

T2/T2S CONSOLIDATION

USER REQUIREMENTS DOCUMENT

FOR

FUTURE RTGS (RTGS)

| | |
|-----------------|------------|
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1 HIGH VALUE PAYMENTS SETTLEMENT (HVP)

1.1 OVERVIEW

1.1.1 Context Diagram

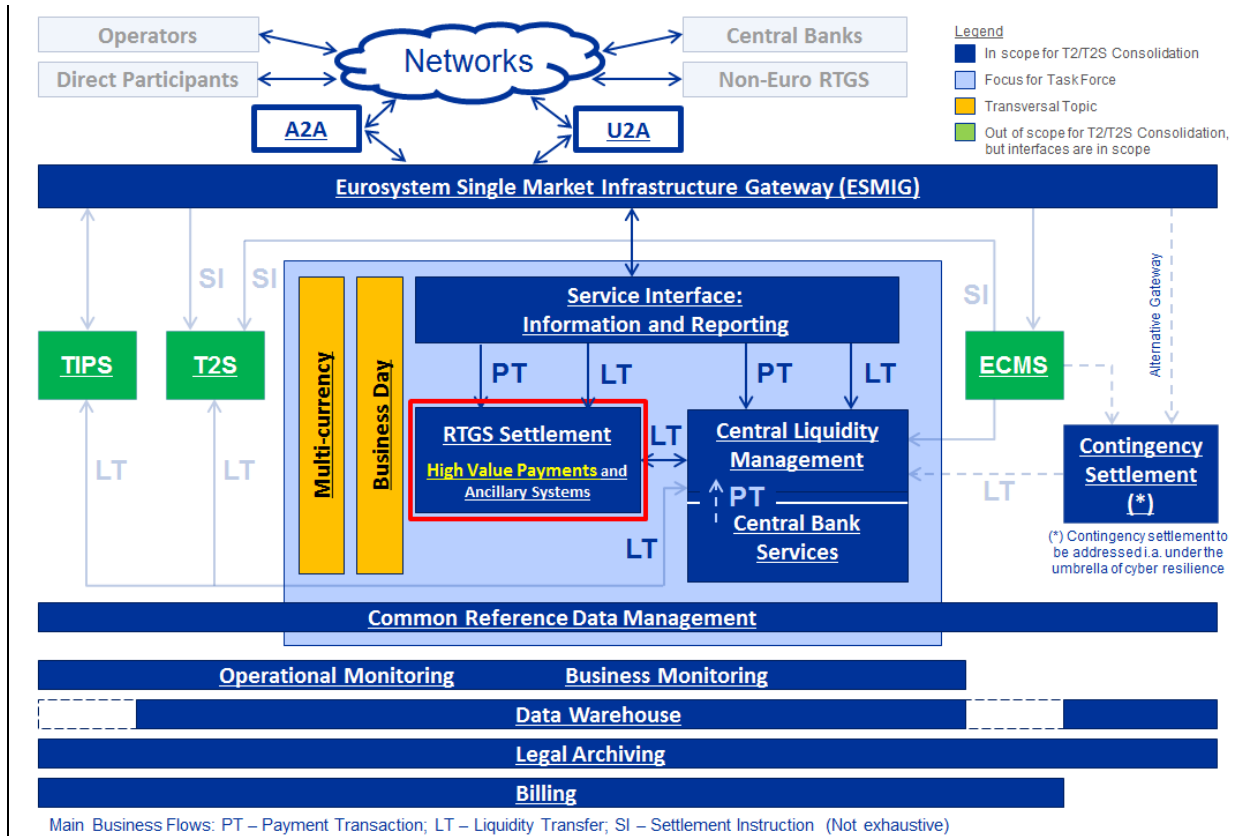


Figure 1: Context diagram for High Value Payments Settlement

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

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

As a general rule, it is intended to keep most features almost unchanged or enhanced compared to ~~T2TARGET2~~. Nevertheless, the introduction of a Central Liquidity Management feature in order to centralise the liquidity management for ~~the future RTGS services~~, T2S and TIPS, and to settle all Central ~~Banks Bank~~ Operations, including ~~the Credit Lines credit line~~ updates, ~~on CLM~~ as well as the migration to ISO20022, will lead to some changes ~~to the current settlement processes for high value payments in TARGET2~~. As a consequence, this URD gives the full picture of all the requirements for ~~the future RTGS services~~. More details will be provided ~~at a later stage~~ during the ~~implementation realisation~~ phase, within the UDFS ~~of the future for~~ RTGS ~~services~~. ~~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 is generic as all processes could possibly be provided in both U2A and A2A modes.~~

~~The description of the processes in this document does not differentiate whether the orders are submitted to the Service in U2A or A2A mode.~~

1.1.2 Business Processes

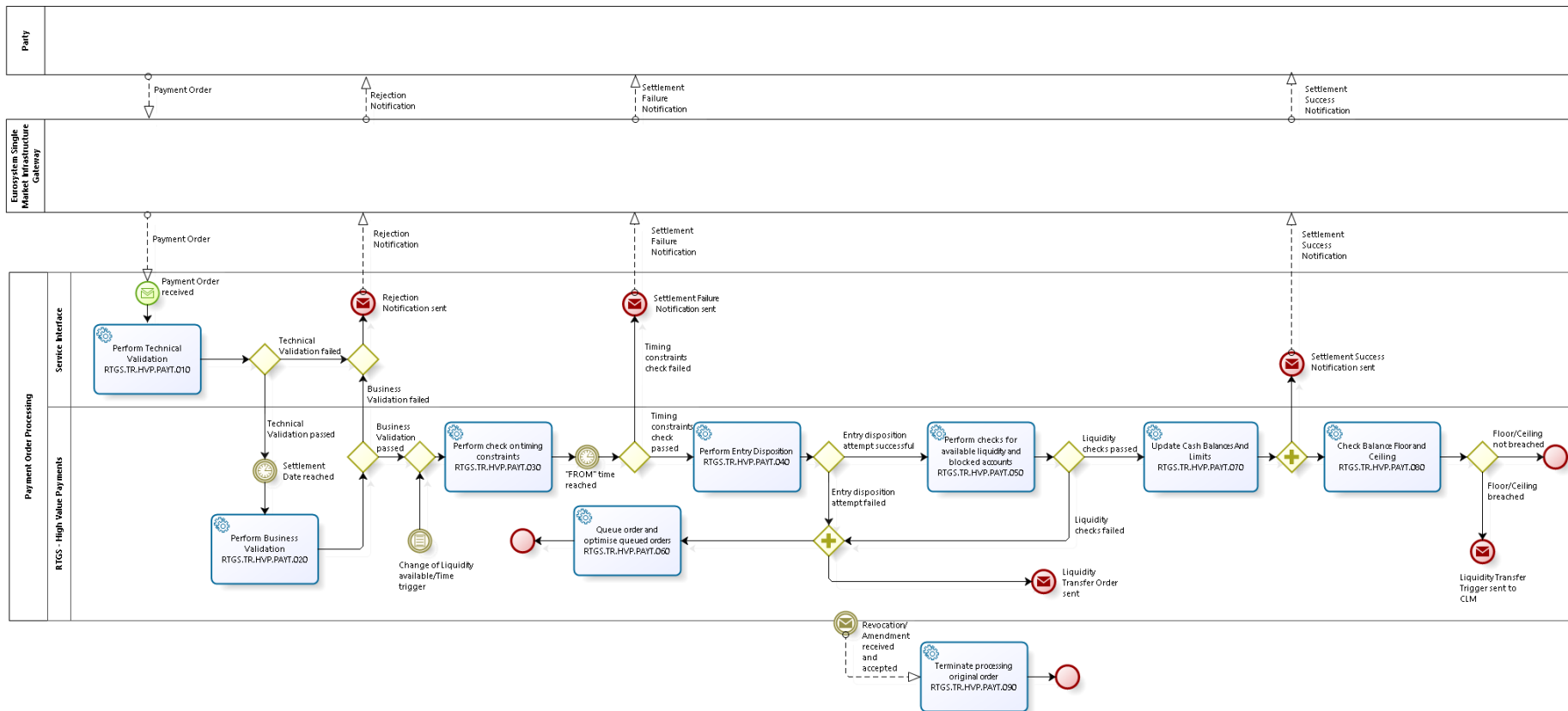
| Business Process Name | BP Reference | Business Process Description |
|--|-------------------|---|
| Payment Order Processing | RTGS.BP.HVP.PAYT | Processing of a payment order, which can be: <ul style="list-style-type: none"> • A credit transfer; or • A direct debit; The credit transfer can also be warehoused or processed as a backup payment |
| Queue Management/Payment Order Amendment | RTGS.BP.HVP.PAYA | Amendment of a payment order originally previously 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 previously submitted before . Including Queue Management. |
| Liquidity Reservation | RTGS.BP.HVP.LIQR | Execution of a Liquidity Reservation <u>liquidity reservation</u> (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 (including Sub-Accounts <u>sub accounts</u>) within the same Liquidity Transfer Group. |
| Process inter-service liquidity transfer order from MCA to DCA - RTGS part | RTGS.BP.HVP.LTRCV | Second part of the CLM process CLM.BP.CLM.LTSEN, and similar to CLM.BP.CLM.LTRCV |
| Process inter-service liquidity transfer order from DCA to MCA - RTGS part | RTGS.BP.HVP.LTSEN | First part of the CLM process CLM.BP.CLM.LTRCV, and similar to CLM.BP.CLM.LTSEN |
| Process liquidity transfer order between two DCAs in different settlement services - RTGS part | RTGS.BP.HVP.LTDCA | This process is the RTGS part of the related CLM process. Within this process, RTGS could be <ul style="list-style-type: none"> - either the sending service, and the process is similar to RTGS.BP.HVP.LTSEN - or the receiving service, and the process is similar to RTGS.BP.HVP.LTRCV |

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~~ fail the reference data checks ~~to fail~~, it will be rejected and a rejection notification will be sent to the sender ~~of the message~~. If the message content is valid and reference data checks have been passed, the ~~service~~Service will perform a series of operations according to the ~~message content~~: ~~of the message~~.

These core settlement operations of a payment order include various checks on timing, e.g. ~~on~~has the ~~predefined latest~~ execution time ~~been~~ reached. ~~If~~As a result of these checks ~~fail~~, the core settlement operation may ~~result in a failure~~not be successful and a settlement failure notification is sent to the sender.

Furthermore, there will be checks on blocked accounts/~~participants~~Parties. If these ~~checks~~ are not passed (i.e., one of the accounts ~~participants~~/Parties 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~~account to be debited, whether any Limits are possibly breached, ~~whether any~~ liquidity reservations/segregation are possibly breached ~~and as well as~~ 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 ~~the order of payments in the~~ queue) or through payment order cancellation or through time-induced rejection (e.g. ~~end of day, "REJECT time"~~start of End of Day process, Reject Time reached). If, on the other hand, these provision checks succeed, the core settlement operation will result in a success and the ~~service~~Service will finally and irrevocably book the payment order on the debit and credit accounts involved. In that case, the ~~service~~Service can optionally send a settlement success notification to the sender ~~of the order~~. All in all, the sender will receive - as long as ~~it does not send~~no additional instructions ~~are sent~~ affecting the settlement of the original payment order - at maximum one notification related to the payment order from the ~~service~~Service through push-mode: either a rejection (negative validation), or a failure (no settlement, e.g. ~~till time~~"Till Time" reached), or a cancellation, or a success notification.

The ~~payment order~~ settlement process described ~~herein this section~~ is as generic as possible, i.e. the description ~~tries to capture most part of the~~aims at capturing the essential user requirements imposed by the different RTGS services ~~(including: High Value Payments and Ancillary Systems)~~. ~~Main. While main~~ features of the settlement process ~~can be found here, whereas are described in this section, the~~ discrepancies ~~to~~with and specifics for ~~settlement of~~ Ancillary System ~~settlement~~transactions can be found in ~~the respective chapter on Ancillary Systems~~section 2 of this User Requirements Document.

