

Liquidity management

R2023.NOV

Trainer Name

Banca d'Italia

Banca d'Italia

TIPS User Training Course

Date – Training type

Day 2 - Session TIPS.TR.FN.050

- 1 Interactions with T2, RIX and other RTGS systems**
- 2 Liquidity Transfer management**
- 3 Closure of RTGS Systems**
- 4 Change of business date of RTGS Systems**

1 Interactions with T2, RIX and other RTGS systems

2 Liquidity Transfer management

3 Closure of RTGS Systems

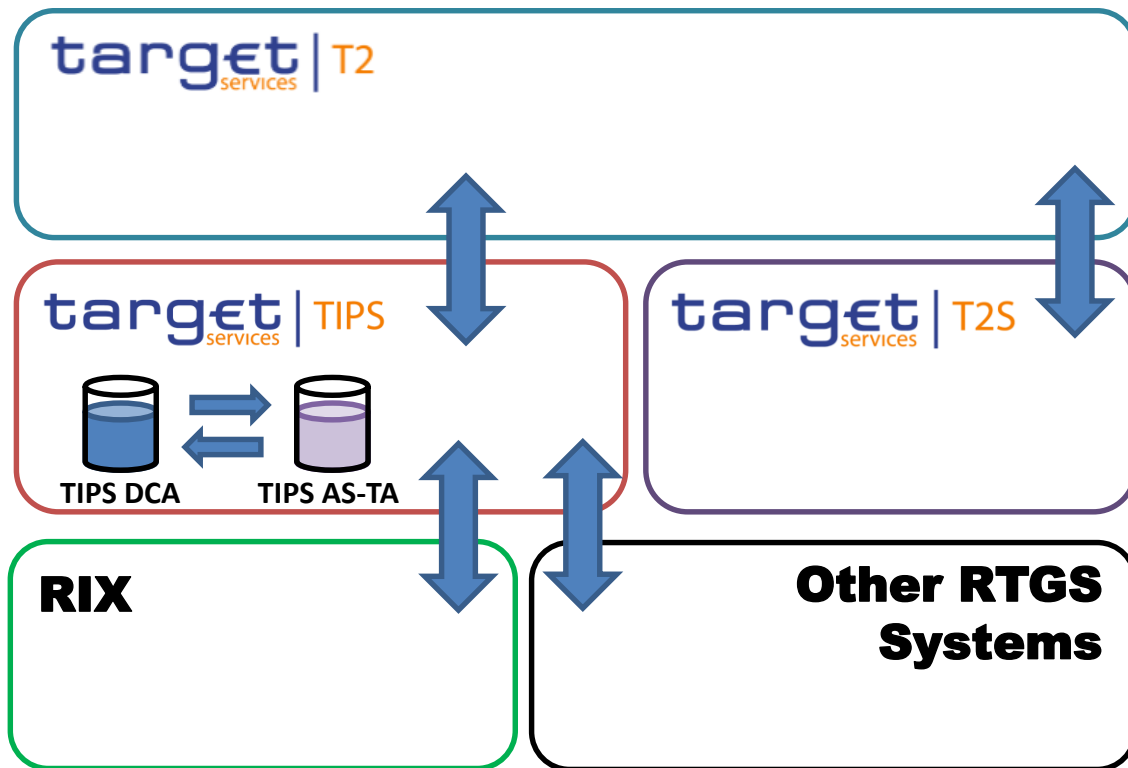
4 Change of business date of RTGS Systems

Interactions with T2, RIX and other RTGS Systems (1/3)

- TIPS provides instant payment settlement services in Central Bank Money. To this end, TIPS interacts with T2, RIX and might interact with other RTGS Systems. There are three main purposes:
 - **Liquidity Transfer management**
 - Settlement of liquidity transfers for funding/defunding TIPS Accounts and TIPS AS technical account.
 - **Closure of the RTGS System**
 - Monitoring of the RTGS status for acceptance of inbound/outbound liquidity transfers;
 - Preventing inconsistencies in the liquidity transfer management.
 - **Change of business date of the RTGS System**
 - Applying the suitable value date to Instant Payments, positive Recall Responses and Liquidity Transfers;
 - Reconciliation purposes (e.g. reports and TIPS General Ledger).

Interactions with T2, RIX and other RTGS Systems (2/3)

- TIPS provides liquidity management functionalities to allow the transfer of liquidity **within TIPS**, **across TARGET Services** and **between TIPS Accounts and Accounts in the relevant RTGS System**, in both directions.



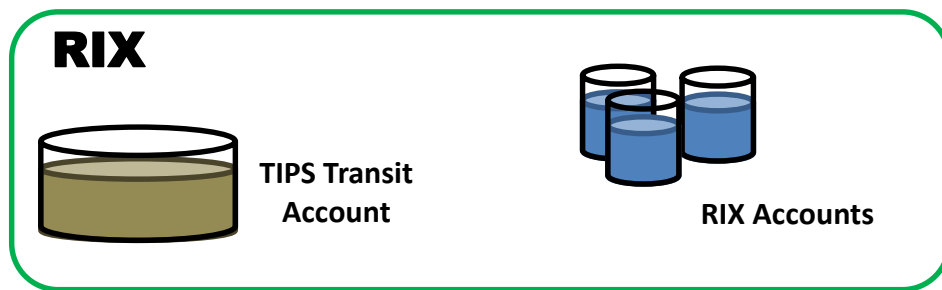
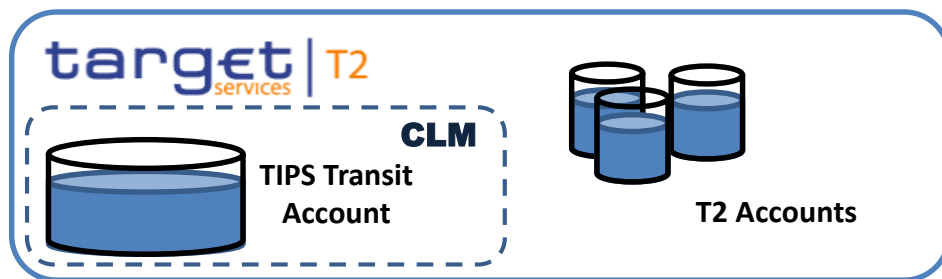
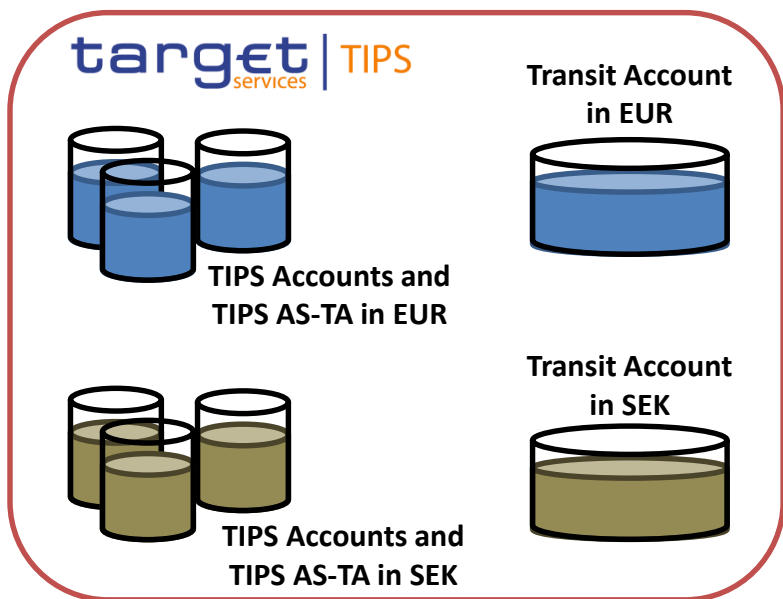
Liquidity transfers between TIPS Accounts and RTGS Accounts are performed:

- Only if denominated in the same currency
- By moving the liquidity through Transit Accounts.

Liquidity transfers within TIPS are performed only between TIPS Accounts and TIPS AS Technical Accounts.

Interactions with T2, RIX and other RTGS Systems (3/3)

- One Transit Account is defined in TIPS for each currency.
 - The Central Bank responsible for the RTGS system related to a given currency is also accountable for the Transit Account in TIPS
 - The **ECB** is responsible for the **Transit Account denominated in EUR**
 - The **Riksbank** is responsible for the **Transit Account denominated in SEK**



1 **Liquidity Management features**

2 **Liquidity Transfer management**

Overview

Inbound Liquidity Transfer

Outbound Liquidity Transfer

Intra-service Liquidity Transfer

Messages

3 **Closure of RTGS Systems**

4 **Change of business date of RTGS Systems**

Overview

TIPS foresees three different types of Liquidity Transfer:

- **Inbound LT** (from an RTGS System/T2/T2S to TIPS)
- **Outbound LT** (from TIPS to an RTGS System/T2/T2S)
- **Intra-service LT** (from a TIPS Account to a TIPS AS Technical Account or vice versa)

Liquidity Transfer Type	TIPS	TARGET Services				RIX
		TARGET2	T2-CLM	T2-RTGS	T2S	
Inbound LT		Until March 2023	From March 2023	From March 2023	From March 2023	From May 2022
Outbound LT		Until March 2023	From March 2023	From March 2023	From March 2023	From May 2022
Intra-service LT	From November 2021 (TIPS R4.0)					

Overview – The message payload

camt.050

- Instruction ID
- Creditor BIC
- TIPS Account owner**
- Creditor Account
- TIPS Account**
- Transferred Amount
- Debtor BIC
- Debtor Account

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- Instruction ID
- Creditor BIC
- Creditor Account
- Transferred Amount
- Debtor BIC
- TIPS Account owner**
- Debtor Account
- TIPS Account**

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- Instruction ID
- Creditor BIC
- PSP whose position has to be funded**
- Creditor Account
- TIPS ASTA(*) used by the ACH to collect the liquidity set aside by its participants for funding their positions**
- Transferred Amount
- Debtor BIC
- TIPS Account owner**
- Debtor Account
- TIPS Account**

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- Instruction ID
- Creditor BIC
- TIPS Account owner**
- Creditor Account
- TIPS Account**
- Transferred Amount
- Debtor BIC
- PSP whose position has to be defunded**
- Debtor Account
- TIPS ASTA used by the ACH to collect the liquidity set aside by its participants for funding their positions**

