore.

Table 8: Features for "Settlement on dedicated Liquidity Accounts (interfaced)"

2.1.5.2 SETTLEMENT ON DEDICATED LIQUIDITY ACCOUNTS (REAL-TIME) ON THE CONSOLIDATED PLATFORM

In addition to the features described for Settlement on dedicated Liquidity Accounts (interfaced)", the features listed below ensure that the TARGET2 procedure known as "Settlement on dedicated Liquidity Accounts (real-time)" can be almost fully mapped to the consolidated RTGS service:

Feature	Proposal for mapping
Cross-AS settlement	Can be realised as highly urgent payments between two different technical AS accounts owned by ACHs. The whitelist functionality ensures that only authorised ACHs can send Cross-AS payments to a specific account.

Table 9: Features for "Settlement on dedicated Liquidity Accounts (real-time)"

2.1.6   Contingency Measures for Ancillary Systems

Contingency measures for AS cover cases of unavailability of an AS or its communication infrastructure with the consolidated future RTGS service. In case of contingency, the AS can provide instructions which the relevant CBs can execute on behalf of the AS. These instructions can be:

▶   Payments from one participant to another participant;

▶   Payments from the AS technical account /RTGS HVP DCA owned by the AS to a participant's account;

▶   Liquidity transfers from the RTGS HVP DCA to an AS sub-account/ RTGS AS DCA of a participant and vice versa;

▶   Liquidity transfers at certain business events (e.g., start/end of procedure);

▶   Start of cycle/end of cycle messages and

▶   Settlement files of the AS to be uploaded into the RTGS service.

Modification of credit lines will not be supported anymore.

2.2 ANCILLARY SYSTEM TRANSACTION PROCESSING

Business Process Ref: RTGS.BP.AS.AST

2.2.1 Business Process Model
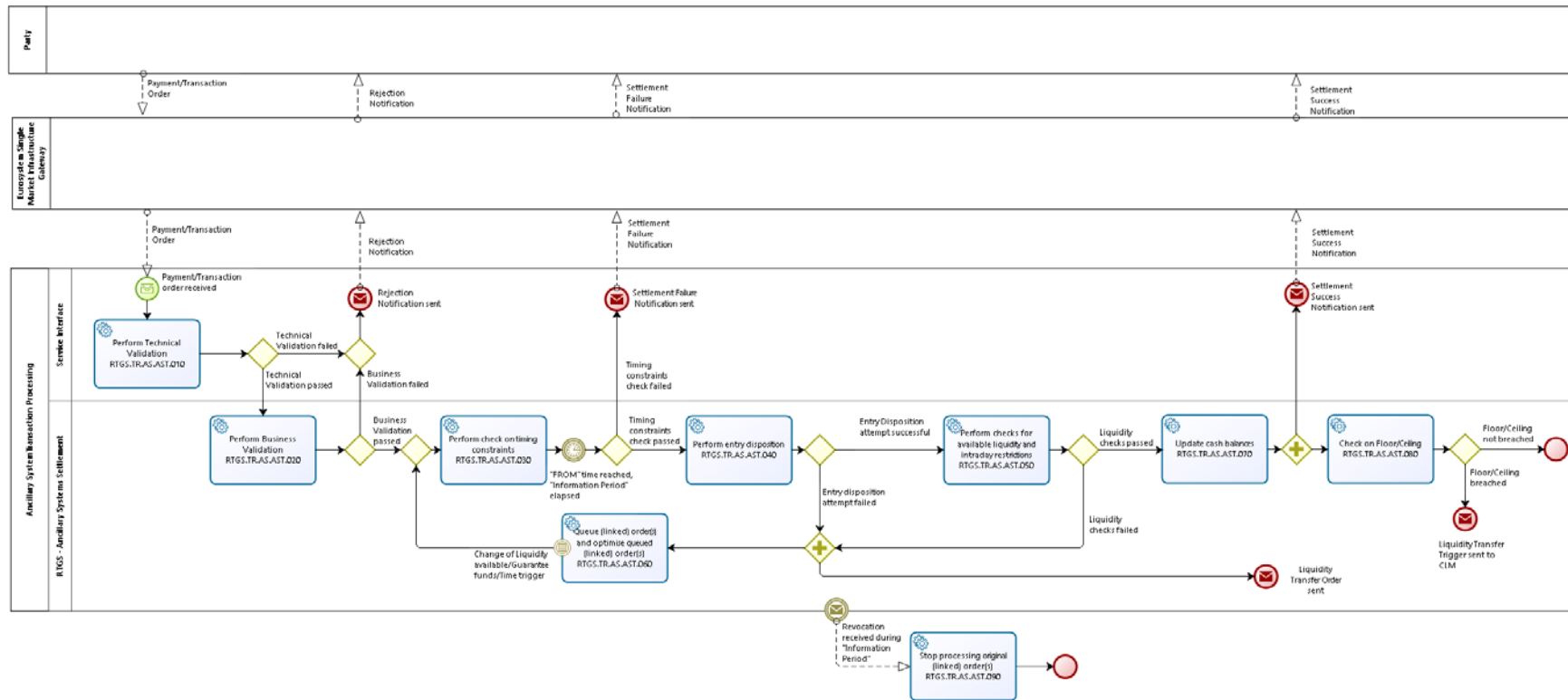
Business Process Model 6: Ancillary System Transaction Processing