Process context:

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

Pre-conditions:

- ▶ ~~Respective~~Appropriate privileges have been granted to the ~~Sender~~sender

Time constraints:

- ▶ The processing has to be executed within the opening hours of HVP (see section 3.4 on Availability of Services in the User Requirement Document for Shared Services / Business Day), i.e. after~~from~~ the opening of the ~~service, and completed~~Service until the ~~end of day (according to End of Day process starts, and outside the maintenance window, taking into account~~ the different cut-~~offs~~offs depending on the message~~payment~~ type)

Expected results:

~~The~~ RTGS ~~services~~ shall either:

- ▶ Settle the payment order ~~or,~~
- ▶ Queue the payment order ~~or,~~
- ▶ Reject (~~in case of negative~~ validation fails) / Cancel the payment order ~~or,~~
- ▶ Send a failure notification for:
 - the Reject Time reached, or
 - the 'not settled' payment order (at the End of ~~the~~ Day revocation, since no failure notification ~~are~~is sent after each unsuccessful settlement attempt), or
- ▶ Send an optional (according to subscription) settlement success notification.

Triggers:

- ▶ This process is triggered by 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.010.005 |
| Name | File management |
| Description | In case <u>Where</u> the messages are sent packaged in a file, the RTGS Services shall check the validity of the file and split it into single messages. Each message should keep track of the original file reference, notably for monitoring purposes. |

| | |
|--------------------|--|
| Id | RTGS.UR.HVP.PAYT.010.010 |
| Name | Technical Validation - Syntax/Schema checks |
| Description | <p>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.</p> <p>If the validation failed, fails, a rejection notification with appropriate reason code must be sent to the relevant parties sender of the message (depending on the <u>submission</u> channel, a proper message in A2A mode or an error message on the screen in U2A mode).</p> |

| | |
|--------------------|---|
| Id | RTGS.UR.HVP.PAYT.010.020 |
| Name | Technical validation - duplicate checks |
| Description | The service Service interface shall ensure that the same message has not already been received on the same business day. |

1.2.3.2 BUSINESS VALIDATION

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

| | |
|--------------------|---|
| Id | RTGS.UR.HVP.PAYT.020.005 |
| Name | Check for duplicate payment order |
| Description | <p>RTGS shall carry out a duplicate submission control for incoming payment orders. This control shall include the following fields:</p> <ul style="list-style-type: none"> • Sender of the message; • Message Type; • Receiver; • Transaction Reference Number; • Related Reference; • Value Date; and • Amount. |

| | |
|--------------------|---|
| Id | RTGS.UR.HVP.PAYT.020.010 |
| Name | Business Validation - Process specific authorisation checks |
| Description | <p>The RTGS Services shall ensure that the sender of a payment order can be:</p> <ul style="list-style-type: none"> • The owner of the account to be debited; • The owner of the account to be credited (in <u>the</u> 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 <u>the</u> 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 <u>of</u> a credit institution. <p>The check has to be performed as soon as the message has passed the technical validation.</p> |

| | |
|--------------------|---|
| Id | RTGS.UR.HVP.PAYT.020.020 |
| Name | Business Validation - Check on value date for non-warehouse payments |
| Description | <p>Excluding warehouse payments, the RTGS service shall only accept a payment order that specifies a value date as of current business date, except when the CB has activated the back-valued payments for one participant. In such a case, the value date check is de-activated.</p> |

Note: ~~the~~ RTGS ~~Services~~ will send non-warehouse payment orders having passed all the checks described above, immediately to the business validation step described below.

| | |
|--------------------|---|
| Id | RTGS.UR.HVP.PAYT.020.025 |
| Name | Business Validation - Check on value date for warehouse payments |
| Description | <p>The RTGS service shall only accept a warehouse payment order that specifies a value date that is not later than <u>five business calendar</u> 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 value date.</p> |

Note: Once the value date is reached and the service opens for payments (see Shared Services / Business Day), ~~the~~ RTGS ~~Services~~ will send the warehouse payment order automatically and 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, ~~ifas~~ 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 to-be-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.020.050 |
| Name | Business Validation - field and reference data checks |
| Description | <p>The RTGS services shall perform the following field and reference data checks:</p> <ul style="list-style-type: none"> • Field value validation - codes are valid, domain values are within allowed range; • Cross-field validation - e.g. the currency of the accounts involved is the same as the amount currency etc.; and • Database checks - e.g. existence of parties and accounts |

| | |
|--------------------|---|
| Id | RTGS.UR.HVP.PAYT.020.070 |
| Name | Business Validation - direct debit check |
| Description | The RTGS services shall check whether a Direct Debit Mandate exists between the account to be debited and the payee Party, and that the maximum amount granted in the Mandate is not exceeded. |

| | |
|--------------------|--|
| Id | RTGS.UR.HVP.PAYT.020.080 |
| Name | Business Validation - Check of backup payments |
| Description | Backup payments are accepted only in case where the CB has activated the feature for its participant. |

| | |
|--------------------|---|
| Id | RTGS.UR.HVP.PAYT.020.090 |
| Name | Business Validation - mandated payment check |
| Description | The mandated payment is sent by a Central Bank on behalf of its direct participant, in <u>the</u> case of contingency situations. It can be either a credit transfer or a direct debit. |

| | |
|--------------------|---|
| Id | RTGS.UR.HVP.PAYT.020.100 |
| Name | Business Validation - Account checks |
| Description | The system should <u>retrieve/identify</u> the accounts to be debited and to be credited from the BIC11 indicated in the message. In CRDM, each BIC11 is mapped to only one Cash Account, may it be for the direct participant itself (including multi-addressee) or its indirect participants. |

1.2.3.3 CHECK ON TIMING CONSTRAINTS

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

The participants have the possibility to determine the execution time of their transactions, through "From Time", "and either Till Time" ~~and~~ "or Reject Time".

| | |
|--------------------|---|
| 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 " <u>From Time</u> ", if indicated is, has been reached. |

The payment order may specify an earliest time at which the serviceService 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 specified in the payment order ~~specifies~~.

| | |
|-------------|--|
| Id | RTGS.UR.HVP.PAYT.030.020 |
| Name | Reject Time and/ Till Time |
| Description | <p>The RTGS Services shall ensure that a payment order can only be submitted to settlement if its "Reject Time"_, if indicated is, has not yet <u>been</u> reached. Otherwise, it<u>As soon as the Reject Time is reached and if the payment order has not been settled, the payment order</u> will be rejected and a settlement failure notification is<u>will be</u> sent out.</p> <p><u>If Till Time has been specified instead, the payment order shall not be rejected when this time is reached and the payment order has not been settled, and RTGS shall allow it to be submitted for settlement beyond this time.</u></p> <p><u>At 15 minminutes</u> before the indicated Reject Time and/ Till time and without successful settlement yet, Time and if the <u>payment order has not been settled</u>, RTGS services shall send out a warning notification to the party to be debited.</p> |

The payment order may specify a latest time untilby which the serviceService 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 specified in the payment order ~~specifies~~.

| | |
|-------------|---|
| Id | RTGS.UR.HVP.PAYT.030.030 |
| Name | End of Day - specific cut-off times |
| Description | <p>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<u>has</u> to settle:</p> <ul style="list-style-type: none"> • New customer payments <u>untilby</u> a predefined customer payment cut-off time; • New interbank payments until anotherby a predefined, different interbank payment cut-off time; • ... |

Note: both payment and interbank cut-offs could depend on the currency. This has not been decided yet, and will be further discussed during the implementationrealisation phase. See Shared Services / Business Day.

| | |
|-------------|---|
| 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 |

| | |
|--|---|
| | <p>settled until the relevant cut-off time is reached, and the last optimisation algorithm has run (see Shared Service URD / Business day, and notably SHRD.UR.BD.OPER.000.030). <u>The in chapter Business day in the URD for Shared Services</u>). RTGS services shall revoke:</p> <ul style="list-style-type: none"> • Queued customer payments not yet settled until<u>before</u> a predefined customer payment cut-off time; • Queued interbank payments not yet settled until another<u>before a</u> predefined, different interbank payment cut-off time. |
|--|---|

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 (notably including offsetting). ~~That~~This 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 "FIFO by-pass 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 | <p>The RTGS Services shall process payments according to their priority classification. The service<u>Service</u> shall support three priority classes:</p> <ul style="list-style-type: none"> • Highly Urgent (HU) • Urgent (U) • Normal (N) <p>If no priority class is selected, The RTGS Services shall handle payments as normal payments.</p> |

| | |
|--------------------|---|
| 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 ₁ apart from the exception described below ₁ 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 <u>timestamp</u> to sequence. |

| | |
|--------------------|--|
| Id | RTGS.UR.HVP.PAYT.040.030 |
| Name | Conditions for settlement attempt of normal payments - so called "FIFO by-pass principle" for normal payments |
| Description | The RTGS Services shall ensure that a normal payment can ₁ apart from the exception described below ₁ 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 <u>the event that</u> 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 | <p>When the RTGS Services have<u>has</u> submitted a payment order to settlement, offsetting is required in order to reduce the liquidity needed for its settlement, in any case.</p> <p>The RTGS Services can select other payments together with the payment submitted to settlement if those former are:</p> <ul style="list-style-type: none"> • 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 (see Shared Services URD / CRDM and Business Data Definitions):

- ▶ 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~~Limits are not breached for normal payments.
- ▶ The available liquidity is sufficient.

Note: For a EURO-CB, this check is not relevant since a EURO-CB ~~account~~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~~Start of ~~day~~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"~~the Pending Value and is queued. Following any incoming credit, the ~~pending value~~Pending Value is updated and the ~~"defined value"~~Defined Value (i.e. the reserved amount minus the related debits) of the related reservation is increased;
 - After each debit of HU and U payment, the ~~"defined value"~~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 | <p>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.</p> |

| | |
|-------------|--|
| Id | RTGS.UR.HVP.PAYT.050.020 |
| Name | Blocked parties validation |
| Description | <p>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.</p> |

| | |
|-------------|---|
| Id | RTGS.UR.HVP.PAYT.050.030 |
| Name | Limit check |
| Description | <p>The RTGS-Services shall perform a check toward bilateral and multilateral limits<u>Limits</u>, only for normal payments.</p> <p>First, the RTGS Services shall check whether a bilateral limit<u>Limit</u> exists between the debited account and the credited account. In case<u>Where</u> 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.</p> <p>In case<u>Where</u> no bilateral limit<u>Limit</u> is defined, the RTGS Services shall check the multilateral limit<u>Limit</u>. In case<u>Where</u> 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.</p> |

| | |
|-------------|---|
| Id | RTGS.UR.HVP.PAYT.050.040 |
| Name | Balance check for highly urgent payments |
| Description | <p>The RTGS Services shall ensure that a highly urgent payment will, if any, draw liquidity from:</p> <ol style="list-style-type: none"> 1. The HU reservation; 2. if the latter <u>If this</u> is not enough, <u>then additionally</u> from the non-reserved liquidity (balance of the account minus the HU and U reservations); and 3. if the latter <u>If this</u> is <u>still</u> not enough, <u>then additionally</u> the U reservation <p>In case <u>Where</u> not enough liquidity is available, the RTGS Services shall queue the payment and then check whether the user has configured an Event-based Liquidity Transfer Order in case <u>for the event where there is a</u> lack of cash for HU payments, to draw liquidity from the MCA linked to its RTGS DCA (through the associated liquidity transfer account link).</p> |

| | |
|-------------|---|
| Id | RTGS.UR.HVP.PAYT.050.050 |
| Name | Balance check for urgent payments |
| Description | <p>The RTGS Services shall ensure that a urgent payment will, if any, draw liquidity from:</p> <ol style="list-style-type: none"> 1. The U reservation 2. If not enough, <u>then additionally</u> from the non-reserved liquidity (balance of the account minus the HU and U reservations) <p>In case <u>Where</u> not enough liquidity is available, the RTGS Services shall queue the payment and then check whether the user has configured an Event-based Liquidity Transfer Order in case <u>for the event where there is a</u> lack of cash for U payments, to draw liquidity from the MCA linked to its RTGS DCA (through the associated liquidity transfer account link).</p> |

| | |
|--------------------|---|
| Id | RTGS.UR.HVP.PAYT.050.060 |
| Name | Balance check for normal payments |
| Description | <p>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)</p> <p>In case<u>Where</u> not enough liquidity is available, the RTGS Services shall queue the payment.</p> |