Inbound LT

Outbound LT

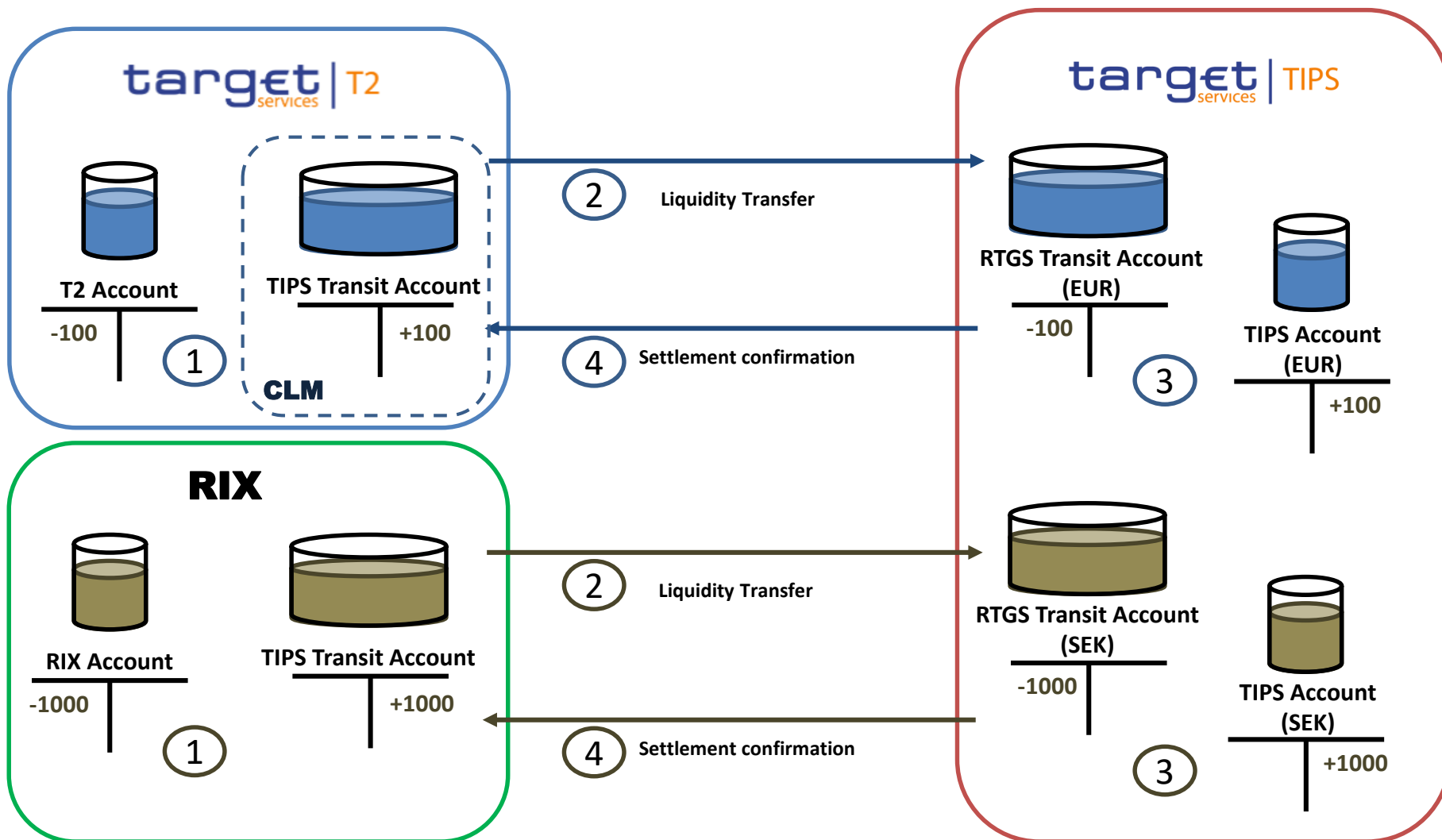
Intra-service LT - From TIPS DCA to TIPS ASTA

Intra-service LT - From TIPS ASTA to TIPS DCA

Overview - Inbound LT (1/2)

- An Inbound Liquidity Transfer moves liquidity:
 - from a non-EUR RTGS account (e.g. an account in RIX) to a TIPS Account denominated in the same currency;
 - from a T2 Account (i.e. MCA, CLM CB Account, OD Account, RTGS DCA, RTGS CB Account and RTGS sub-account) or a T2S Account (i.e. T2S DCA, T2S CB Account) to a TIPS Account. The settlement of such liquidity transfers does take place via the relevant transit account in T2-CLM only.
- Inbound Liquidity Transfer orders can be triggered only in the RTGS System/TARGET Services and are received by TIPS.
- Originators of Inbound Liquidity Transfer orders do not necessarily need to be TIPS Actors.
- A TIPS Account to be credited must be specified in the message.
- TIPS AS Technical Accounts cannot be used in Inbound LT processing.

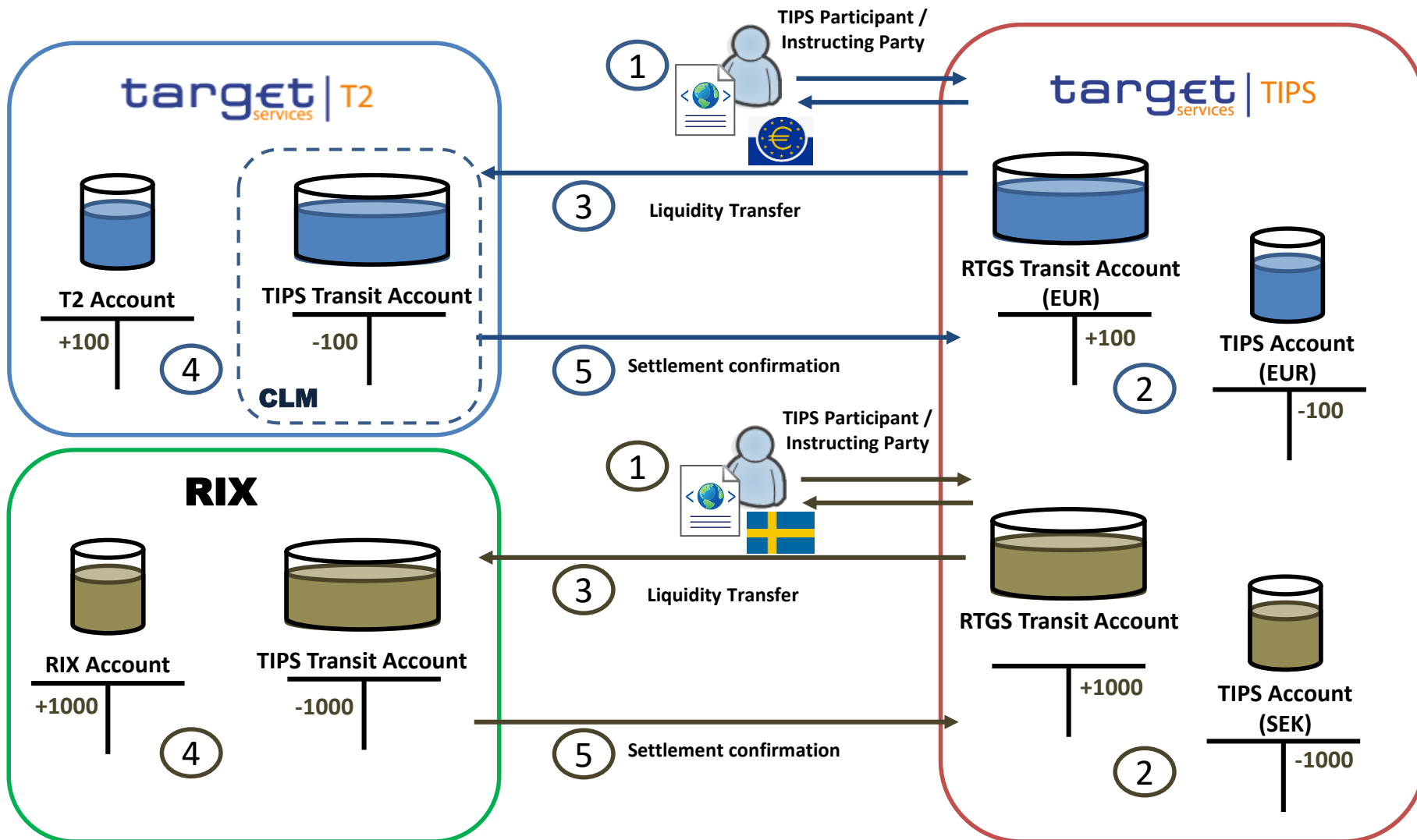
Overview - Inbound LT (2/2)



Overview - Outbound LT (1/2)

- An Outbound Liquidity Transfer moves liquidity:
 - from a TIPS Account to a non-EUR RTGS account (e.g. an account in RIX) denominated in the same currency;
 - from a TIPS Account to a T2 Account (i.e. MCA, CLM CB Account, OD Account, RTGS DCA, RTGS CB Account and RTGS sub-account) or a T2S Account (i.e. T2S DCA, T2S CB Account). The settlement of such liquidity transfers does take place via the relevant transit account in T2-CLM only.
- Outbound Liquidity Transfer orders can be triggered in TIPS. If the corresponding RTGS system supports pull functionality, Outbound Liquidity Transfer orders could also be triggered in the RTGS system.
- A TIPS Account to be debited must be specified in the message.
- TIPS AS Technical Accounts cannot be used in Outbound LT processing.