2.2.2 Process Overview

Process goal:

► The Ancillary System Transaction Processing is similar to the High Value Payments processing, meaning that the processing of AS transactions has many similarities with to the processing of HVP payments, except the specificities described hereafter.

► Specificities:

- The process will be initiated by the ancillary system participating in the platform, its participants or the CB acting on behalf via sending of the respective request message to the platform;

- The consideration of possible links between different AS transaction orders sent in one "batch";

- The usage of guarantee funds.

- The information period.

- The settlement period.

- The common monitoring of different AS transaction orders sent in one "batch".

Process context:

► This generic process is valid for all types of Ancillary Systems Transactions.

Pre-conditions:

► The RTGS DCAs exist

► Respective privileges have been granted to the initiating participant/Ancillary System

Time constraints:

► The processing has to be completed until the end of day/end of night-time settlement

Expected results:

The RTGS services have either

► Rejected the AS transaction settlement;

► Performed the AS transaction settlement; or

► Queued the AS transactions.

Triggers:

► This process is triggered by a valid request from the Ancillary System/Participant/Central Bank

Sub-processes:

▶ None

2.2.3 User Requirements

Request messages from AS can be sent in "batch" mode, meaning that they have to be processed with possible links (e.g. for multilateral settlement purposes or for common monitoring). The request message handling and processing within the various steps in the different system components should cope with those specific links, i.e. they must not be broken up.

2.2.3.1   PERFORM TECHNICAL VALIDATION

Task Ref: RTGS.TR.AS.AST.010

Same as **RTGS.TR.HVP.PAYT.010**.

2.2.3.2   PERFORM BUSINESS VALIDATION

Task Ref: RTGS.TR.AS.AST.020

Id	RTGS.UR.AS.AST.020.010
Name	Business Validation - Process specific authorisation checks
Description	The RTGS Services shall check if the ancillary system is, indeed, authorised to debit/credit the settlement bank according to a list of settlement banks per Ancillary System.
	If the validation failed, rejection notifications with appropriate reason code must be sent to the relevant parties.

Additionally, **RTGS.TR.HVP.PAYT.020** applies.

2.2.3.3   PERFORM CHECK ON TIMING CONSTRAINTS

Task Ref: **RTGS.TR.AS.AST.030**

Similar to **RTGS.TR.HVP.PAYT.030** with the following additional requirements:

Id	RTGS.UR.AS.AST.030.010
Name	Settlement period/To time
Description	The RTGS services shall consider the following timing constraints with respect to settlement:
	• The "Settlement Period" is a time period set by the sender,
	• Whereas the "Reject Time" is a pre-defined point in time.
	An AS transaction can only be submitted to settlement if it's "Settlement Period" - if indicated - has not yet elapsed / the "Reject Time" is not yet reached. Otherwise, it will be rejected.

Id	RTGS.UR.AS.AST.030.020
Name	Information period
Description	The RTGS services shall consider the following timing constraints with respect to settlement: The "Information Period" is a time period set by the sender.
	An AS transaction can only be submitted to settlement if it's "Information Period" -if indicated- has already elapsed. If no "Information Period" is indicated, no restriction applies in that respect. At the start of the information period, the system will be informing the settlement banks about the upcoming settlement via U2A broadcast.

2.2.3.4   PERFORM ENTRY DISPOSITION

Task Ref: **RTGS.TR.AS.AST.040**

Similar to **RTGS.TR.HVP.PAYT.040**.

The main difference stems from the fact that single AS transactions will be of Highly Urgent priority by default. That means that the entry disposition follows the same pattern for each single AS transaction. Either they are settled immediately or they are allocated to the HU queue. For files of transactions, the links have to be respected in the entry disposition. As for reservations, there will be a special reservation for AS transactions/HU payments in place.