1.2.3.6 QUEUE PAYMENT ORDER AND OPTIMISE QUEUED PAYMENT ~~ORDERS~~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 | <p>The RTGS Services shall manage queued payments according to the priority of the payment:</p> <ul style="list-style-type: none"> • Highly urgent queue; • Urgent queue; and • Normal queue |

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

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~~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 | <p>The RTGS Services shall reduce the stock of unsettled payments and minimise the needed liquidity through optimisation.</p> <p>The constraints described before in the entry disposition (order in the queues, FIFO by-pass principle for normal payments, offsetting) need to be applied strictly.</p> |

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 | <p>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 submits several payment orders together for settlement and they settle simultaneously on a gross basis within one legal and logical second.</p> |

| | |
|--------------------|--|
| Id | RTGS.UR.HVP.PAYT.070.020 |
| Name | Update reservation - Debiting highly urgent payment |
| Description | <p>For each debiting Highly Urgent payment, the RTGS Services shall update the reservations according to the steps of the check:</p> <ol style="list-style-type: none"> 1. The available amount within the HU reservation is updated; 2. In case<u>Where</u> the amount in the HU reservation is not enough, and that the non-reserved liquidity for normal payments is not enough neither<u>either</u>, the remaining amount is deduced<u>deducted</u> 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 Where there is a pending reservation, the RTGS Services shall reduce the pending value Pending Value in the 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 Limit in the case of a debit payment |
| Description | The RTGS Services shall, for each normal payment debiting an account, decrease the free bilateral or multilateral limit Limit by the same amount |

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

At the ~~start~~Start of ~~day~~Day, limits are set according to the standing orders (so called "~~defined limit~~");~~Defined Limit~~), and are updated ~~all along~~throughout the business day after each relevant credit and debit (so called "~~free limit position~~");~~Free Limit Position~~)

| | |
|--------------------|---|
| Id | RTGS.UR.HVP.PAYT.070.065 |
| Name | Update maximum amount in the case of Direct Debit direct debit |
| Description | The RTGS services shall, for each Direct Debit direct debit, increase the used amount related to the maximum amount of the Direct Debit Mandate. |

| | |
|-------------|--|
| Id | RTGS.UR.HVP.PAYT.070.070 |
| Name | Update - All-or- non none 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 RTGS DCA 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 RTGS DCA 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

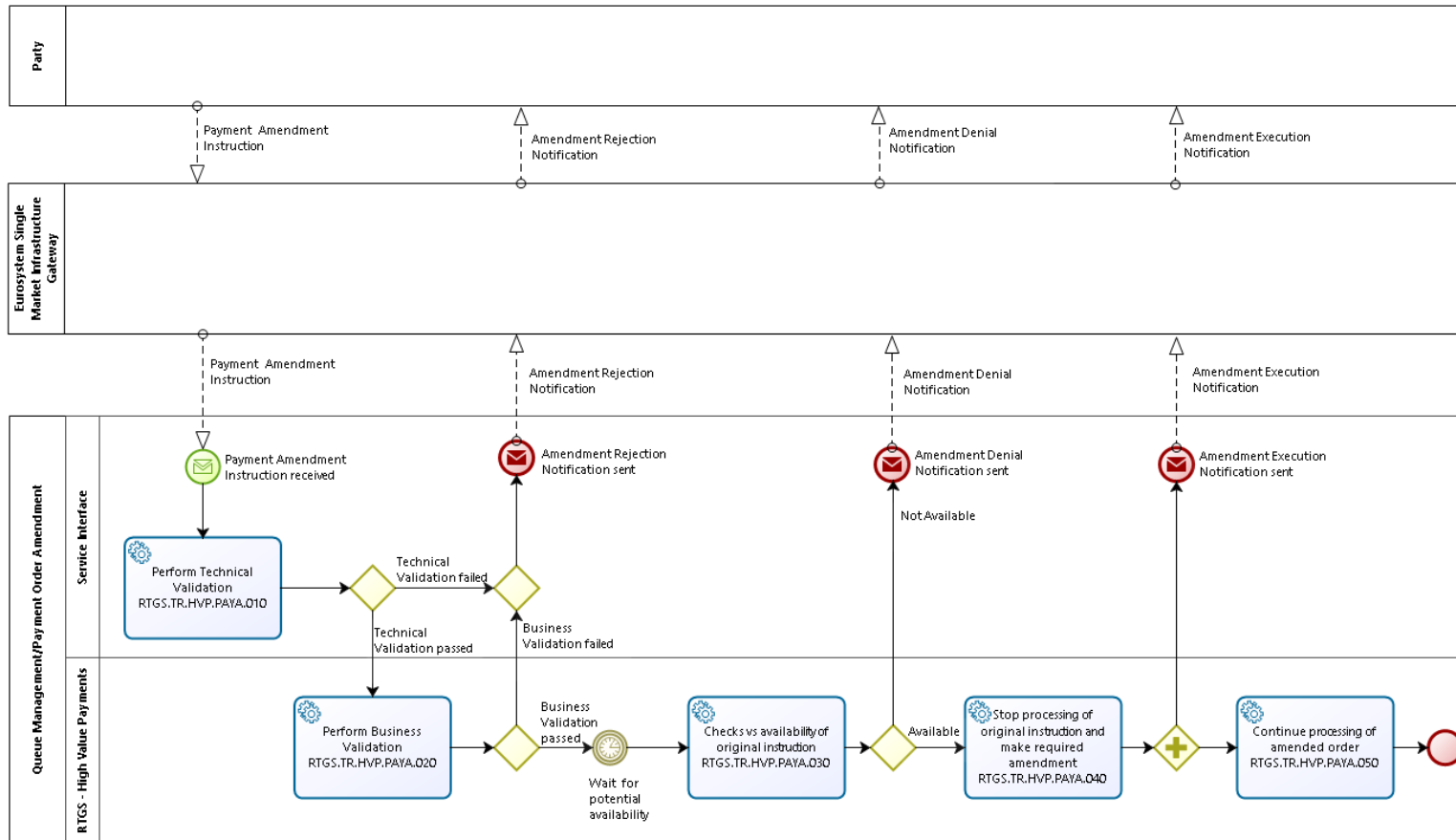
Task Ref: RTGS.TR.HVP.PAYT.080

| | |
|-------------|--|
| Id | RTGS.UR.HVP.PAYT.080.010 |
| Name | Floor and ceiling |
| Description | <p>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. This check is done<u>performed</u> only in case where the participant has defined a floor and/or a ceiling for the account. The check is done both on the debited and credited accounts.</p> <p>If either is the case, then the second step is to check which action has been specified:</p> <ul style="list-style-type: none">• Notification to be sent in A2A and/or Notification to be sent as an alert in U2A• Event-based Liquidity Transfer Order for submission to Central Liquidity Management to adjust the liquidity on the accounts involved so that the balance of the affected account reaches the specified target amount. <p>The outcome of this final check does not affect the finality of the settlement of the payment.</p> |

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

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 ~~service~~Service via sending of the respective message to the service. The ~~service~~Service 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 ~~service~~Service 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~~Where the amendment operation succeeds, the ~~service~~Service will amend the original payment accordingly and the ~~service~~Service will send an amendment success notification to both the sender of the amendment and to the initial sender of the original payment order¹.
- ▶ 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~~Move one or ~~several~~more payment orders to the top of the queue in which they are held, for re-ordering the queued transaction (triggering their settlement attempt). ~~In case~~Where 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~~Move one or ~~several~~more payment orders to the bottom of the ~~respective~~queue in which they are held, for re-ordering the queued transaction (possibly triggering the settlement of another payment order). ~~In case~~Where several payment orders were selected they will be put ~~enat~~ at the bottom of the queue according to their previous order. The default ~~order~~ is determined by the submission timestamp; ~~and~~
 - Change of execution time (including warehoused payments) (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 ~~Senders~~sender

Time constraints:

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

¹ ~~In case~~Where the sender of the amendment is the sender of the original payment, only one notification will be sent.

- ▶ The processing has to be executed within the opening hours of HVP (see section 3.4 on Availability of Services in the User Requirement Document for Shared Services), i.e. from the opening of the Service until the End of Day process starts, and outside the maintenance window.

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 (via A2A or U2A).

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 | <p>The RTGS Services shall ensure that an amendment of a payment order can be sent:</p> <ul style="list-style-type: none"> • By the participant owning the account to be debited or • By the respective CB acting on its behalf. <p>If the validation failed, a rejection notification with appropriate reason code must<u>shall</u> be sent to the sender of the payment amendment instruction.</p> |

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.020.060005** apply.

| | |
|-------------|--|
| Id | RTGS.UR.HVP.PAYA.020.020 |
| Name | Amendment of payment orders |
| Description | <p>The RTGS-Services shall check the validity of amendment instructions. Only the following payment amendment instructions are valid:</p> <ul style="list-style-type: none"> • Change priority (not possible for highly urgent) (This does not change the submission time). • Put on top of the respective queue Move one or severalmore payment orders to the top of the queue in which they are held, for re-ordering the queued transaction (triggering their settlement attempt). In caseWhere 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. • BringMove one or severalmore payment orders to the bottom of the respective queue in which they are held, for re-ordering the queued transaction (possibly triggering the settlement of another payment order). In caseWhere several payment orders were selected they will be put onat the bottom of the queue according to their previous order. The default -order is determined by the submission timestamp. • Change of execution time (including warehoused payments) (only if it was set before) (possibly triggering the settlement of another payment order). <p>If the validation failed, the RTGS-Services shall send a rejection notification with appropriate reason code to the sender of the payment amendment instruction.</p> |

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 | <p>The original payment order to be amended with the respective payment amendment instruction has to be in an intermediate (i.e. not end) 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" timeFrom Time was not reached yet or a warehouse payment). Thus, amendment of payment orders is not feasible if they are already in an end state (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</p> <p>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"Till Time or "REJECT time"Reject Time as long it has not elapsedpassed, and only to a time which has not yet elapsed etcis in the future.</p> |

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 | Stop processing and Amendment of payment order |
| Description | <p>The RTGS Services shall stop processing 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 payment orders from its queue, if it is not considered in an ongoing optimisation simulation process.</p> <p>An original payment order for which the "FROM" timeFrom Time is not reached yet or a warehouse payment will be directly amended according to the valid payment amendment instruction.</p> |