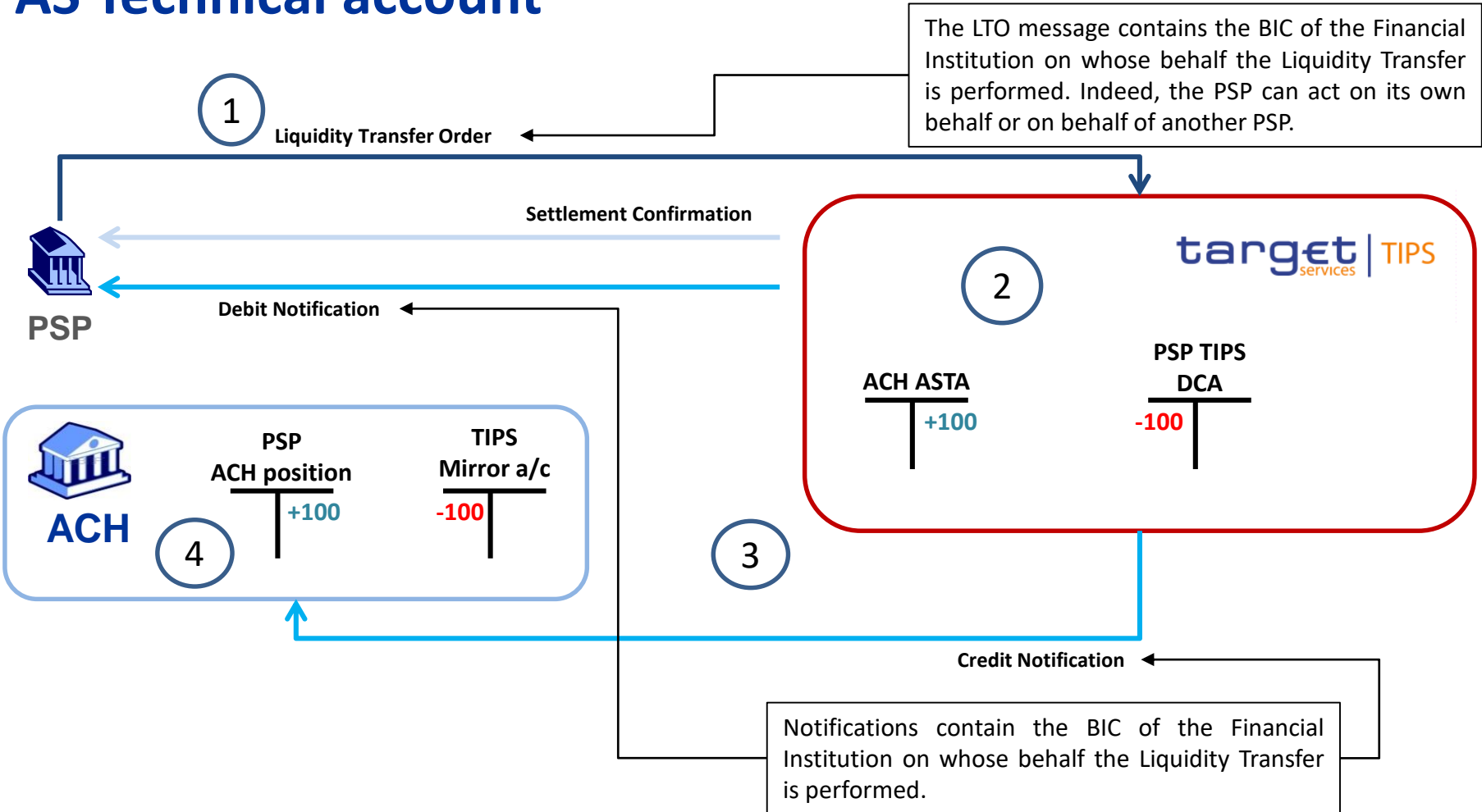
Overview - Outbound LT (2/2)



Overview – Intra-service LT

- An Intra-service Liquidity Transfer moves liquidity from a TIPS account to a TIPS AS Technical account (or vice versa) in the same currency.
- It is used to fund/defund a TIPS AS Technical account to allow Ancillary System to process Instant Payments in TIPS.
- Intra-service liquidity transfers cannot be performed between two different TIPS AS Technical Accounts nor between two different TIPS DCAs
- It shall not be possible to transfer liquidity between a TIPS AS Technical Account and one cash account held in a different TARGET service (i.e. T2 and T2S) or RTGS System.

Overview – Intra-service LT from a TIPS Account to a TIPS AS Technical account



LIQUIDITY CREDIT TRANSFER

Sender DN: <ou=dept_123, o=prtyabmmxxx, o=a2anet>
Message Identifier: MsgLT1ID

Instruction Identification: LT1ID
Creditor: **PSPBXXMMXXX**
Creditor Account: ACHASTA
Transferred Amount 100 EUR
Debtor: PRTYABMMXXX
Debtor Account: TIPSDCA
Settlement Date: 01/01/2021

Bank To Customer Debit Credit Notification

Sender DN: <ou=dept_123, o=tipsxepmxxx, o=a2anet>
Message Identifier: MsgLTNOTIF1ID

Notification Identifier: MsgLTNOTIF1ID
Account Identifier: ACHASTA
Notification Amount: 100 EUR
Credit Debit Indicator: CRDT
Status: BOOK
Debtor: PRTYABMMXXX
Creditor: **PSPBXXMMXXX**

Bank To Customer Statement

Sender DN: <ou=dept_123, o=tipsxepmxxx, o=a2anet>
Message Identifier: MsgIDRptSoA151217

Statement Identifier: 1
Account Identification: ACHASTA
Account Currency: EUR
Account Owner: ACH
Balance Type: CLBD
Amount: 700 EUR
Credit/Debit Indicator: CRDT
RTGS Business date: 01/01/2021

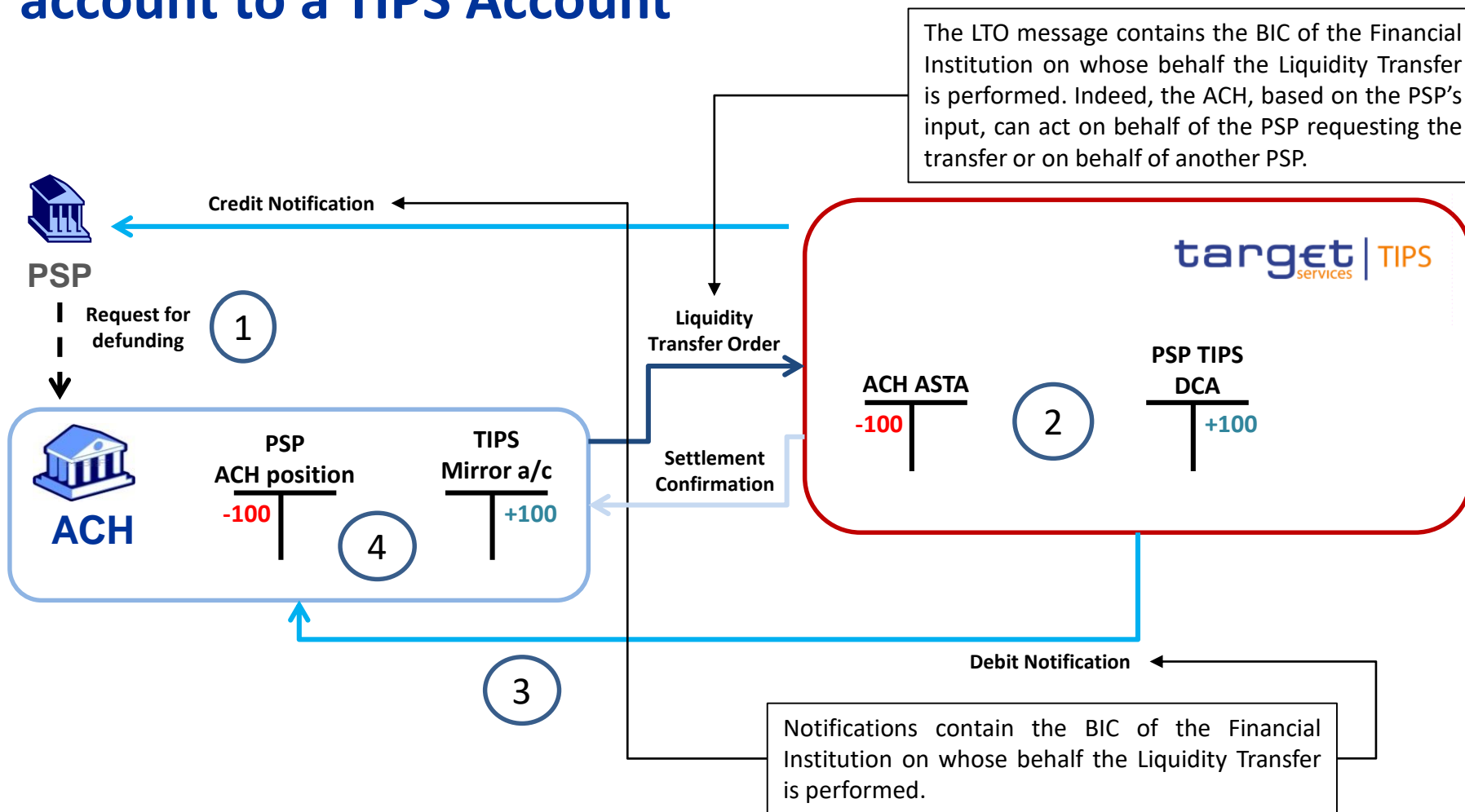
Transaction Reference: LT1ID
Transaction Amount: 100 EUR
Transaction Credit/Debit Indicator: CRDT
Transaction Status: BOOK
Settlement timestamp: 01/01/2021 11:00:00
Bank Transaction Code Family: RCDT
Bank transaction code: PMNT
Bank Transaction Code SubFamily: FICT

Transaction Account Balance: 600 EUR
Transaction Account Balance Type: BFTS

Transaction Account Balance: 700 EUR
Transaction Account Balance Type: FTTS

Transaction Amount: 100 EUR
Transaction Credit/Debit Indicator: CRDT
Transaction Originator BIC: PRTYABMMXXX
Transaction Beneficiary BIC: **PSPBXXMMXXX**

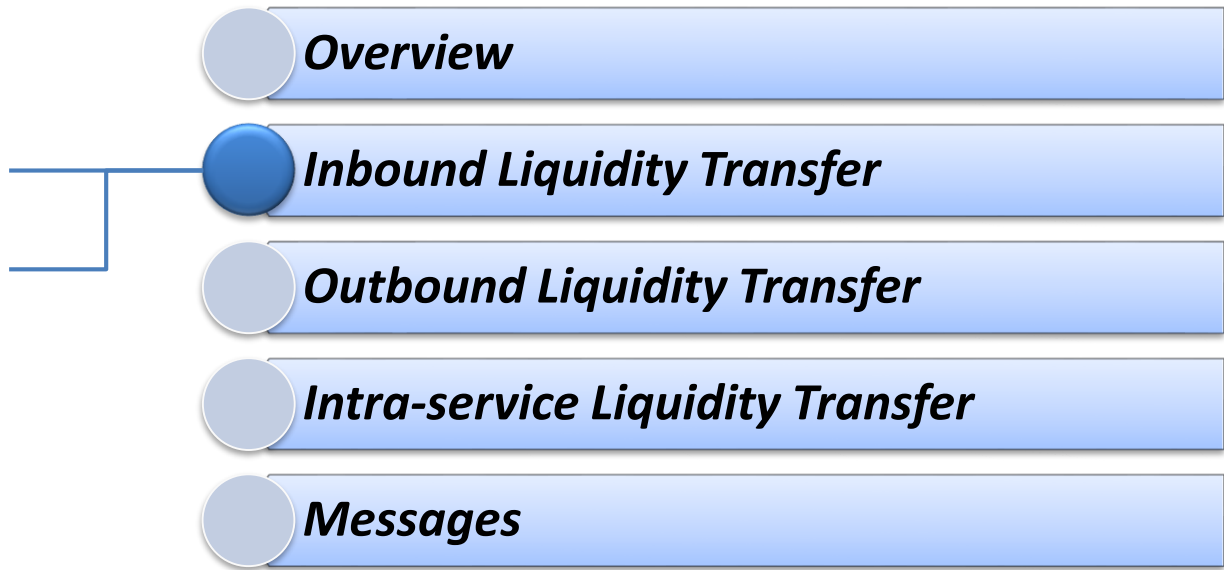
Overview – Intra-service LT from a TIPS AS Technical account to a TIPS Account