2.2.3.5   PERFORM CHECKS FOR AVAILABLE LIQUIDITY AND INTRADAY RESTRICTIONS

Task Ref: **RTGS.TR.AS.AST.050**

Provision check Ia – Intraday restriction validation

Same as **RTGS.UR.RTGS.PAYT.050.010**

Provision check II/Limit check

As all AS transactions are of highly urgent priority, there is no check against bilateral or multilateral limits.

Provision checks III/Balance checks

Similar to **RTGS.TR.HVP.PAYT.050**

Id	RTGS.UR.AS.AST.050.010
Name	Provision check III - Blocking for "Settlement on dedicated Liquidity Accounts (interfaced)"
Description	The RTGS services shall respect that during the settlement process of settlement procedure "Settlement on dedicated Liquidity Accounts (interfaced)" the sub-account balance is exclusively reserved for the AS settlement in case of a running cycle.

Id	RTGS.UR.AS.AST.050.020
Name	Provision check III - Balance check - First Step
Description	The RTGS services shall consider linkage constraints due to multilateral settlement. For linked transactions, the check has to be successful for all linked transactions involved (possibly at different points in time for the standard multilateral settlement).

Id	RTGS.UR.AS.AST.050.030
Name	Balance check failure - Handling without guarantee funds
Description	If Provision Check III fails for AS transactions, and no guarantee funds mechanism has been envisaged, the RTGS Services shall queue order(s) until the end of the settlement period or End of Day, respectively.

Id	RTGS.UR.AS.AST.050.040
Name	Balance check failure - Handling with guarantee funds
Description	The RTGS services shall consider usage of guarantee funds with respect to settlement:
	If the first balance check fails, in case a guarantee mechanism has been envisaged for linked transactions, a guarantee fund usage request is sent out to the party controlling the guarantee account when the intended settlement period has elapsed/Till Time or End of Day is reached. The request can either be accepted or rejected by the AS. If it was accepted, the guarantee funds will be considered in a second step upon. That means, the accounts to be debited which lacked liquidity in the first step, will be replaced by the guarantee account. If then still one of the various linked transactions cannot be settled, all linked transactions involved will be queued till the end of the settlement period or End of Day, or until revocation by the AS, respectively.

2.2.3.6   QUEUE (LINKED) ORDER(S) AND OPTIMISE QUEUED (LINKED) ORDER(S)

Task Ref: **RTGS.TR.AS.AST.060**

Similar to **RTGS.TR.HVP.PAYT.060**. The main difference is the optimisation for linked transaction described below.

Id	RTGS.UR.AS.AST.060.010
Name	Optimisation for linked transactions
Description	The RTGS services shall consider linkage constraints within optimisation and due to multilateral settlement.
	For linked transactions, the optimisation has to ensure that all linked transactions are processed such that the links are not broken.

2.2.3.7 UPDATE CASH BALANCES

Task Ref: **RTGS.TR.AS.AST.070**

Similar to RTGS.TR.HVP.PAYT.070 with one additional requirement;

Id	RTGS.UR.AS.AST.070.010
Name	Unwinding for linked transactions - standard multilateral settlement
Description	The RTGS services shall consider linkages constraints due to multilateral settlement in case of unsuccessful settlement attempts.
	For the standard multilateral settlement, if one of the debits fails, the others, probably already executed, have to be unwound at the end of the settlement period or whenever the AS revokes the file.

2.2.3.8 CHECK ON FLOOR/CEILING

Task Ref: **RTGS.TR.AS.AST.080**

Same as **RTGS.TR.HVP.PAYT.080.**

T2/T2S Consolidation
User Requirements
Future RTGS (RTGS)

EUROPEAN CENTRAL BANK
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3 NON-FUNCTIONAL REQUIREMENTS FOR HIGH VALUE PAYMENTS SETTLEMENT AND RTGS SERVICES FOR ANCILLARY SYSTEMS

3.1 AVAILABILITY

Id	RTGS.UR.NFR.ALL.010
Name	System Opening Hours for HVP
Description	HVP shall be opened from 02:30-00:30 on TARGET opening days.

Id	RTGS.UR.NFR.ALL.020
Name	System Opening Hours for ASI
Description	The ASI shall be opened from 02:30 to 00:30 on TARGET opening days.

Id	RTGS.UR.NFR.ALL.030
Name	Unplanned Downtime
Description	Unplanned downtime, calculated on a quarterly basis, shall not exceed xxxx hours, equivalent to an availability of xxxx%.