1.3.3.5 CONTINUE PROCESSING OF AMENDED ORDER

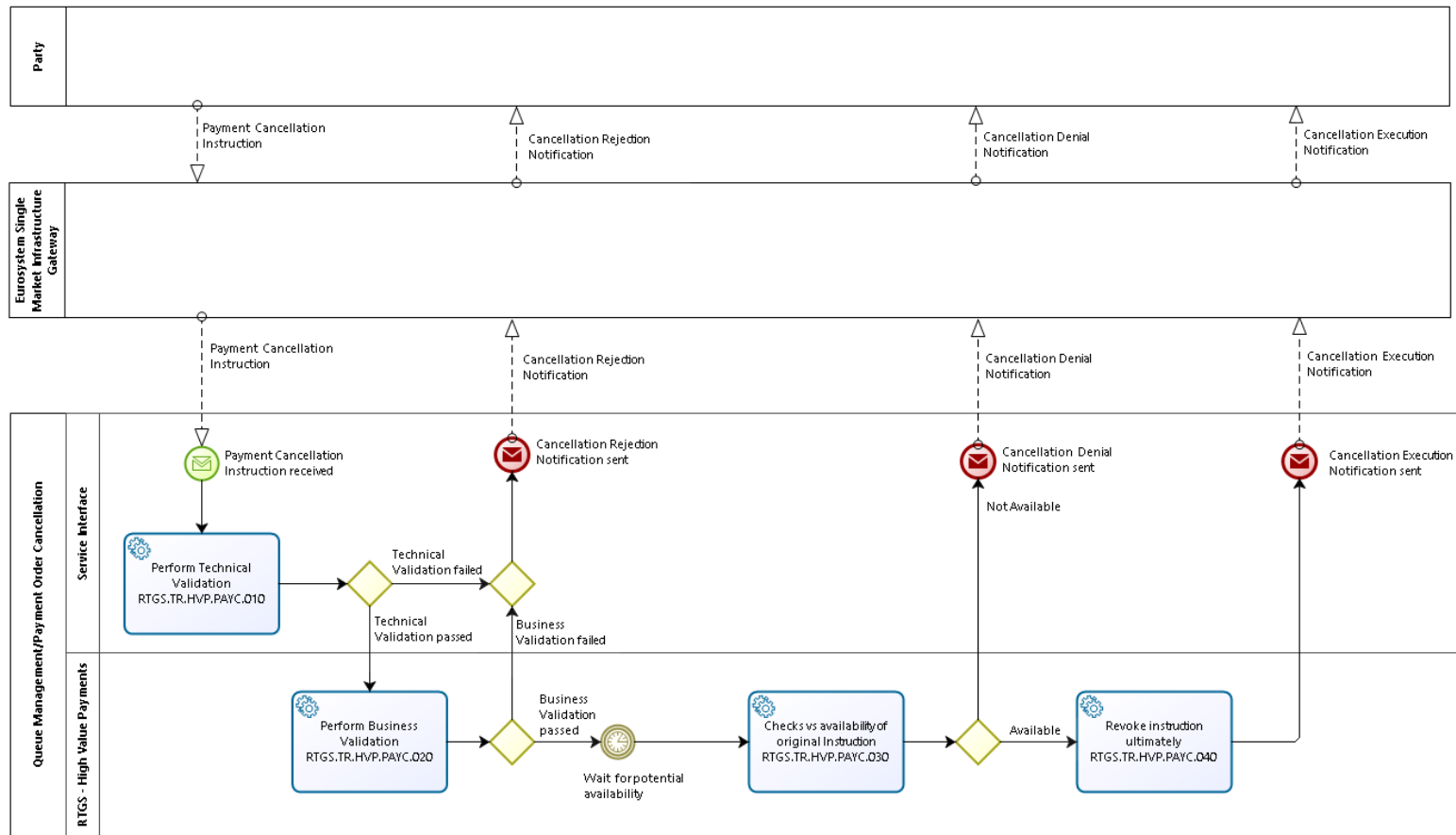
Task Ref: RTGS.TR.HVP.PAYA.050

| | |
|-------------|---|
| 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 of the order in the queue which was amended, the RTGS Services will <u>shall</u> process the amended payment order through the core settlement operations chain. If the queue order was changed, the RTGS Services will <u>shall</u> 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 <u>shall</u> 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 ~~service~~Service via sending of the respective message to the service. The ~~service~~Service 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 ~~service~~Service 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~~Where the cancellation operation succeeds, the ~~service~~Service will cancel the original message and the ~~service~~Service will send a cancel success notification to both the sender of the cancellation and the initial sender of the original payment order².

Process context:

- ▶ This generic process is valid for the cancellation of a queued payment order.

Pre-conditions:

- ▶ Respective privileges have been granted to the ~~Senders~~sender

Time constraints:

- ~~▶ The processing has to be completed until the end of day~~
- ▶ The processing has to be executed within the opening hours of HVP (see section 3.4 on Availability of Services in the User Requirement Document for Shared Services), i.e. from the opening of the Service until the End of Day process starts, and outside the maintenance window.

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 (via A2A or U2A).

~~Sub-processes:~~

- ~~▶ None~~

² ~~In case~~Where the sender of the cancellation is the sender of the original payment, only one notification will be sent.

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 | <p>The RTGS Services shall ensure that the cancellation instruction can be sent by the sending participant, or the respective Central Bank acting on behalf its credit institutions/customers.</p> <p>If the validation failed, the RTGS Services shall send a rejection notification with appropriate reason code to the sender of the cancellation.</p> |

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

Additionally, RTGS.UR.HVP.PAYT.020.050 and RTGS.UR.HVP.PAYT.020.060005 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 | <p>The payment order to be cancelled with the respective instruction has to be in an intermediate (i.e. not end) 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 (settled, rejected or cancelled).</p> <p>The RTGS Services must reject the cancellation of a payment order the serviceService has already rejected, settled or cancelled and to which the payment cancellation refers to.</p> <p>A payment order eligible for cancellation can either be a queued Payment Orderpayment order, an order for which the "FROM" timeFrom Time was not reached yet or a warehouse payment.</p> <p>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.</p> |

1.4.3.4 REVOKE INSTRUCTION ULTIMATELY

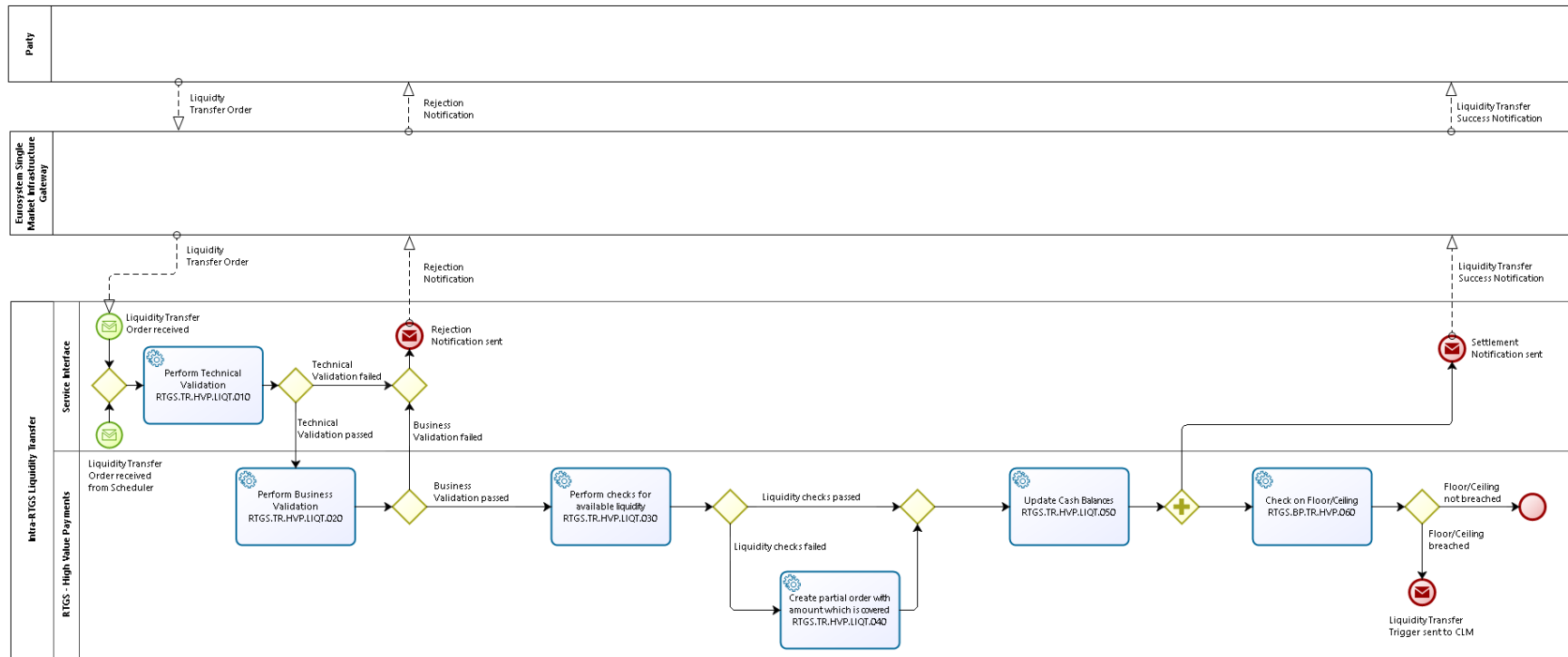
Task Ref: RTGS.TR.HVP.PAYC.040

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

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 order
 - From a participant RTGS DCA to another RTGS DCA. This could be from an AS participant RTGS DCA for all payments to its RTGS DCA dedicated to one or several AS. This could as well be from one RTGS DCA to a Sub-Accountsub account dedicated to one procedure 6 Interfaced AS (and vice versa);
 - From a participant RTGS DCA to the Technical Account related to an AS using procedure 6 Real-Time (and vice-versa);
 - From one RTGS DCA to another RTGS DCA within the same Liquidity Transfer Group, or within the whitelistWhitelist if defined.
- ▶ Standing ~~Order~~ Liquidity ~~Transfers~~ Transfer Orders, Immediate Liquidity Transfers and Event-based 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 ~~Where~~ 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 ~~where~~ the participant opted for it).

Process context:

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

Pre-conditions:

- I. Both RTGS DCAs/Sub-Accountsub accounts exist
- II. Respective privileges have been granted to the Sendersender

Time constraints:

- ~~▶ The processing has to be completed until the end of day~~
- ▶ The processing has to be executed within the opening hours of HVP (see section 3.4 on Availability of Services in the User Requirement Document for Shared Services), i.e. from the opening of the Service until the End of Day process starts, and outside the maintenance window.

Expected results:

- ▶ Liquidity successfully transferred

Triggers:

- ▶ Liquidity ~~Transfer Order (immediate transfer order (Immediate~~ Liquidity Transfer via A2A or U2A; or triggered by a Standing ~~Order~~ Liquidity Transfer Order or an Event-based Liquidity Transfer 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.020.005 |
| Name | Check for duplicate liquidity transfer |
| Description | <p>CLMRTGS shall carry out a duplicate submission control for incoming liquidity transfers. This control shall include the following fields:</p> <ul style="list-style-type: none"> • Sender of the message; • Message Type; • Receiver; • Transaction Reference Number; • Related Reference; • Value Date; and • Amount. |

| | |
|-------------|--|
| Id | RTGS.UR.HVP.LIQT.020.010 |
| Name | Business Validation - Process specific authorisation checks |
| Description | <p>The RTGS services shall perform service specific authorisation checks. A Liquidity Transfer OrderA liquidity transfer order from the participant's RTGS DCA to the RTGS DCA dedicated to AS can be sent by the participant, the AS, the AS on the participant's behalf or the respective CB acting on behalf its participants/AS.</p> <p>The Liquidity Transfer Orderliquidity transfer order can also be triggered by the scheduler in the case of Standing Ordersstanding orders. The request for a liquidity retransfer from the RTGS DCA dedicated to AS to the participant's RTGS DCA can be sent by the participant, AS or the respective CB acting on behalf of its AS or triggered by a Standing OrderLiquidity Transfer Order set up by the participant.</p> |

| | |
|-------------|---|
| Id | RTGS.UR.HVP.LIQT.020.025 |
| Name | Business Validation - Liquidity Transfer Group |
| Description | <p>The RTGS Services shall check whether both accounts belong to the same participant, or to participants within the same Liquidity Transfer Group or not. If not, the order will be rejected.</p> <p>This check is not validperformed for CB Accounts.</p> |

| | |
|-------------|---|
| Id | RTGS.UR.HVP.LIQT.020.020 |
| Name | Business Validation - whitelist <u>Whitelist</u> check |
| Description | <p>The RTGS Services shall check if the sending account is on the whitelist<u>Whitelist</u> for Liquidity<u>liquidity</u> transfers of the receiving account (if the receiving account has activated the whitelist<u>Whitelist</u> feature).</p> <p>The RTGS Services shall check if the receiving account is on the whitelist<u>Whitelist</u> for Liquidity<u>liquidity</u> transfers of the sending account (if the sending account has activated the whitelist<u>Whitelist</u> feature).</p> <p>If not, the order will be rejected.</p> <p>This check is not valid<u>performed</u> for accounts belonging to the same participant, and for <u>where the liquidity transfer involves one or more</u> CB Accounts.</p> |

Additionally, ~~RTGS.UR.HVP.PAYT.020.050~~ and ~~RTGS.UR.HVP.PAYT.020.060~~ apply~~applies~~.