1 **Liquidity Management features**

2 **Liquidity Transfer management**

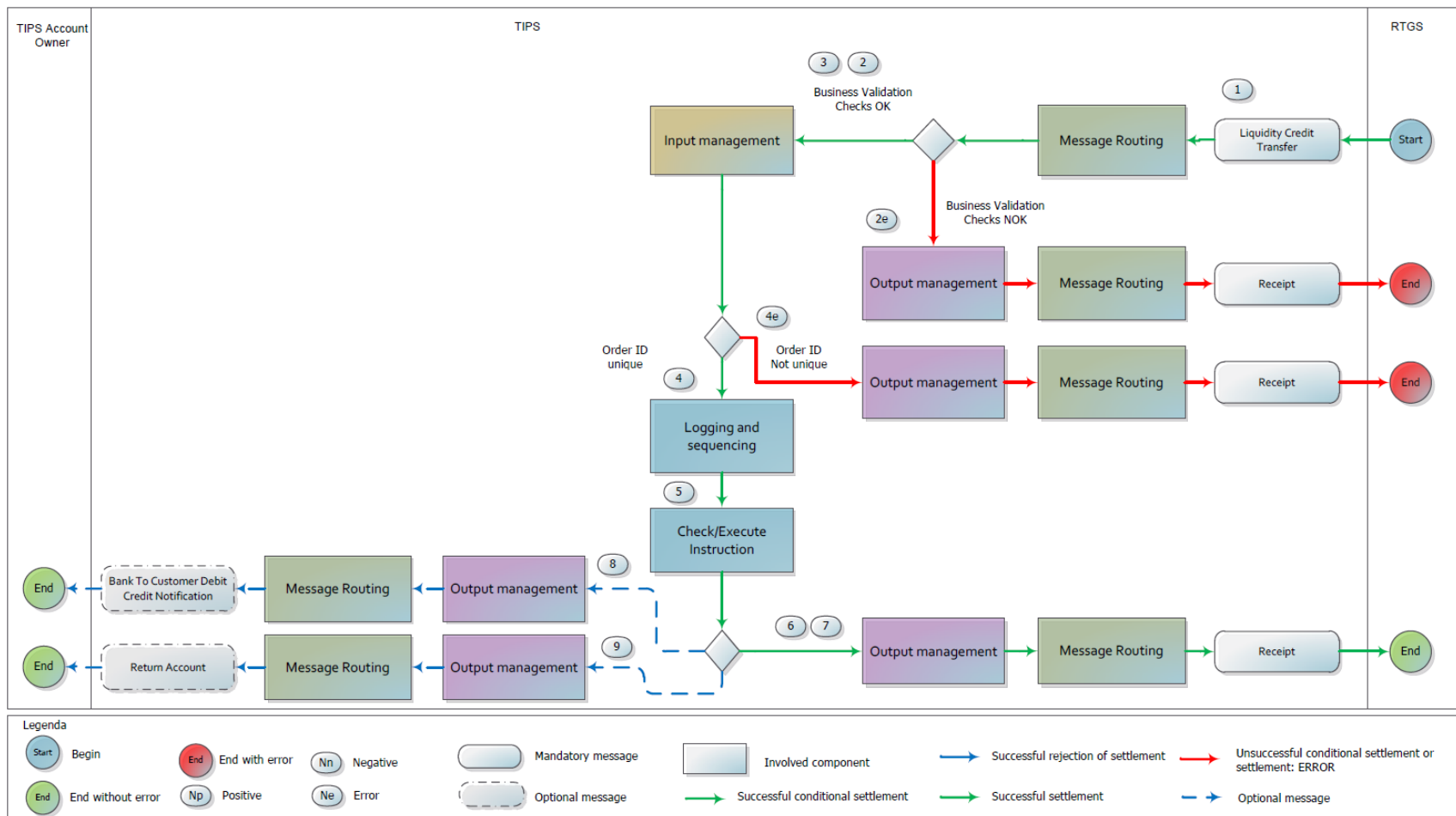
- Inbound Liquidity Transfer Flow
- Status Transition



3 **Closure of RTGS Systems**

4 **Change of business date of RTGS Systems**

Inbound Liquidity Transfer flow* - Overview



* The Liquidity Transfer order is initiated by the RTGS account holder in the relevant RTGS System.

Inbound Liquidity Transfer – Successful Scenario

TIPS ACCOUNT OWNER

RTGS

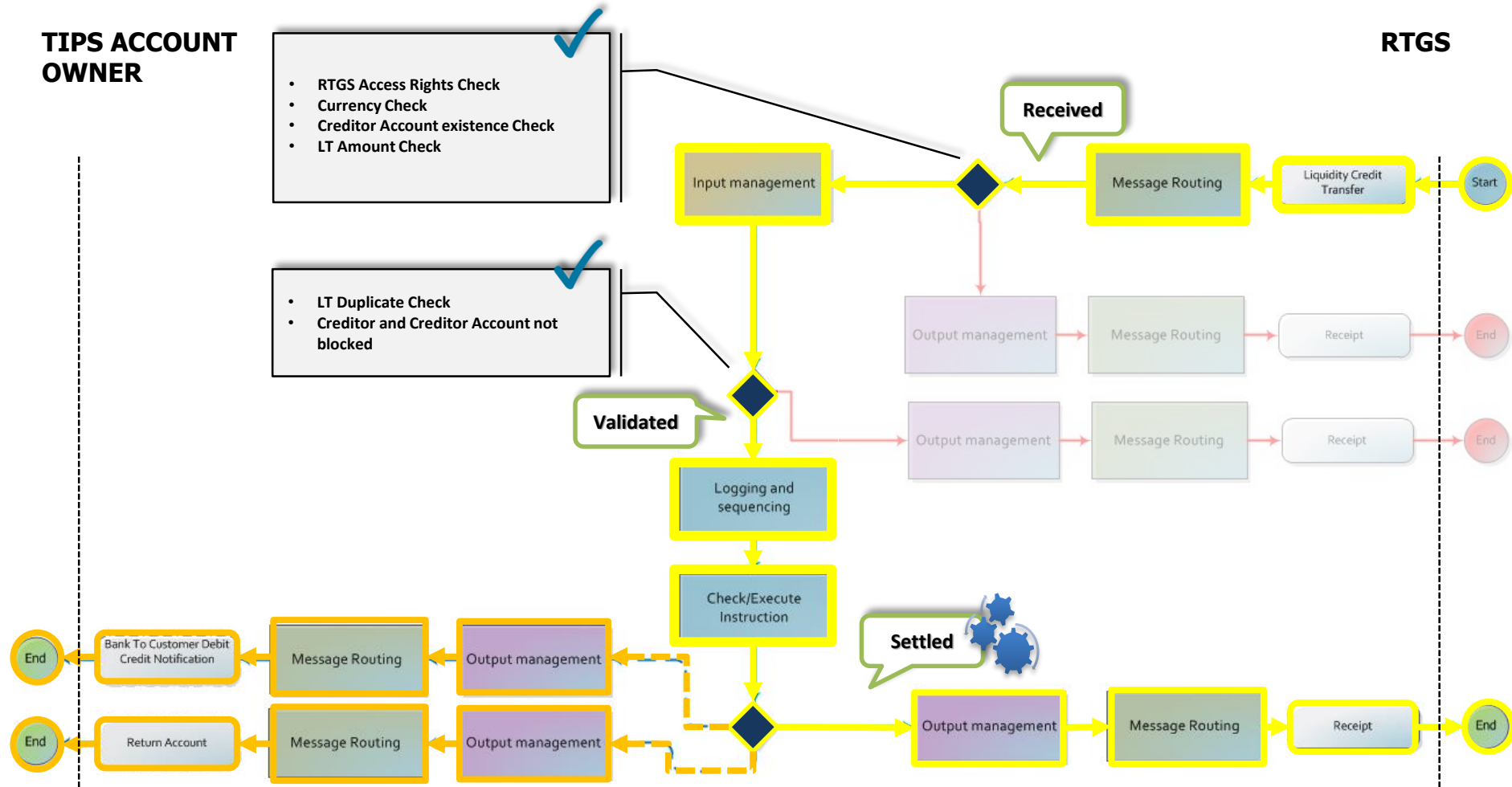
- RTGS Access Rights Check
- Currency Check
- Creditor Account existence Check
- LT Amount Check