The RTGS services may be subject to incidents or failures, which may cause a temporary and unforeseen interruption of the service. Regardless of the total number of such unplanned interruptions, the overall amount of service unavailability time calculated on a quarterly basis shall not exceed xxxx hours.

Id	RTGS.UR.NFR.ALL.040
Name	Planned Downtime
Description	The RTGS services will provide a maintenance window between 00:30 and 02:30.

On TARGET2 opening days a maintenance window of at max two hours is foreseen for any kind of technical or functional maintenance.

3.2   DISASTER RECOVERY

Id	RTGS.UR.NFR.ALL.050
Name	Recovery Point Objective
Description	The RTGS services shall ensure a recovery point objective value of zero in case of site failures. In case of a loss of a complete region the recovery point objective (RPO) shall not exceed xxxx minutes.

The RPO is a point of consistency to which a user wants to recover or restart the service. It is measured as the amount of time between the moment when the point of consistency was created and the moment when the failure occurred.

The RTGS services ensure synchronous point of consistency creations and, as a consequence, no data loss in case of failures, unless the service can't be restarted in the same region and a failover to the backup-region has to be conducted. In this case a data loss of xxxx minutes will be tolerated.

Id	RTGS.UR.NFR.ALL.060
Name	Recovery Time Objective
Description	The RTGS services shall ensure a recovery time objective value of xxxx hours in case of site failures. In case of a loss of a complete region the recovery time objective (RTO) shall not exceed xxxx hours.

The RTO is the maximum amount of time required for recovery or restart of the service to a specified point of consistency. In case of a site failure, the RTGS services shall ensure maximum time of unavailability of xxxx hours starting from the time when the decision to restart the service is made up to the time the service is restored. In case of a major failure or a regional disaster, the RTGS services shall ensure maximum time of unavailability of xxxx hours starting from the time when the decision to restart the service is made up to the time the service is restored.

3.3   PERFORMANCE REQUIREMENTS

Id	RTGS.UR.NFR.ALL.070
Name	Response Time Goals
Description	The RTGS services shall process xxxx% of the transactions in under xxxx minutes and xxxx% of the transactions in under xxxx minutes.

Id	RTGS.UR.NFR.ALL.080
Name	Peak Workload per second
Description	The RTGS services shall be able to process xxxx transactions per second, enduring the peak load for at least xxxx hours.

Id	RTGS.UR.NFR.ALL.090
Name	Upward Scalability
Description	The RTGS services shall be scalable to handle: • A xxxx% higher workload within xxxx minutes and • xxxx of the workload within xxxx.

In the course of the service's lifecycle the number of transactions to be handled might change due to market changes or adapted business behaviour. To be able to cope with it, the RTGS services shall be able to handle higher throughputs.

Id	RTGS.UR.NFR.ALL.100
Name	No Degradation of Service Level
Description	The RTGS services shall scale linear.

The RTGS services shall scale linear. This means that there shall be no degradation of the response time due to higher workload.

4 USER INTERACTION

The objective of this section is to provide the user requirements related to user interactions covering the usage of U2A or A2A mode. A Graphical User Interface (GUI) would be provided, offering functionalities to access information in U2A mode.

These requirements do not imply any particular consideration with regard to design and the implementation of the actual screens.

4.1 GENERAL USER REQUIREMENTS FOR USER INTERACTION

4.1.1 Query

Id	RTGS.UR.RTGS.UI.ALL.010
Name	Query Audit Trail
Description	All services shall provide the functionality to query the modified data at the attribute level, the user performing the change and the timestamp of the change through U2A and A2A interface.

Id	RTGS.UR.RTGS.UI.ALL.020
Name	Query System time
Description	All services shall provide the functionality to query system time to align the time of a connected application through an application-to-application interface (A2A).

4.1.2 Action

Id	RTGS.UR.RTGS.UI.ALL.030
Name	Confirm/Reject Task(s)
Description	All services shall provide the functionality to confirm/reject task(s) through the U2A and A2A interfaces.

Id	RTGS.UR.RTGS.UI.ALL.040
Name	Act on behalf
Description	All services shall provide the functionality to act on behalf through U2A and A2A interfaces for: • Central Banks, to act on behalf of any party belonging to their banking community; and • The Operator, to act on behalf of any party.

Id	RTGS.UR.RTGS.UI.ALL.050
Name	Access rights
Description	All services shall ensure that a user can only access functionality and data that is allowed by the access rights granted to the user through the Roles and Privileges associated with the user.