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 | <p>The RTGS services shall check whether enough liquidity is available. In case of<u>Where there is a</u> lack of liquidity the usual rules for partial execution apply (cf Table 6 "Liquidity Transfer Types" in the section on Ancillary Systems).</p> |

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 <u>participants'</u> behalf or by an automatic trigger from the scheduler, the RTGS Services shall settle the liquidity transfer partially. For several standing orders, <u>in case where</u> 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 | Similar to RTGS.UR.HVP.PAYT.080.010 |

1.6 PROCESS INTER-SERVICE LIQUIDITY TRANSFER ORDER FROM MCA TO DCA - RTGS PART

This process is the second part of the CLM process "Inter-service LT between CLM and RTGS", the part within RTGS.

It is similar to the process described within CLM "Process inter-service liquidity transfer order from DCA to MCA". For the sake of simplicity, only the specific rules are described here.

The ~~whitelist~~Whitelist check (see RTGS.UR.HVP.LIQT.020.020) applies to both the sender and the receiver sides. For inter-service checks (same comment for the next two processes), it will be decided during the ~~implementation~~realisation phase whether they are both performed in the first step (in CLM), or only on the sender in the first step, and on the receiver in the second step.

1.7 PROCESS INTER-SERVICE LIQUIDITY TRANSFER ORDER FROM DCA TO MCA - RTGS PART

This process is the first part of the CLM process "Inter-service LT between RTGS and CLM", the part within RTGS.

It is similar to the process described within CLM "Process inter-service liquidity transfer order from MCA to DCA". For the sake of simplicity, only the specific rules are described here.

The only specific rule is for ~~Liquidity Transfers~~liquidity transfers triggered by a lack of cash in CLM. The rule for Partial Settlement is different from the standard one defined in RTGS.UR.HVP.LIQT.040.

| | |
|--------------------|---|
| Id | RTGS.UR.HVP.LTRCV.040.010 |
| Name | Partial Request |
| Description | In the case of Liquidity Transfers <u>liquidity transfers</u> triggered by a lack of cash in CLM, they can be partially settled. And the remaining part should be queued (it will be decided during the implementation <u>realisation</u> phase whether this queueing is done within the RTGS services or through the involvement of CLM with a second LT with a specific flag to indicate that it should be queued). In such a case, the processing will be similar to payment orders as described in the process "Payment Order Processing", considering that those LT are Highly Urgent. The queue will be common for Payment Orders <u>payment orders</u> and queued Liquidity Transfers <u>liquidity transfers</u> . |

1.8 PROCESS LIQUIDITY TRANSFER ORDER BETWEEN TWO DCAs IN DIFFERENT SETTLEMENT SERVICES - RTGS PART

This process is the RTGS part of the CLM process "Process liquidity transfer order between two DCAs in different settlement services".

Within this process, RTGS could be either:

-~~either~~ the sending service, and the process is similar to "Process inter-service liquidity transfer order from DCA to MCA - RTGS part" above; or

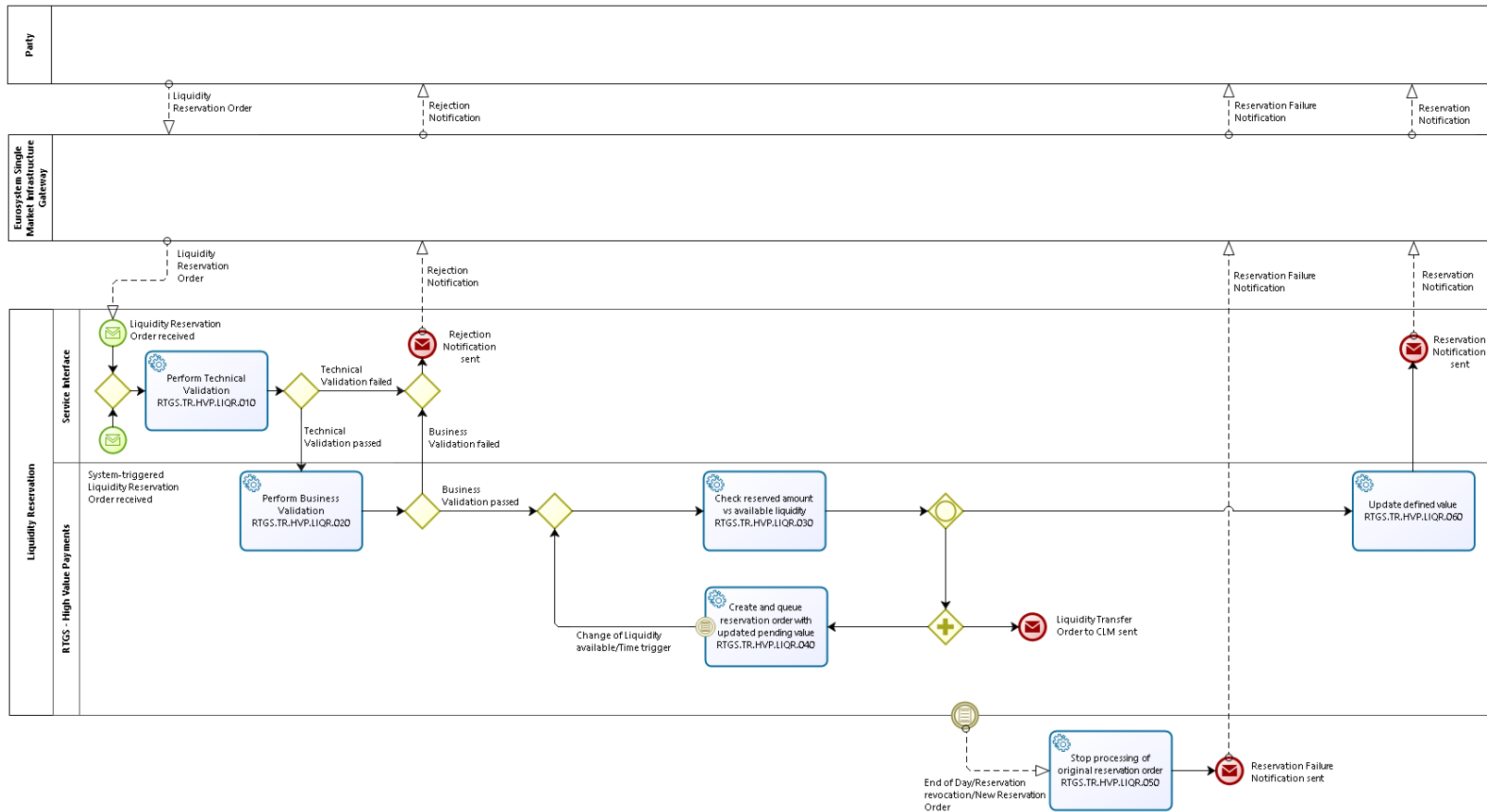
-~~or~~ the receiving service, and the process is similar to "Process inter-service liquidity transfer order from MCA to DCA - RTGS part" above.

No specific rule has been identified for this process.

1.9 LIQUIDITY RESERVATION

Business Process Ref: RTGS.BP.HVP.LIQR

1.9.1 Business Process Model



Business Process Model 5: Liquidity Reservation

1.9.2 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~~Start of-day Day standing order to reserve liquidity or through the receipt of a liquidity reservation order from the account owner or another entity that the account owner has authorised to act on its behalf.
- ▶ The ~~service~~Service performs a technical validation of the liquidity reservation order and, if successful, it also performs a subsequent business validation of the liquidity reservation order. The ~~service~~Service shall send a rejection if either the technical validation or the business validation fails. If the ~~service~~Service completes both the technical validation and the business validations without identifying any errors, then the ~~service~~Service will attempt to reserve the requested amount on the account referred.
- ▶ ~~In case~~Where the reservation operation (partly) succeeds, the ~~service~~Service will reserve (part of) the amount requested and the ~~service~~Service will send a (~~partly~~partial) reservation success notice to the sender of the request and to the account owner³.
- ▶ The amount that cannot be reserved is called ~~"pending value"~~the Pending Value and is queued. Following any incoming credit, the ~~pending value~~Pending Value is ~~tried to be~~ updated if possible and the ~~"defined value"~~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 ~~Sender~~sender

Time constraints:

- ~~▶ The processing has to be completed until the end of day~~
- ▶ The processing has to be executed within the opening hours of HVP (see section 3.4 on Availability of Services in the User Requirement Document for Shared Services), i.e. from the opening of the Service until the End of Day process starts, and outside the maintenance window.

Expected results:

- ▶ Liquidity successfully reserved

Triggers:

³ ~~In case~~Where the sender of the reservation is the account owner, only one notification will be sent.

- ▶ A ~~Liquidity Reservation Order~~liquidity reservation order (via A2A or U2A)
- ▶ ~~An Event-based~~A Standing Order for Reservation

Sub-processes:

▶ ~~None~~

1.9.3 User Requirements

1.9.3.1 TECHNICAL VALIDATION

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

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

1.9.3.2 BUSINESS VALIDATION

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

| | |
|-------------|--|
| Id | RTGS.UR.HVP.LIQR.020.010 |
| Name | Business Validation - Process specific authorisation checks |
| Description | <p>TheRTGS 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 athe scheduler in the case of a standing order.</p> <p>If the validation failed, a rejection notification with appropriate reason code must<u>shall</u> be sent to the sender.</p> |

Additionally, RTGS.UR.HVP.PAYT.020.050 and RTGS.UR.HVP.PAYT.020.~~060005~~ apply.

1.9.3.3 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~~". Pending Value.

1.9.3.4 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 <u>Whenever there is</u> an increase of in 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 <u>will</u> shall process the pending reservation partly (the RTGS Services <u>will</u> shall 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.