- LT Duplicate Check
- Creditor and Creditor Account not blocked

Validated

Received

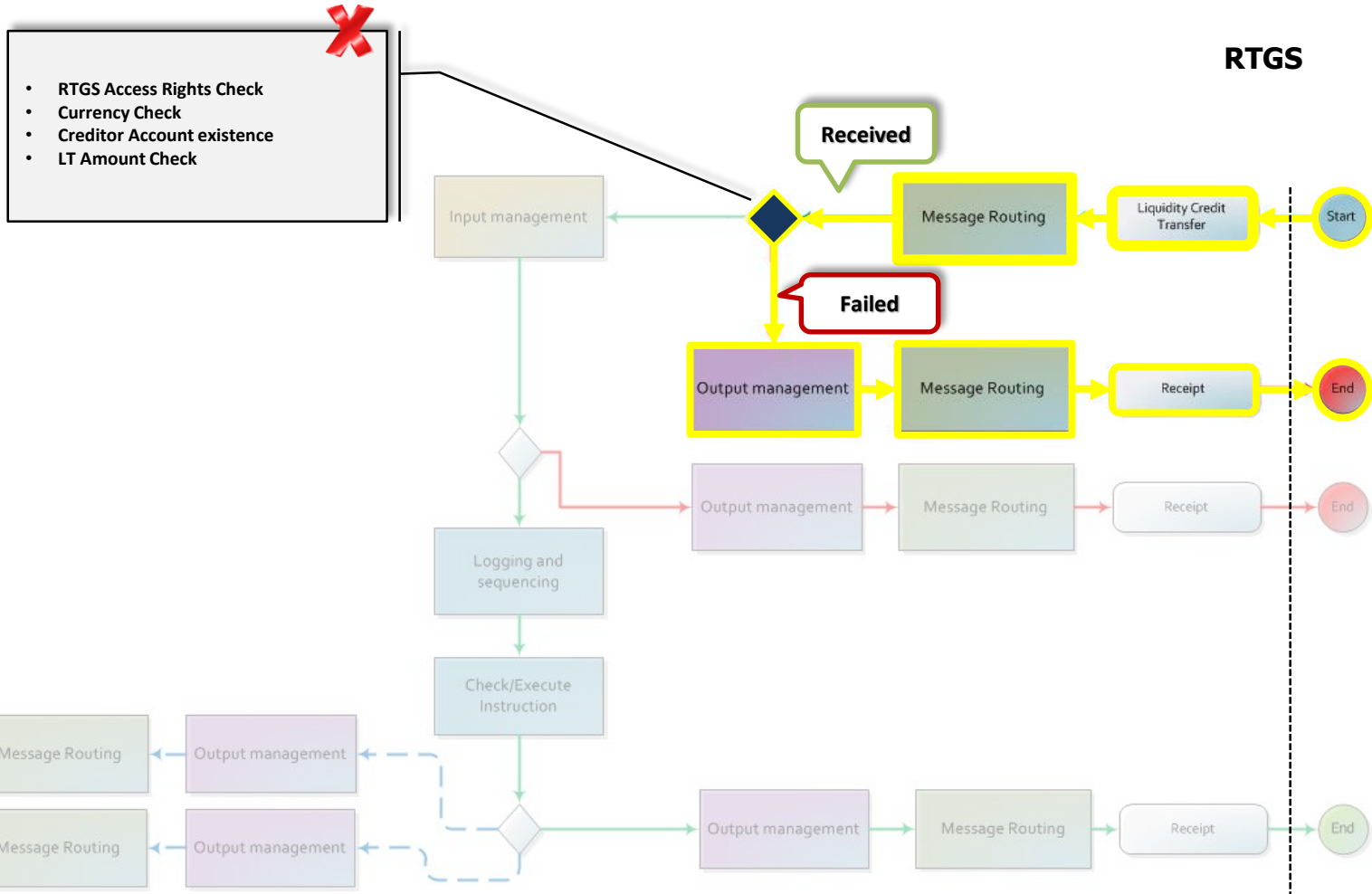
Settled



Inbound Liquidity Transfer – Unsuccessful Scenario (I)

TIPS ACCOUNT OWNER

RTGS



Inbound Liquidity Transfer – Unsuccessful Scenario (II)

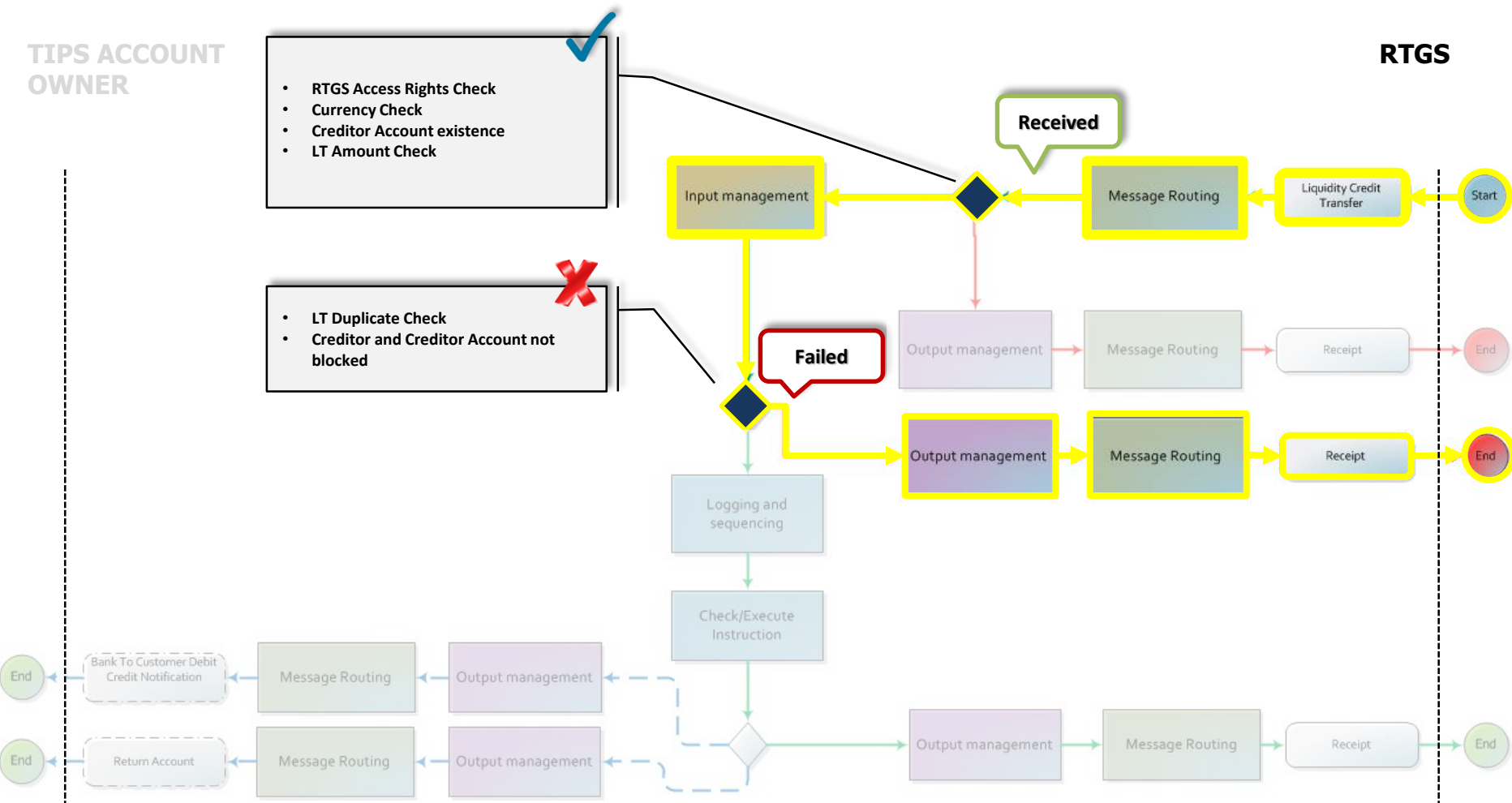
Duplicate Check fails

TIPS ACCOUNT OWNER

RTGS

- RTGS Access Rights Check
- Currency Check
- Creditor Account existence
- LT Amount Check

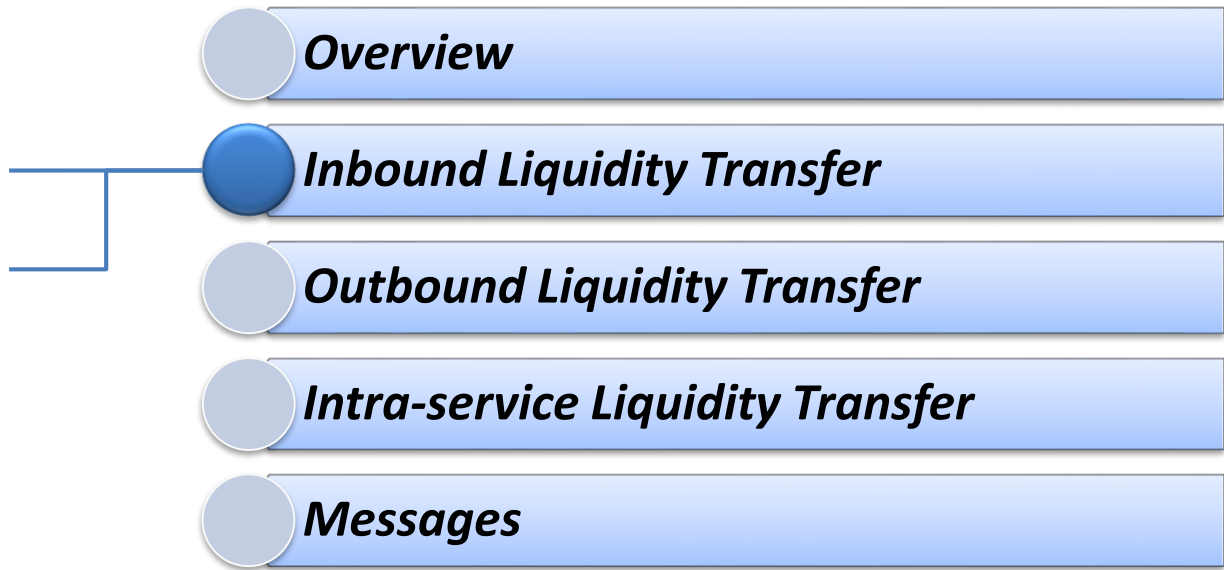
- LT Duplicate Check
- Creditor and Creditor Account not blocked



1 **Liquidity Management features**

2 **Liquidity Transfer management**

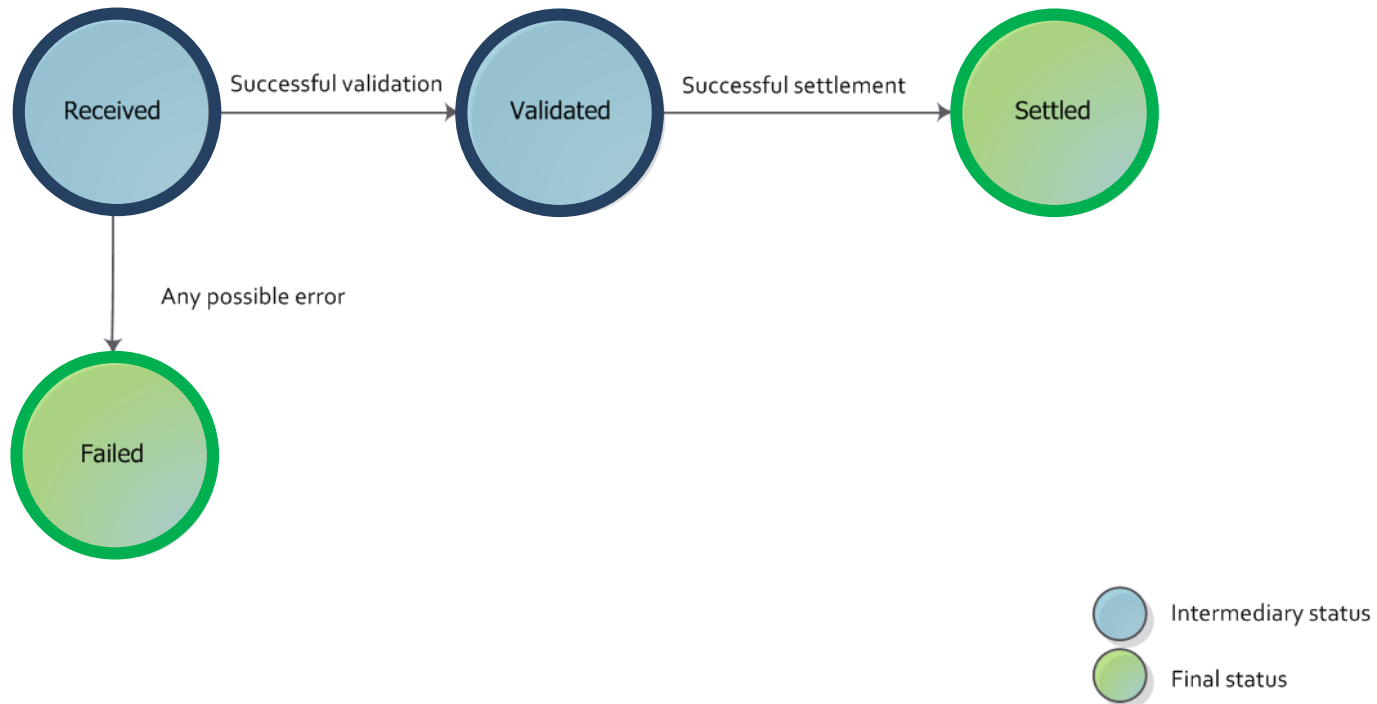
- Inbound Liquidity Transfer Flow
- Status Transition