Id	RTGS.UR.RTGS.UI.ALL.060
Name	Four-eyes (confirm, revoke, amend)
Description	All services shall provide the functionality to use four-eyes approval, allowing the authoriser to confirm, revoke or amend.

4.2 USER INTERACTION FOR FUTURE RTGS

4.2.1 Query

All described queries in this section shall be provided in U2A and A2A mode unless otherwise stated.

Id	RTGS.UR.RTGS.UI.010
Name	Query payments
Description	The RTGS service shall provide the functionality to query the status and details of all payments on the RTGS DCA. The user shall specify at least one of the following mandatory selection criteria. In addition the query shall allow the user to specify any combination of mandatory or optional selection criteria. The following payment types can by queried: • Payments • Warehoused payments • Liquidity transfers Mandatory selection criteria: • RTGS DCA account number • Owner BIC of RTGS DCA • Entry date or range of date (current business day as default) Optional selection criteria: • Message type • Priority • Debit/Credit • Sender BIC • Receiver BIC • Amount • Priority • Status The query shall return all business attributes of the payments including the processing status.

Id	RTGS.UR.RTGS.UI.020
Name	Query message
Description	The RTGS service shall provide the functionality to query a payment order in xml format. The user shall specify at least one of the following mandatory selection criteria. In addition the query shall allow the user to specify any combination of mandatory or optional selection criteria. Mandatory selection criteria: • RTGS DCA account number • Owner BIC of RTGS DCA • Entry date or range of date (current business day as default) Optional selection criteria: • Message type • Status • Amount • Inbound or outbound • Sender BIC • Receiver BIC The query shall return the message in xml format including the processing status. This query shall only be provided in U2A mode.

Id	RTGS.UR.RTGS.UI.030
Name	Query account balance
Description	The RTGS service shall provide the functionality to query the balance on a RTGS DCA. The user shall specify at least one of the following mandatory selection criteria. In addition the query shall allow the user to specify any combination of mandatory or optional selection criteria. Mandatory selection criteria: • RTGS DCA account number • Owner BIC of RTGS DCA Optional selection criteria: • Entry date or range of date (current business day as default) The query shall return the current account balance and all business attributes of the RTGS DCA.

Id	RTGS.UR.RTGS.UI.040
Name	Query reservations
Description	The RTGS service shall provide the functionality to query all reservations on the RTGS DCA. The user shall specify at least one of the following mandatory selection criteria. Mandatory selection criteria: • Cash Account Number • Owner BIC of RTGS DCA The query shall return all business attributes of the reservations.

Id	RTGS.UR.RTGS.UI.050
Name	Query limits
Description	The RTGS service shall provide the functionality to query all limits (multilateral and bilateral limit) on the RTGS DCA. The user shall specify at least one of the following mandatory selection criteria. Mandatory selection criteria: • Cash Account Number • Owner BIC of RTGS DCA • Party Name The query shall return all business attributes of the limits.

Id	RTGS.UR.RTGS.UI.060
Name	Query payments within one AS file
Description	The RTGS service shall provide the functionality to query information on the payments within one AS file. The user shall specify at least one of the following mandatory selection criteria. In addition the query shall allow the user to specify any combination of mandatory or optional selection criteria. Mandatory selection criteria: • AS BIC Optional selection criteria: • Entry Timestamp • File Reference • Message type • Inbound or outbound message • Sender of message • Receiver of message • Amount of payment • Status of payment • Reference of payment The query shall return all business attributes of the payments (within one AS file) including the processing status.

Id	RTGS.UR.RTGS.UI.070
Name	Query status of one AS file
Description	The RTGS service shall provide the functionality to query the status of one AS file. The user shall specify at least one of the following mandatory selection criteria. In addition the query shall allow the user to specify any combination of mandatory or optional selection criteria.

Mandatory selection criteria:
- AS BIC

Optional selection criteria:
- Entry Timestamp
- File Reference

The query shall return all business attributes of the AS file including the processing status.

Id	RTGS.UR.RTGS.UI.080
Name	Query liquidity on AS Settlement Bank Level
Description	The RTGS service shall provide the functionality for the AS to query information concerning the (non-) availability of funds for the settlement of one AS file. The user shall specify at least one of the following mandatory selection criteria. In addition the query shall allow the user to specify any combination of mandatory or optional selection criteria.

Mandatory selection criteria:
- AS BIC

Optional selection criteria:
- Entry Timestamp
- Entry date or range of date (current business day as default)

The query shall return all business attributes of the AS file including the processing status.