1.9.3.5 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 <u>receipt</u> of End -of-day <u>Day</u> notification, a Reservation <u>reservation</u> revocation or a New Reservation Order, the new <u>reservation order</u> , RTGS Services shall stop to process of the original reservation order. |

1.9.3.6 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

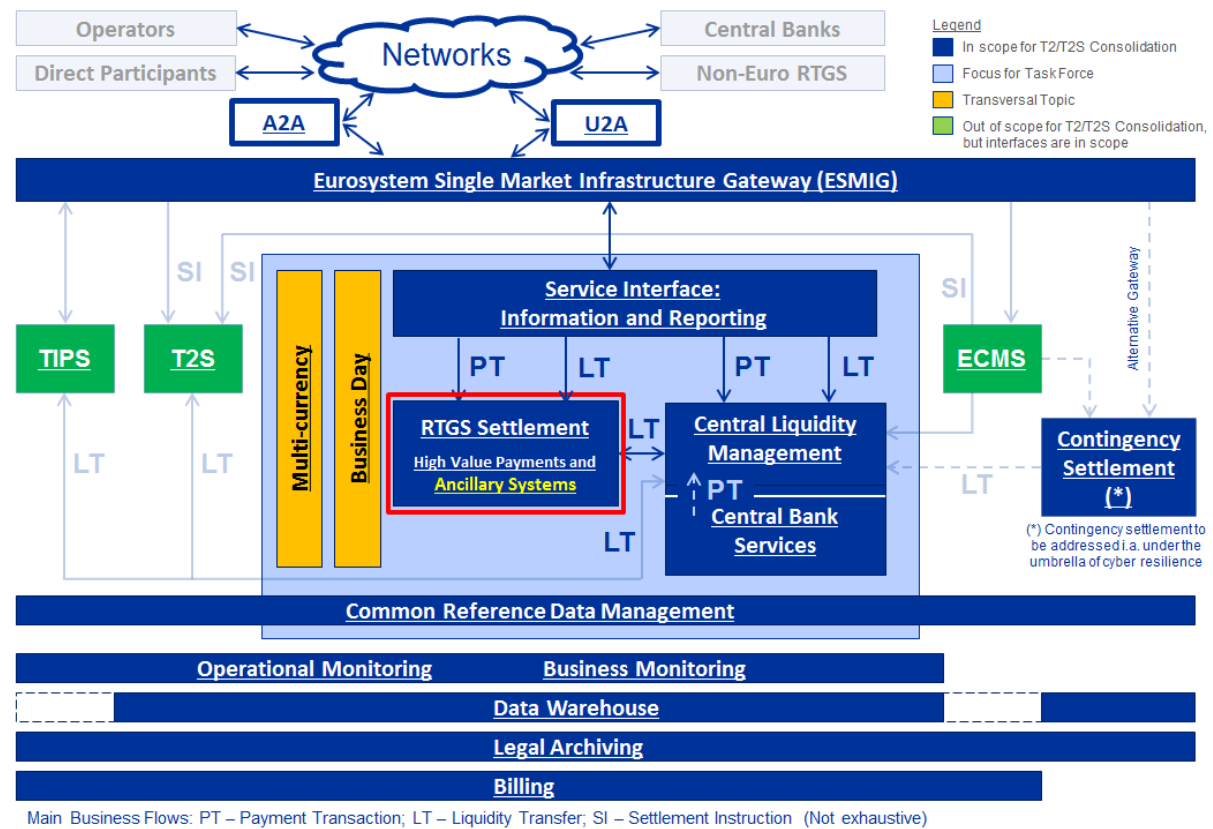


Figure 2: Context diagram for RTGS Services for Ancillary Systems

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

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 AS 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:

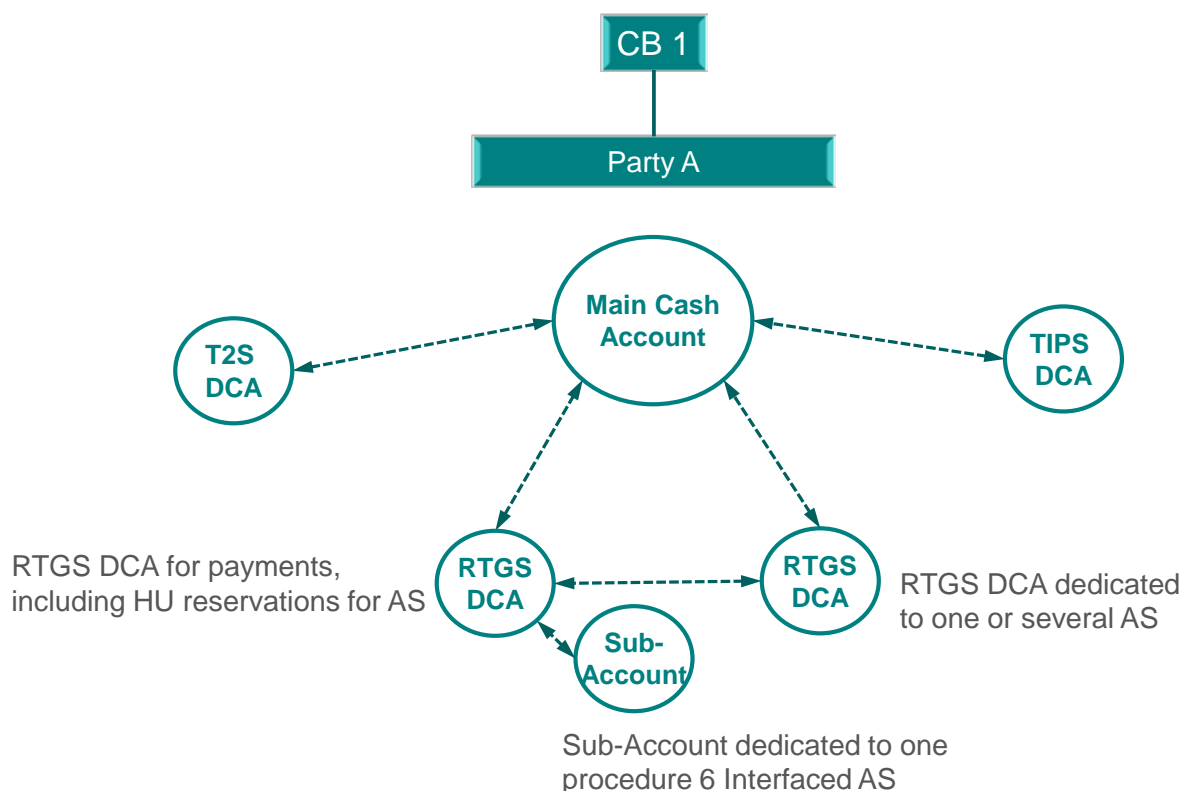


Figure 3: Generic account constellation for an AS participant

Besides DCAs for securities and instant payments settlement, it has **an** 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 DCA for High Value Payments, the second account (for other AS) as an RTGS DCA dedicated to one or several AS.

| Account type | Ownership |
|-------------------------|-------------------------|
| RTGS DCA | Party A |
| Sub-Account | Party A |
| Guarantee Funds Account | Guarantor, CB or the AS |
| Technical Account | CB or the AS |

Table 3: Account Types and their ownership

2.1.3.1 SEPARATION OF LIQUIDITY

| Account type | Settlement Procedure | Shared among several AS? |
|---|---|---|
| RTGS DCA | <ul style="list-style-type: none"> • 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)"⁴ | <ul style="list-style-type: none"> • Y |
| Sub- Account <u>account</u> | <ul style="list-style-type: none"> • "Settlement on dedicated Liquidity Accounts (interfaced)" | <ul style="list-style-type: none"> • N |

Table 4: Separation of liquidity for different settlement procedures

⁴ Liquidity for "Settlement on dedicated Liquidity Accounts (real-time)" can be transferred from the RTGS 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 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 DCA. | No further separation by AS procedure/AS possible. |
| RTGS DCA dedicated to AS | Usage of liquidity transferred from the MCA or the RTGS DCA to the RTGS DCA dedicated to AS. | By default, no automated complementation is set up. Complementation can be set up by the participant through pre-defined liquidity transfers . <u>Event-based Liquidity Transfer Orders</u> . | Separation by AS procedure/AS possible. |
| Sub-Account <u>account</u> | Usage of liquidity transferred from the RTGS DCA to the Sub-Account <u>sub account</u> . | By default, no automated complementation is set up. Complementation can be set up by the participant through pre-defined liquidity transfers . <u>Event-based Liquidity Transfer Orders</u> . | Separation by AS using procedure 6 Interfaced mandatory. |
| 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 <u>Liquidity transfer</u> | AS participant | Only fully settable, if possible | Given in LT Order |
| | AS (on behalf) | Partially settable, if necessary | Given in LT Order |
| | CB (on behalf) | Only fully settable, if possible | Given in LT Order |
| Standing Order <u>Order</u> Liquidity Transfer | AS participant | Partially settable, if necessary | Given in LT Order |

Table 6: Liquidity Transfer Types

2.1.5 Ancillary System Settlement Procedures

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

| Procedure | Former ASI Procedure | Description |
|---|-----------------------|---|
| Direct settlement in the former TARGET2 PM account (e.g., Continuous Linked Settlement payments). | Participant interface | Usual real-time gross -mode settlement of bilateral high value payments. |
| Real- Time time Settlement | 2 | Usual real-time gross -mode settlement of bilateral high value payments. |
| Bilateral Settlement | 3 | Usual real-time gross -mode settlement of bilateral high value payments. |
| Settlement on dedicated Liquidity Account (so-called technical account for procedure 6) (real-time) | 6 Real-Time | Usual real-time gross -mode settlement of bilateral high value payments. |
| Settlement on dedicated Liquidity Account (so-called sub -accounts) (interfaced) | 6 Interfaced | Usual real-time gross -mode settlement of bilateral high value payments. |
| Standard Multilateral settlement | 4 | "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 | 5 | "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

~~In the future RTGS services, considering~~ Considering the migration to ISO20022, there will be no difference in RTGS between the participant interface and AS interface. As a consequence, the functionality of the former procedures 2 and 3 will be provided using individual payment XML messages. Banks will ~~have the possibility~~ be able to grant to AS the right to debit the account of the bank for the AS settlement. HU priority will be used for AS transactions, and From Time ~~/ /~~ Information period ~~/ /~~ Settlement period can be defined (see HVP URD / Payment Order Processing above). AS transactions can be sent in a file (see Shared Services / ESMIG).

For procedure 6 RT, one account being the so-called Technical Account for procedure 6 RT which will have an ~~end-End~~ of-day Day balance will be used per AS.

For procedure 6 Interfaced, the accounts to be used for the banks will be sub -accounts and an AS can use a technical account.

The additional specific features for procedures 6 RT and Interfaced are described below.

For procedures 4 and 5, AS transactions will be sent by files. The ~~service~~Service will manage the links as formerly in ~~T2~~TARGET2 ("Debits first" or "all or nothing"), according the parameters set for the AS in CRDM (which procedure is used, see Business Data Definition). Information and settlement periods will be provided ~~like as they were~~ formerly in ~~T2~~TARGET2 as well, including the (optional) activation of the guarantee mechanism ~~in case of where there is a~~ failure at the end of the settlement period.

2.1.5.1 SETTLEMENT ON DEDICATED LIQUIDITY ACCOUNTS (INTERFACED)

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 | Mapping |
|--|--|
| Dedicated Liquidity | Liquidity on sub -account (one sub -account per AS) |
| Start of procedure / End of procedure ⁵ | Regular liquidity transfers (e.g. from RTGS DCA to Sub-Account 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-Account sub account involved will be controlled/blocked by the AS. The control is given back to the participant through the end of cycle, meaning that liquidity increase on the Sub-Account sub account is possible between two cycles. |
| Liquidity increase during cycle initiated by the participant | Always possible, either through a liquidity transfer or a payment ⁶ . |
| 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)"

⁵ It will be decided during the ~~implementation~~realisation phase whether one single procedure will be defined (no distinction between Night-Time and Day-Time) or two procedures as formerly in ~~T2~~TARGET2, and whether they will be triggered by the system or by the AS.

⁶ Further details ~~regarding~~ which messages are used and when exactly the respective liquidity increase is booked, will be provided in the UDFS.