3 **Closure of RTGS Systems**

4 **Change of business date of RTGS Systems**

Inbound Liquidity Transfer – Status transition



1 Liquidity Management features

2 Liquidity Transfer management

- Outbound Liquidity Transfer Flow
- Status Transition

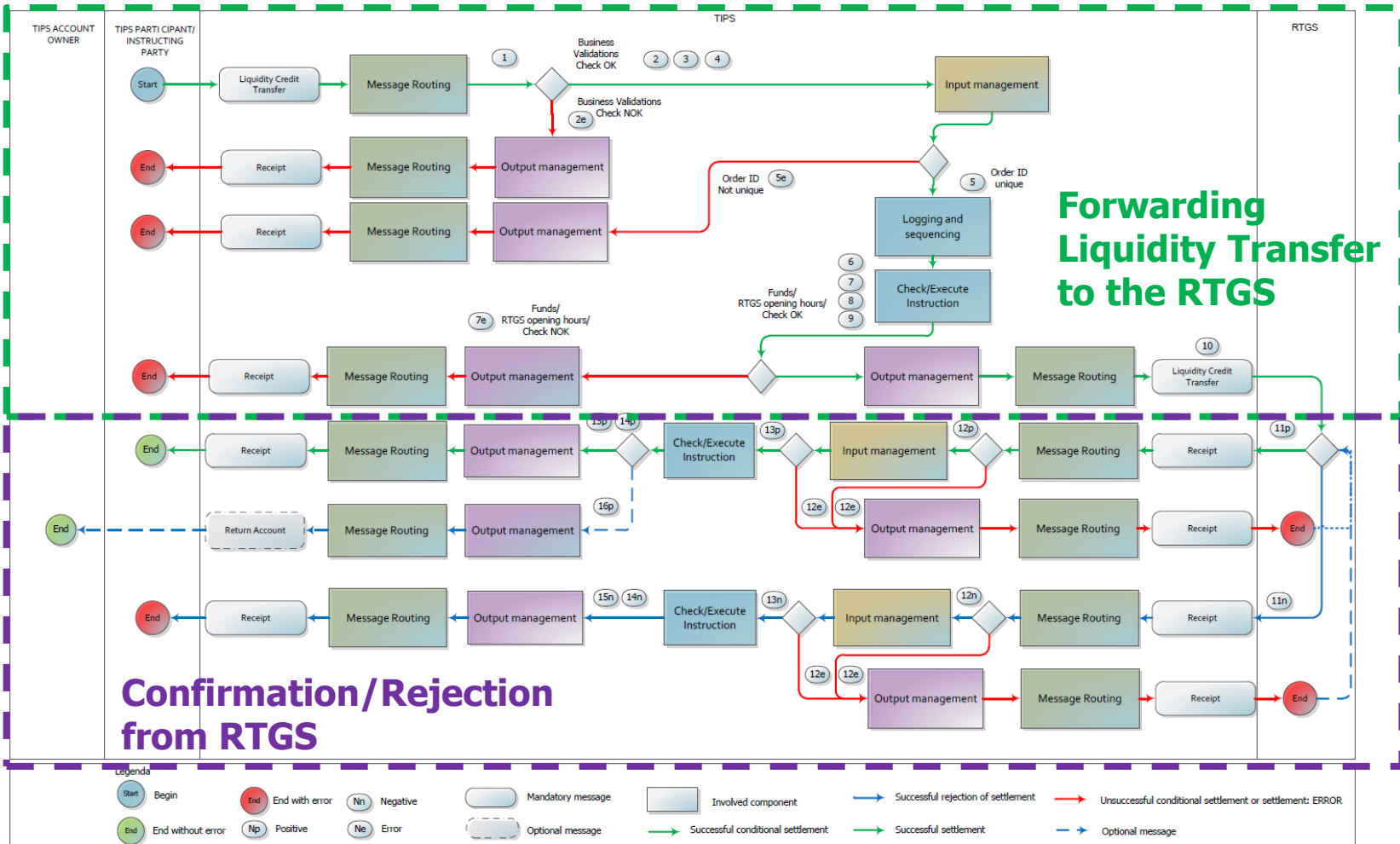


- Overview
- Inbound Liquidity Transfer
- Outbound Liquidity Transfer**
- Intra-service Liquidity Transfer
- Messages

3 Closure of RTGS Systems

4 Change of business date of RTGS Systems

Outbound Liquidity Transfer flow - Overview

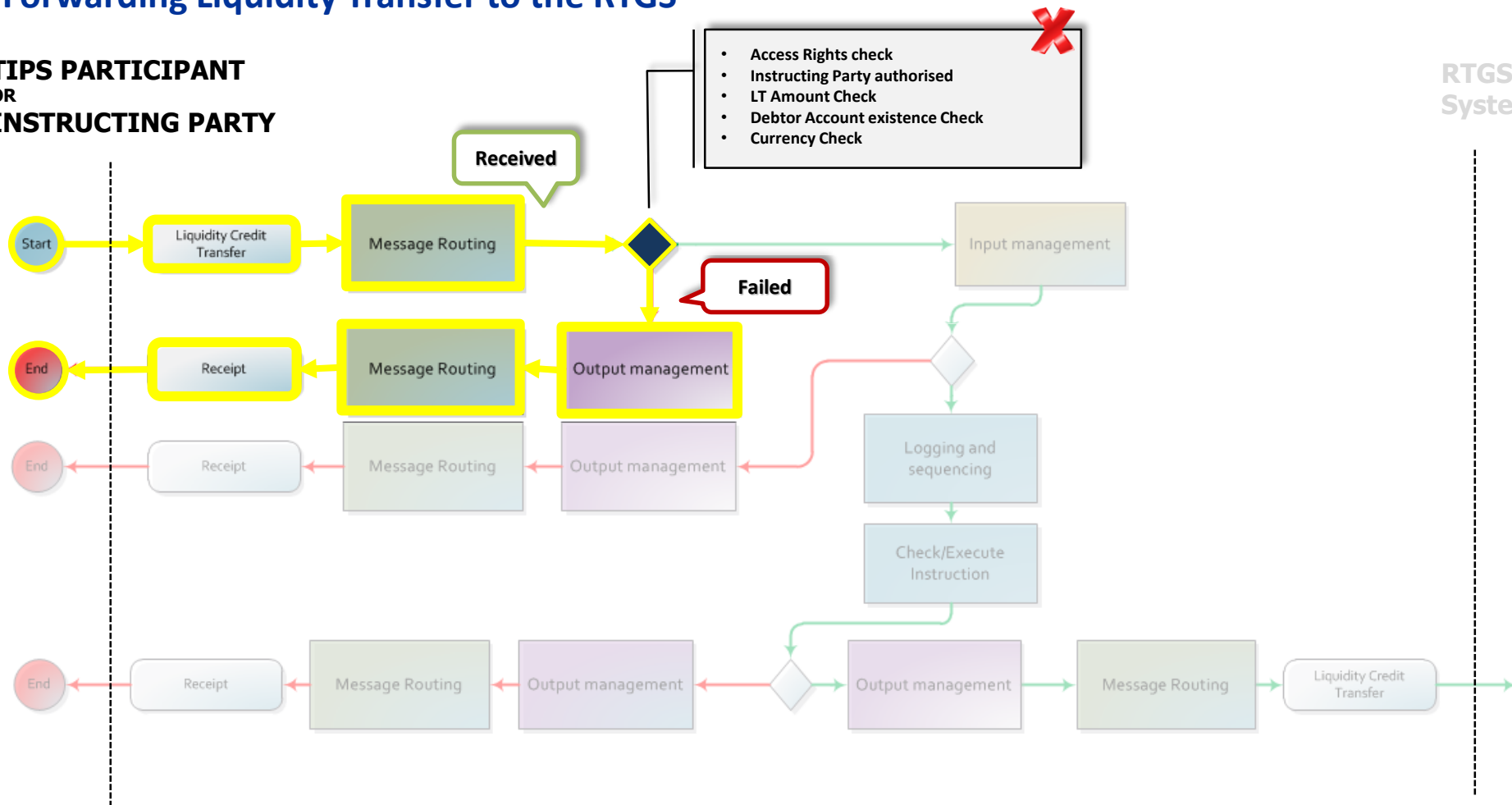


Outbound Liquidity Transfer flow-Unsuccessful Scenario (I)