Id	RTGS.UR.RTGS.UI.090
Name	Query liquidity on AS Level
Description	The RTGS service shall provide the functionality for an AS settlement bank to query information concerning the (non-) availability of funds for the settlement of one AS file. The user shall specify at least one of the following mandatory selection criteria. In addition the query shall allow the user to specify any combination of mandatory or optional selection criteria. Mandatory selection criteria: • Party BIC (can be derived from the user's data scope) Optional selection criteria: • Entry Timestamp • Entry date or range of date (current business day as default) The query shall return all business attributes of the AS file including the processing status.

Id	RTGS UR.RTGS.UI.100
Name	Query Broadcast
Description	All User Interaction relevant services shall provide the functionality to query detailed information on broadcasts through U2A and A2A interface. It should be distinguished between normal information provided in pull mode and alert broadcasts information provided in push mode.

Id	RTGS.UR.RTGS.UI.110
Name	Query account statement
Description	The RTGS service shall provide the functionality to query on the Account statement. The user shall specify at least one of the following mandatory selection criteria. In addition the query shall allow the user to specify any combination of mandatory or optional selection criteria.
	Mandatory selection criteria:
	• Cash Account Number
	• Owner BIC of RTGS DCA
	Optional selection criteria:
	• Entry date or range of date (current business day as default)
	The query shall return all business attributes of the account statement.
	This query shall only be provided in U2A mode because the available corresponding A2A report should be used as default. Therefore, it should be checked that one participant is using either the A2A report or the U2A query.

Id	CLM.UR.RTGS.UI.120
Name	Query to request a copy of a Report on Account Statement
Description	The RTGS service shall provide the functionality to request a copy of a Report on Account Statement. The user shall specify at least one of the following mandatory selection criteria.
	Mandatory selection criteria:
	• Cash Account number
	• Owner BIC of RTGS DCA
	Optional selection criteria:
	• Entry date or range of date (current business day as default)

4.2.2 Actions

Id	RTGS.UR.RTGS.UI.130
Name	Change order of payments in a queue
Description	The RTGS service shall provide the functionality to change the order of payments (including warehoused payments) currently queued for settlement through U2A and A2A interface. The change should only be possible for payments not having reached a final status yet.

Id	RTGS.UR.RTGS.UI.140
Name	Modify a payment in a queue
Description	The RTGS service shall provide the functionality to modify the priority and / or the execution time of a payment (including warehoused payments) currently available in the system through U2A and A2A interface. The change should only be possible for payments not having reached a final status yet.

Id	RTGS.UR.RTGS.UI.150
Name	Cancel a payment in a queue
Description	The RTGS service shall provide the functionality to revoke a payment (including warehoused payments) currently available in the system through U2A and A2A interface. The cancellation should only be possible for payments not having reached a final status yet.

Id	RTGS.UR.RTGS.UI.160
Name	Revoke an AS file
Description	The RTGS service shall provide the functionality to revoke an AS file which has not reached a final status yet through U2A and A2A interface.

Id	RTGS.UR.RTGS.UI.170
Name	Create broadcast
Description	The RTGS service shall provide the functionality to create a broadcast message for all or selected groups of participants through U2A and A2A interface.

Id	RTGS.UR.RTGS.UI.180
Name	Create a liquidity transfer
Description	The RTGS service shall provide a functionality to create a liquidity transfer through U2A and A2A interface.

Id	RTGS.UR.RTGS.UI.190
Name	Create a back-up/lump-sum payment
Description	The RTGS service shall provide a functionality to create a back-up / lump-sum payment through U2A interface. This action has to be activated by the CB on participant level.

5 BUSINESS DATA DEFINITIONS

5.1 ENTITIES AND ATTRIBUTES

The following Entities are referred to within the User Requirements Document for Future RTGS but are defined in the User Requirements Document for Shared Services as they are also referred to elsewhere:

▶ Party

▶ Party Name

▶ Party Address

▶ Party Code

▶ Banking Group

▶ Limit

▶ Cash Account

▶ Payment

▶ Liquidity Transfer

▶ Standing Order

▶ Direct Debit Instruction

▶ Reservation

▶ Standing Order for Reservation

▶ Whitelist

▶ Report Subscription

▶ Message Subscription

▶ Scheduled Event

▶ Currency

▶ SWIFT BIC Directory

▶ Service

▶ User

▶ Distinguished Name

▶ Role

▶ Privilege

▶ Access Rights

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