2.1.5.2 SETTLEMENT ON DEDICATED LIQUIDITY ACCOUNTS (REAL-TIME)

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:

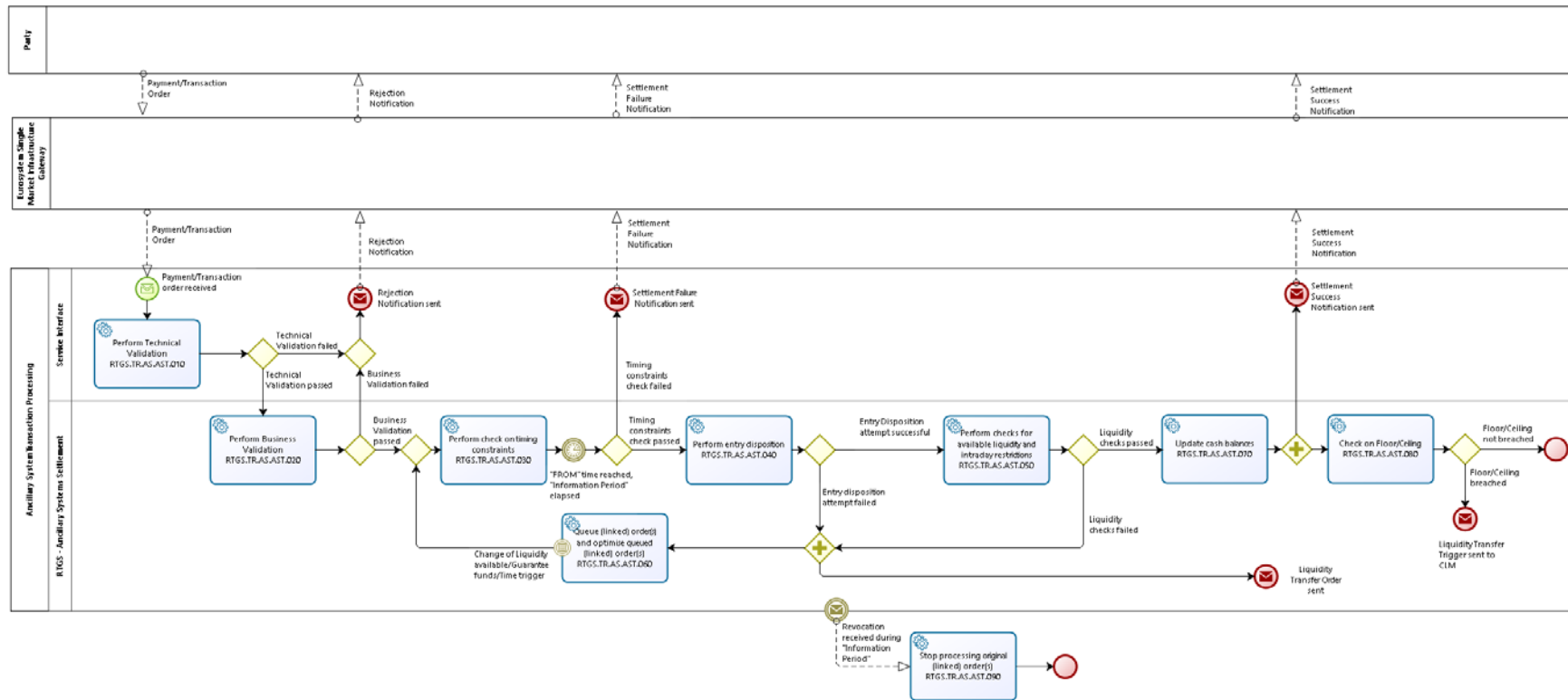
| Feature | Proposal for mapping |
|----------------------------|---|
| Cross-AS settlement | Can be realised as Liquidity Transfers liquidity transfers between two different technical AS accounts owned by ACHs. The whitelist Whitelist functionality ensures that only authorised ACHs can send Cross-AS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

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

2.2 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 the processing of HVP payments, except the specificities described hereafterbelow.
- ▶ Specificities:
 - The process will be initiated by the ~~ancillary system~~Ancillary System participating in the service, its participants or the CB acting on behalf via sending of the respective request message to the service;
 - 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/~~Sub-Accounts~~sub accounts exist
- ▶ Respective privileges have been granted to the ~~Senders~~sender

Time constraints:

- ~~▶ The processing has to be completed until the end of day settlement~~
- ▶ The processing has to be executed within the opening hours of AS (see section 3.4 on Availability of Services in the User Requirement Document for Shared Services), i.e. from the opening of the Service until the End of Day process starts, and outside the maintenance window.

Expected results:

~~The~~ RTGS ~~services~~ shall either

- ▶ Settle the AS transaction or
- ▶ Queue the AS transaction or
- ▶ Reject (~~in case of negative~~if validation fails) / Cancel the AS transaction or
- ▶ Send a failure notification for

- the Reject Time reached or
 - the not settled AS transaction (at the End of ~~the~~ Day revocation, since no failure notification are sent after each unsuccessful settlement attempt) or
- ▶ Send an optional (according to subscription) settlement success notification.

Triggers:

- ▶ This process is triggered by a valid request from the Ancillary System/~~Participant~~participant/Central Bank

~~Sub-processes:~~

~~▶ None~~

2.2.3 User Requirements

Request messages from AS can be sent in "batch" mode, i.e. through files, meaning that:

- for multilateral settlement procedures 4 and 5, the settlement should not break the links ("Debits first" or "all or nothing")
- for monitoring purposes, for all procedures 3 to 6, it should be possible to have a complete view on the status of all the payments in the file

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 | <p>The RTGS Services shall check if the ancillary system<u>Ancillary System</u> is, indeed, authorised to debit/credit the settlement bank according to a list of settlement banks per Ancillary System.</p> <p>If the validation failed, rejection notifications with appropriate reason code must be sent to the<u>Ancillary</u><u>the Ancillary</u> System.</p> |

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 |
| Description | <p>The RTGS-services shall consider the following timing constraints with respect to settlement:</p> <ul style="list-style-type: none"> The "Settlement Period" is a time period set by the sender, An AS transaction can only be submitted to settlement if its "Settlement Period"" if indicated" has not yet elapsed. Otherwise, it will be rejected. |

| | |
|--------------------|---|
| Id | RTGS.UR.AS.AST.030.020 |
| Name | Information period |
| Description | <p>The RTGS-services shall consider the following timing constraints with respect to settlement: The "Information Period" is a time period set by the sender.</p> <p>An AS transaction 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. At the start of the information period, the system will be informing the settlement banks about the upcoming settlement via U2A broadcast.</p> |

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

Blocked accounts validation and Blocked parties validation Same as **RTGS.UR.RTGS.PAYT.050.010** and 020

Limit check-~~As: as~~ all AS transactions are of highly urgent priority, there is no check against bilateral or multilateral ~~limits~~Limits.

Balance checks for highly urgent payments

Similar to **RTGS.TR.HVP.PAYT.050.040**

| | |
|--------------------|--|
| Id | RTGS.UR.AS.AST.050.010 |
| Name | 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 <u>sub account</u> balance is exclusively reserved for the AS settlement in <u>the</u> case of a running cycle. |

| | |
|--------------------|--|
| Id | RTGS.UR.AS.AST.050.020 |
| Name | 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 | <p>The RTGS-services shall consider usage of guarantee funds with respect to settlement:</p> <p>If the first balance check fails, in-casewhere 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. The request can either be accepted or rejected by the AS.</p> <p>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.</p> <p>If then still one of the various linked transactions cannot be settled, the process for revoking the file and unwinding (see next RTGS.UR.AS.AST.070.010) should be started. The system will be informing the settlement banks via U2A broadcast.</p> |

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 | <p>The RTGS-services shall consider linkage constraints within optimisation and due to multilateral settlement.</p> <p>For linked transactions, the optimisation has to ensure that all linked transactions are processed such that the links are not broken.</p> |

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 | <p>The RTGS services shall consider linkages<u>linkage</u> constraints due to multilateral settlement in <u>the</u> case of unsuccessful settlement attempts.</p> <p>For the standard multilateral settlement, if one of the debits fails, the debits already executed need to be unwound when the file is revoked. The file shall be revoked when, after the settlement period, not all debits have been settled or if the AS or Central Bank on behalf revokes the file or at the end-End of-day <u>Day</u>, if a settlement period has not been defined.</p> |

2.2.3.8 CHECK ON FLOOR/CEILING

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

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

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

3.1 AVAILABILITY

| | |
|--------------------|---|
| Id | RTGS.UR.NFR.ALL.030 |
| Name | Availability |
| Description | Availability, calculated on a quarterly basis, shall be at least 99.7%. |

~~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 availability calculated on a quarterly basis shall be at least 99.7%. Payments not settled in the “entry disposition” are excluded. Warehoused payments are excluded. Payments stemming from batch procedures of AS are excluded. Start of the measurement period will be adapted to neutralise the “morning queuing effect”.

| | |
|--------------------|---|
| Id | RTGS.UR.NFR.ALL.040 |
| Name | Planned Maintenance window |
| Description | The RTGS services will provide a maintenance window. |

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 <u>minutes</u> in case the event of site failures. In case of <u>Where there is</u> a loss of a complete region the recovery point objective (RPO) shall not exceed two 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~~ ensures synchronous point of consistency creations and, as a consequence, no data loss in ~~case the event~~ of failures, unless the ~~service can't~~ Service cannot be

restarted in the same region and a failover to the backup -region has to be conducted. In this case a data loss of two 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 one hour in <u>case the event</u> of site failures. In case of <u>Where there is</u> a loss of a complete region the recovery time objective (RTO) shall not exceed two hours. |

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

3.3 PERFORMANCE REQUIREMENTS

| | |
|--------------------|--|
| Id | RTGS.UR.NFR.ALL.070 |
| Name | Response Time Goals |
| Description | The RTGS services shall process 95% of the transactions <u>in under five within 2</u> minutes and 100% of the transactions <u>in under 15 within 5</u> minutes. |

| | |
|--------------------|---|
| Id | RTGS.UR.NFR.ALL.080 |
| Name | Peak Workload per second |
| Description | The RTGS services shall be able to process 50 transactions per second, enduring the peak load for at least one hour. |

| | |
|--------------------|--|
| Id | RTGS.UR.NFR.ALL.090 |
| Name | Upward Scalability |
| Description | <p>The RTGS services shall be scalable to handle: <u>higher throughputs in order to cope with e.g. short-term market shocks and foreseeable increases:</u></p> <ul style="list-style-type: none"> • A 20% higher workload within 15 minutes and • Double <u>A double</u> of the workload <u>(but up to 200 transactions per second)</u> within 365 days. |

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~~ this, ~~RTGS services~~ shall be able to handle higher throughputs.

3.4 INFORMATION SECURITY AND CYBER RESILIENCE

| | |
|--------------------|--|
| Id | <u>RTGS.UR.NFR.ALL.100</u> |
| Name | <u>Information Security</u> |
| Description | <p><u>RTGS shall be compliant with the Information Security Requirements and Controls.</u></p> <p><u>Note: For details see the Market Infrastructure Security Requirements and Controls document.</u></p> <p><u>All requirements must be fulfilled in a central integrated way.</u></p> |

| | |
|--------------------|--|
| Id | <u>RTGS.UR.NFR.ALL.110</u> |
| Name | <u>Cyber Resilience</u> |
| Description | <p><u>RTGS shall be compliant with Cyber Resilience Requirements.</u></p> <p><u>Note: For details see Market Infrastructure Cyber Resilience Requirements document.</u></p> <p><u>All requirements must be fulfilled in a central integrated way.</u></p> |

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) shall be provided for each service, offering ~~functionalities~~ functionality to access information in U2A mode. The ~~GUI(s)~~ GUIs shall be harmonised to the best possible ~~extend~~ extent.