Forwarding Liquidity Transfer to the RTGS

TIPS PARTICIPANT
OR
INSTRUCTING PARTY

RTGS
System

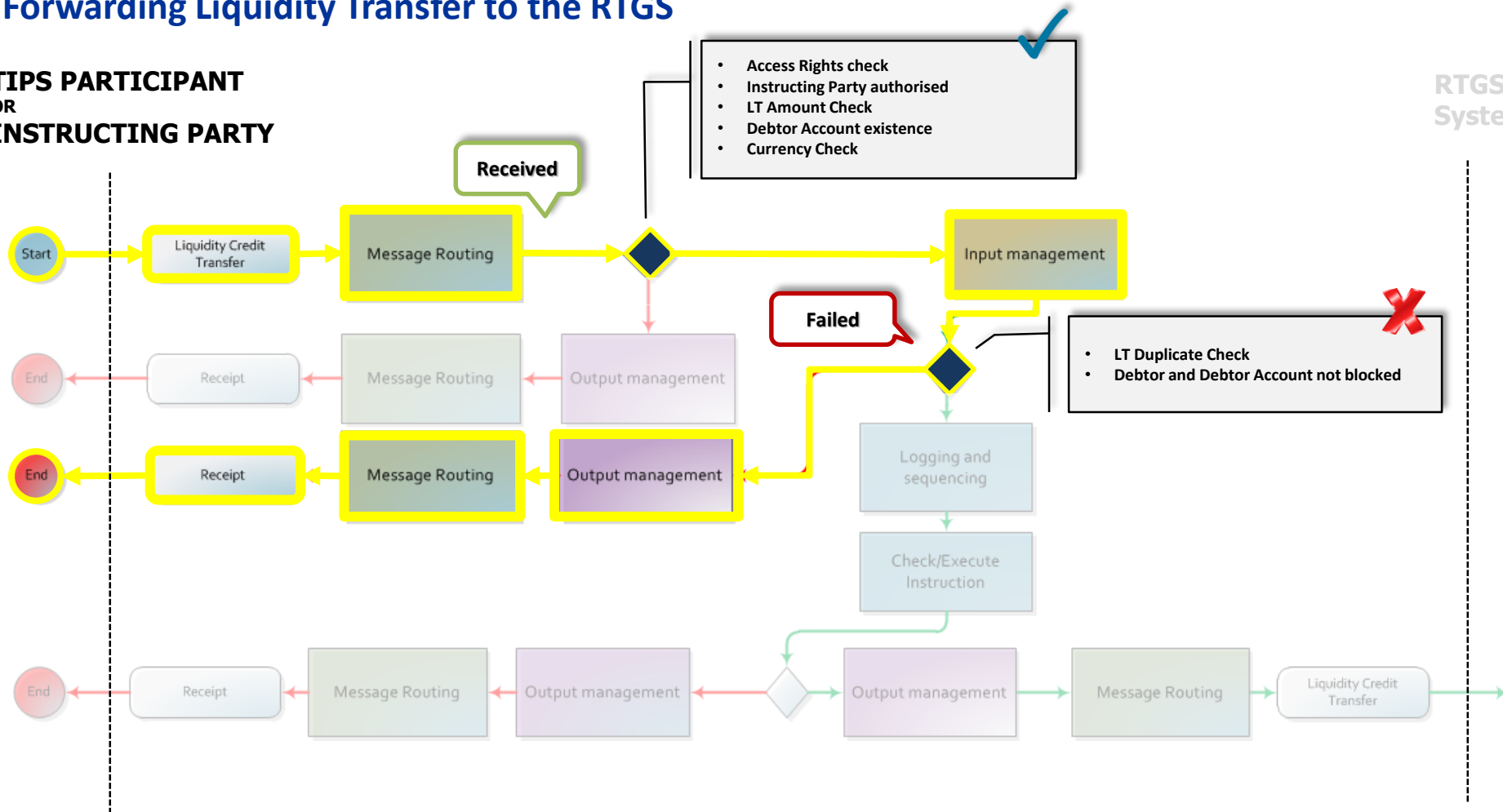


Outbound Liquidity Transfer flow-Unsuccessful Scenario (II)

Forwarding Liquidity Transfer to the RTGS

TIPS PARTICIPANT
OR
INSTRUCTING PARTY

RTGS
System

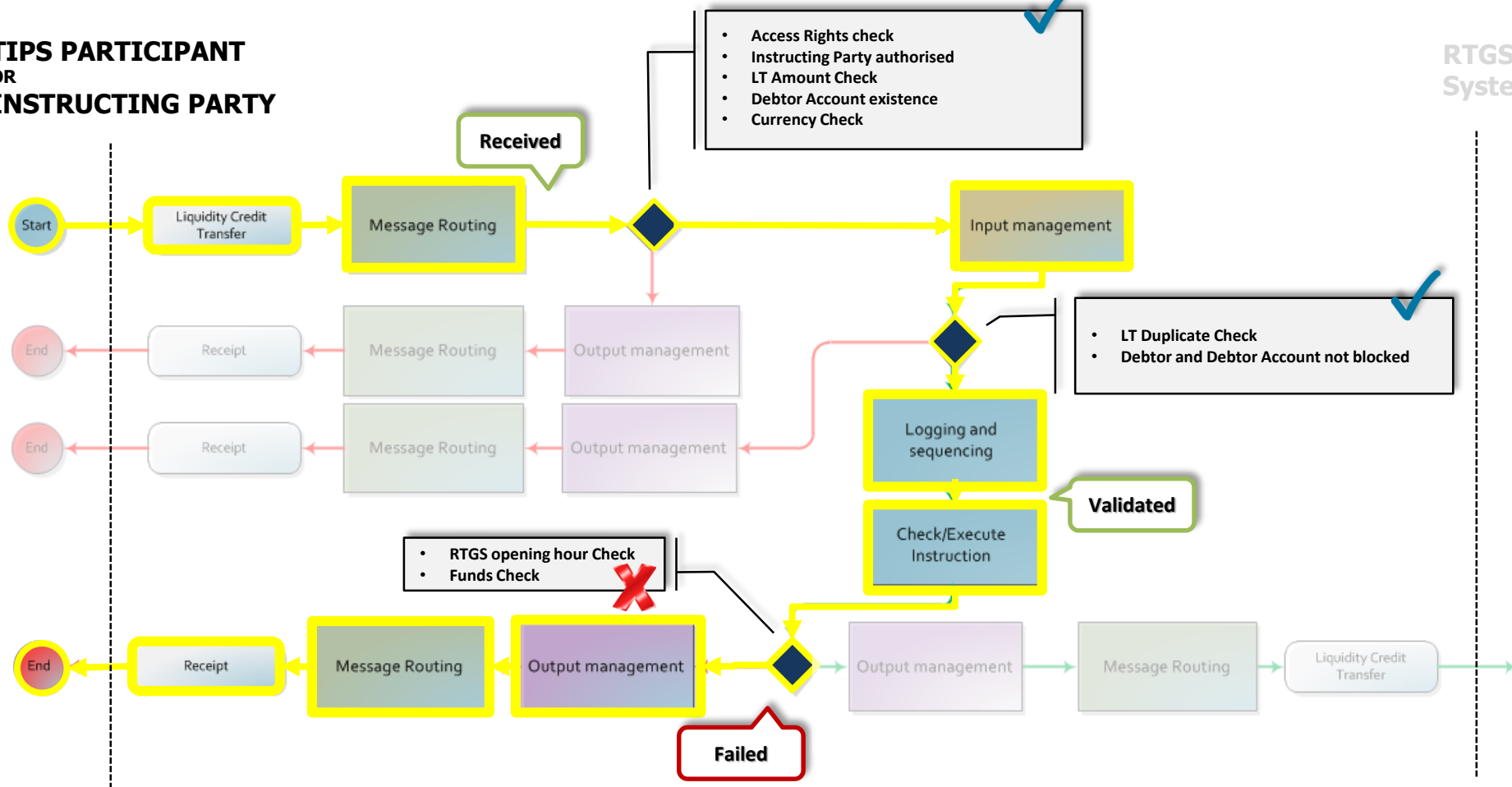


Outbound Liquidity Transfer flow-Unsuccessful Scenario (III)