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 | <p>All services <u>Services</u> shall provide the functionality to query <u>through U2A and A2A interfaces</u> the modified data at the attribute level, the user performing the change and the timestamp of the change through U2A and A2A interface <u>made</u>.</p> <p>It should be visible which attributes were changed to which, together with the <u>new</u> values.</p> <p>The query shall return relevant business attributes of the Audit Trail.</p> |

| | |
|--------------------|---|
| Id | RTGS.UR.RTGS.UI.ALL.020 |
| Name | Query System time |
| Description | <p>All services <u>Services</u> shall provide the functionality to query system time to align the time of a connected application through an application to application <u>A2A</u> interface (A2A).</p> <p>The query shall return the System time.</p> |

4.1.2 Action

| | |
|--------------------|--|
| Id | RTGS.UR.RTGS.UI.ALL.030 |
| Name | Amend/Revoke Task(s) |
| Description | <p>All services <u>Services</u> shall provide the functionality to amend or <u>or</u> revoke task(s) through the U2A interfaces.</p> |

| | |
|--------------------|--|
| Id | RTGS.UR.RTGS.UI.ALL.040 |
| Name | Act on behalf |
| Description | <p>All servicesServices shall provide the functionality to act on behalf through U2A and A2A interfaces for:</p> <ul style="list-style-type: none"> • Central Banks, to act on behalf of any partyParty belonging to their banking community; and • The TargetTARGET Service Desk, to act on behalf of any partyParty. |

| | |
|--------------------|---|
| Id | RTGS.UR.RTGS.UI.ALL.050 |
| Name | Access rights |
| Description | All services 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 associated with the user. |

| | |
|--------------------|---|
| Id | RTGS.UR.RTGS.UI.ALL.060 |
| Name | Four-eyes (confirm, revoke, amend) |
| Description | All services Services shall provide the functionality to use the four-eyes approval process through U2A interface , allowing the authoriser to confirm, revoke or amend. |

4.2 USER INTERACTION FOR FUTURE RTGS

4.2.1 Query

The User Interaction section covers ~~intra-day and historical~~intraday queries. For ~~intra-day~~intraday queries, the Value Date would ~~be per~~by default ~~be~~ the current ~~business day, while for historical queries the user can select the range of Value Date (from to) as from the next~~ business day.

For U2A queries, the party BIC and the account number would be deduced from the data scope of the user. The data scope is described in the User Rights and Access UR / Overview.

The extended list of the selection criteria and the output of the queries ~~would~~shall be defined in the UDFS.

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 / files |
| Description | <p>The RTGS service shall provide the functionality to query the status and details of all payments on any Account<u>account</u>. The user shall specify at least one<u>can query within his data scope, which is determined by the Party BIC and the DCA number (Party BICs and DCA numbers in case of the following mandatory selection criteria: a Central Bank as a user)</u>. In addition the query shall allow the user to specify any combination of mandatory or the following optional selection criteria.</p> <p>The following payment types can be queried:</p> <ul style="list-style-type: none"> • Payments • Warehoused payments • Liquidity transfers • AS Transactions <p>Mandatory selection criteria:</p> <ul style="list-style-type: none"> • account number • Party BIC of Account Owner or AS BIC • Value Date (from to) (current business day as default) <p><u>Optional selection criteria:</u></p> <ul style="list-style-type: none"> • Entry Time (from-to) • Settlement Time (from-to) • Payment type • Priority • Debit/Credit • Sender BIC • Receiver BIC • Specific Amount or amount range (from - to) • File Reference • Status • <u>Either Party Name or Party BIC</u> • Transaction reference • Counterpart country • Currency code • <u>DCA number</u> <p>The query shall return all business attributes of the payments including the processing status. When a file is queried, the status of the file would be also provided with the remaining business attributes.</p> |

| | |
|-------------|--|
| Id | RTGS.UR.RTGS.UI.020 |
| Name | Query message |
| Description | <p>The RTGS service shall provide the functionality to query any message in xml<u>XML</u> format. The user shall specify at least one<u>can query within his data scope, which is determined by the Party BIC and the DCA number (Party BICs and DCA numbers in case of the following mandatory selection criteria: a Central Bank as a user).</u> In addition the query shall allow the user to specify any combination of mandatory or the following optional selection criteria.</p> <p><u>Mandatory selection criteria:</u></p> <ul style="list-style-type: none"> • account number • Party BIC of Account Owner • Value Date (from-to) (current business day as default) <p><u>Optional selection criteria:</u></p> <ul style="list-style-type: none"> • Entry Time (from-to) • Message type • Status • Amount • Inbound or outbound • Sender BIC • Receiver BIC • <u>Either Party Name or Party BIC</u> • Transaction reference • <u>DCA number</u> <p>The query shall return the message in xml<u>XML</u> format, including the processing status.</p> <p>This query shall only be provided in U2A mode.</p> |

| | |
|-------------|--|
| Id | RTGS.UR.RTGS.UI.030 |
| Name | Query account balance |
| Description | <p>The RTGS service shall provide the functionality to query the balance on any Account<u>account</u>. The user shall specify at least one<u>can query within his data scope, which is determined by the Party BIC and the DCA number (Party BICs and DCA numbers in case of the following mandatory selection criteria: a Central Bank as a user).</u> In addition the query shall allow the user to specify any combination of mandatory or the following optional selection criteria. This query is also relevant to query liquidity on AS Level.</p> |

| | |
|--|--|
| | <p><u>Mandatory selection criteria:</u></p> <ul style="list-style-type: none"> • account number • Party BIC of Account Owner <p><u>Optional selection criteria:</u></p> <ul style="list-style-type: none"> • Value Date (from-to) (current business day as default) <ul style="list-style-type: none"> • <u>DCA Number</u> • <u>Either Party BIC or</u> Party Name <p>The query shall return the current and projected account balance and all business attributes of the account(s).</p> |
|--|--|

| | |
|-------------|--|
| Id | RTGS.UR.RTGS.UI.040 |
| Name | Query reservations |
| Description | <p>The RTGS service shall provide the functionality to query all reservations on any Account<u>account</u>. The user <u>can query within his data scope, which is determined by the Party BIC and the DCA number (Party BICs and DCA numbers in case of a Central Bank as a user)</u>. In addition the query shall <u>allow the user to specify at least one any combination</u> of the following mandatory<u>optional</u> selection criteria.</p> <p><u>Mandatory selection criteria:</u></p> <ul style="list-style-type: none"> • Account Number • Party BIC of Account Owner <p><u>Optional selection criteria:</u></p> <ul style="list-style-type: none"> • <u>DCA Number</u> • <u>Either Party BIC or</u> Party Name <p>The query shall return all business attributes of the reservations, including the defined value, which equals to the reserved value minus all the debits, and the pending value in case<u>Pending Value where</u> the original amount to be reserved was not entirely reserved</p> |

| | |
|-------------|---|
| Id | RTGS.UR.RTGS.UI.050 |
| Name | Query limits <u>Limits</u> |
| Description | <p>The RTGS service shall provide the functionality to query all limits<u>Limits</u> (multilateral and bilateral limit<u>Limit</u>) on any Account<u>account</u>. The user <u>can</u></p> |

| | |
|--|--|
| | <p><u>query within his data scope, which is determined by the Party BIC and the DCA number (Party BICs and DCA numbers in case of a Central Bank as a user)In addition the query shall allow the user to specify at least oneany combination</u> of the following mandatory<u>optional</u> selection criteria.</p> <p><u>Mandatory selection criteria:</u></p> <ul style="list-style-type: none"> • Account Number • Party BIC of Account Owner • <p><u>Optional selection criteria:</u></p> <ul style="list-style-type: none"> • DCA Number • Either Party BIC or Party Name <p>The query shall return all business attributes of the limits<u>Limits</u>.</p> |
|--|--|

| | |
|-------------|---|
| 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 <u>a</u> U2A interface. It should be distinguished between normal <u>Normal</u> information provided in pull mode and should be distinguished from alert broadcasts information provided in push mode. |

| | |
|-------------|---|
| Id | RTGS.UR.RTGS.UI.110 |
| Name | Query account statement |
| Description | <p>The RTGS service shall provide the functionality to query on the Account<u>account</u> statement. The user shall specify at least one<u>can query within his data scope, which is determined by the Party BIC and the MCA number (Party BICs and MCA numbers in case of the following mandatory selection criteria. a Central Bank as a user)</u>In addition the query shall allow the user to specify any combination of mandatory or the following optional selection criteria.</p> <p><u>Mandatory selection criteria:</u></p> <ul style="list-style-type: none"> • Account Number • Party BIC of Account Owner |

| | |
|--|---|
| | <p><u>Optional selection criteria:</u></p> <ul style="list-style-type: none"> • Value Date (from-to) (current business day as default) • <u>DCA Number</u> • <u>Either Party BIC or</u> Party Name <p>The query shall return all business attributes of the account statement.</p> <p>Note: More information about producing, sending and downloading <u>efa</u> report can be found in the Information and Reporting section (of the Shared Services URD-SHRD).</p> |
|--|---|

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 pending 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.135 |
| Name | Create a payment |
| Description | <p>The RTGS-service shall provide the functionality to create a payment through U2A interface.</p> <p>Note: The possibility<u>ability</u> to enter payments would be subject to necessary rights, so allowing an organisation could<u>to</u> control the use of this feature.</p> |

| | |
|-------------|--|
| Id | RTGS.UR.RTGS.UI.140 |
| Name | Modify a payment |
| 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 |
| 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.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 payment |
| Description | The RTGS service shall provide a functionality to create a back-up payment through U2A interface. This action has to be activated by the CB on participant level. |

~~This~~

| | |
|---------------------------|--|
| <u>Id</u> | <u>RTGS.UR.RTGS.UI.200</u> |
| <u>Name</u> | <u>Create an immediate reservation order</u> |
| <u>Description</u> | <u>RTGS shall provide the functionality to create a reservation order through the U2A interface and the A2A interface.</u> |

| | |
|---------------------------|--|
| <u>Id</u> | <u>RTGS.UR.RTGS.UI.210</u> |
| <u>Name</u> | <u>Amend an immediate reservation order</u> |
| <u>Description</u> | <u>RTGS shall provide the functionality to amend a reservation order through the U2A interface and the A2A interface.</u> |
| <u>Id</u> | <u>RTGS.UR.RTGS.UI.220</u> |
| <u>Name</u> | <u>Delete an immediate reservation order</u> |
| <u>Description</u> | <u>RTGS shall provide the functionality to delete a reservation order through the U2A interface and the A2A interface.</u> |

The table below shows a summary of the above described queries and actions in U2A and A2A mode.

| Functionality | Query/ Actions <u>Action</u> | U2A | A2A |
|----------------|---|----------|----------|
| RTGS | Query Payments / <u>payments</u> /files | X | X |
| RTGS | View <u>Query</u> account balance | X | X |
| RTGS | Query reservation | X | X |
| RTGS | Query Limit <u>Limits</u> | X | X |
| RTGS | Query message | X | |
| RTGS | Query Broadcast | X | |
| RTGS | Query account statement | X | X |
| RTGS | Change order of payments in a queue | X | X |
| RTGS | Create /Modify/Cancel a payment | X | X |
| RTGS | Revoke an AS file | X | X |
| RTGS | Create broadcast <u>a liquidity transfer</u> | X | <u>X</u> |
| <u>RTGS</u> | <u>Create a back-up payment</u> | <u>X</u> | |
| <u>RTGS</u> | <u>Create/Amend/Delete an immediate reservation order</u> | <u>X</u> | <u>X</u> |
| Reference Data | Create/Amend/Delete a Standing Order for Limit) | X | X |
| Reference Data | Grant Access rights to individual users | X | |

Table 100: Summary of queries and actions in U2A and A2A mode for future RTGS services

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~~Mandate
- ▶ 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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