Forwarding Liquidity Transfer to the RTGS

TIPS PARTICIPANT OR INSTRUCTING PARTY

RTGS System

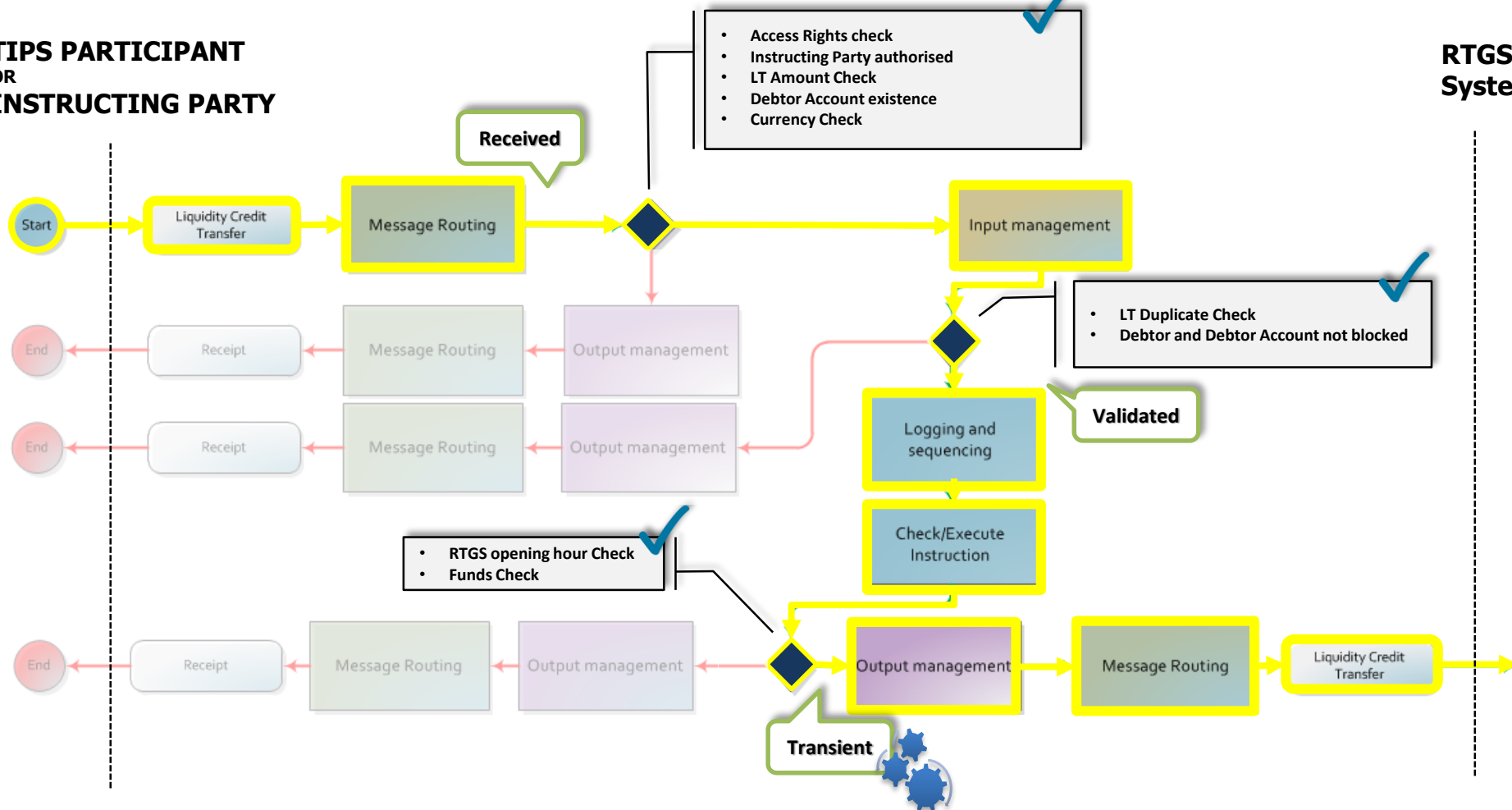


Outbound Liquidity Transfer flow - Successful Scenario

Forwarding Liquidity Transfer to the RTGS

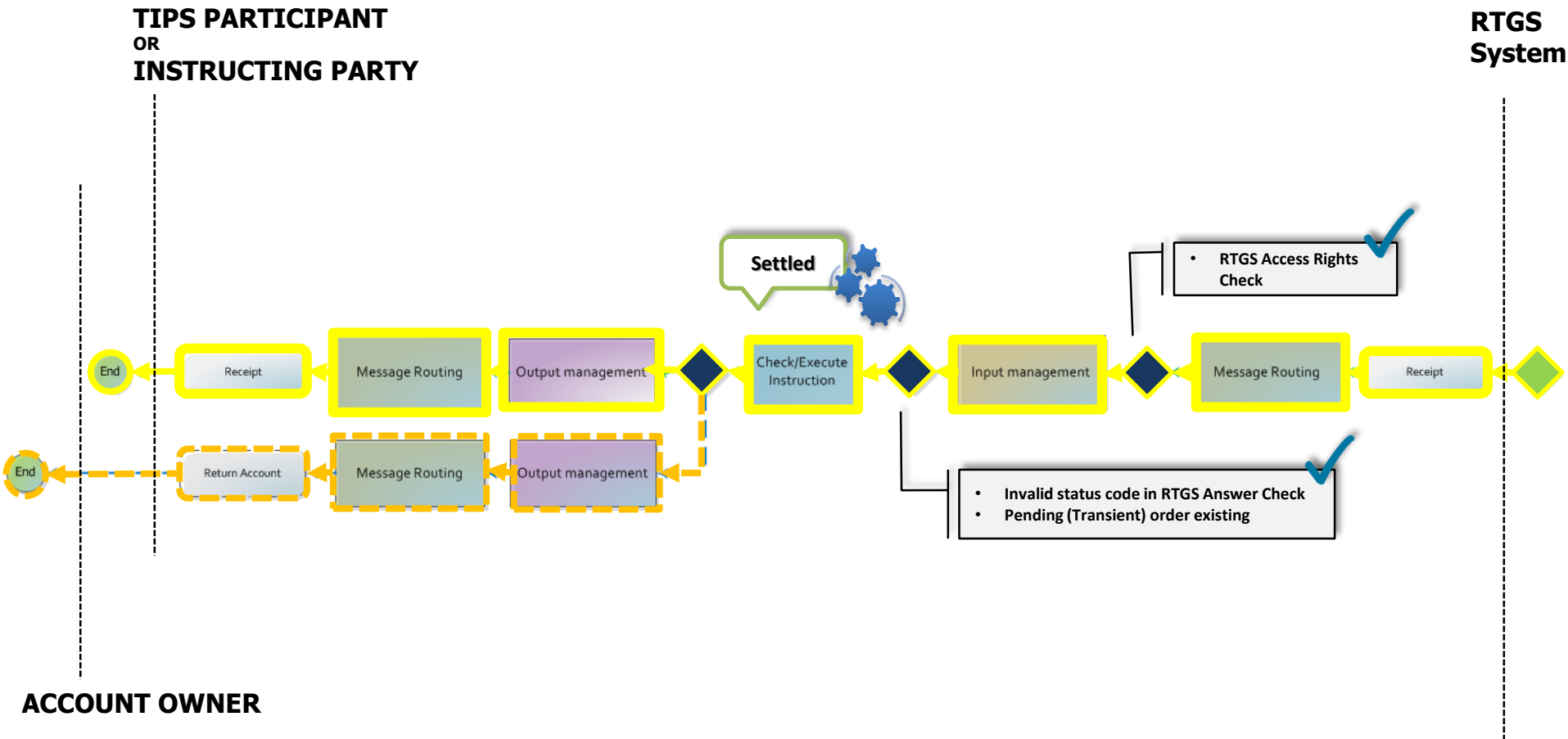
TIPS PARTICIPANT
OR
INSTRUCTING PARTY

RTGS
System



Outbound Liquidity Transfer flow - Successful Scenario

Confirmation from the RTGS

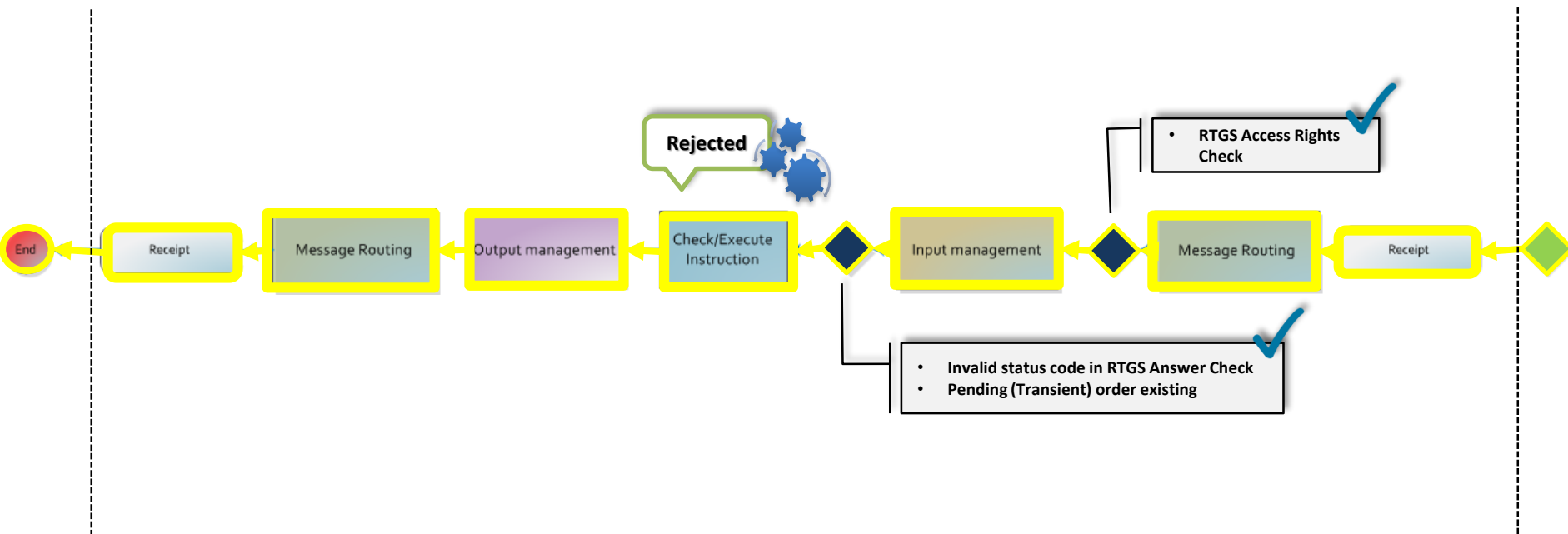


Outbound Liquidity Transfer flow - Successful Scenario

Rejection from the RTGS

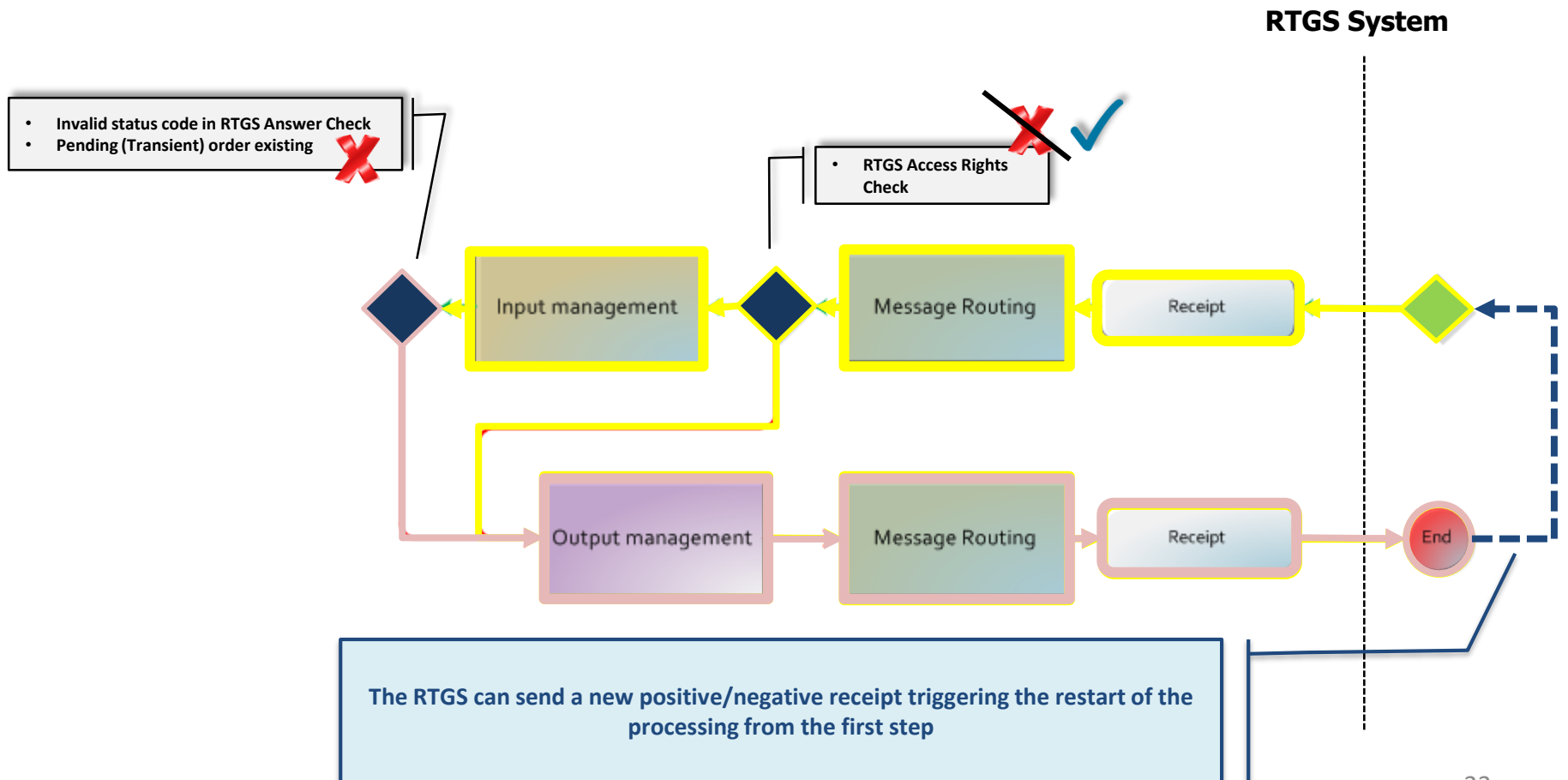
TIPS PARTICIPANT
OR
INSTRUCTING PARTY

RTGS
System



Outbound Liquidity Transfer flow - Unsuccessful Scenario

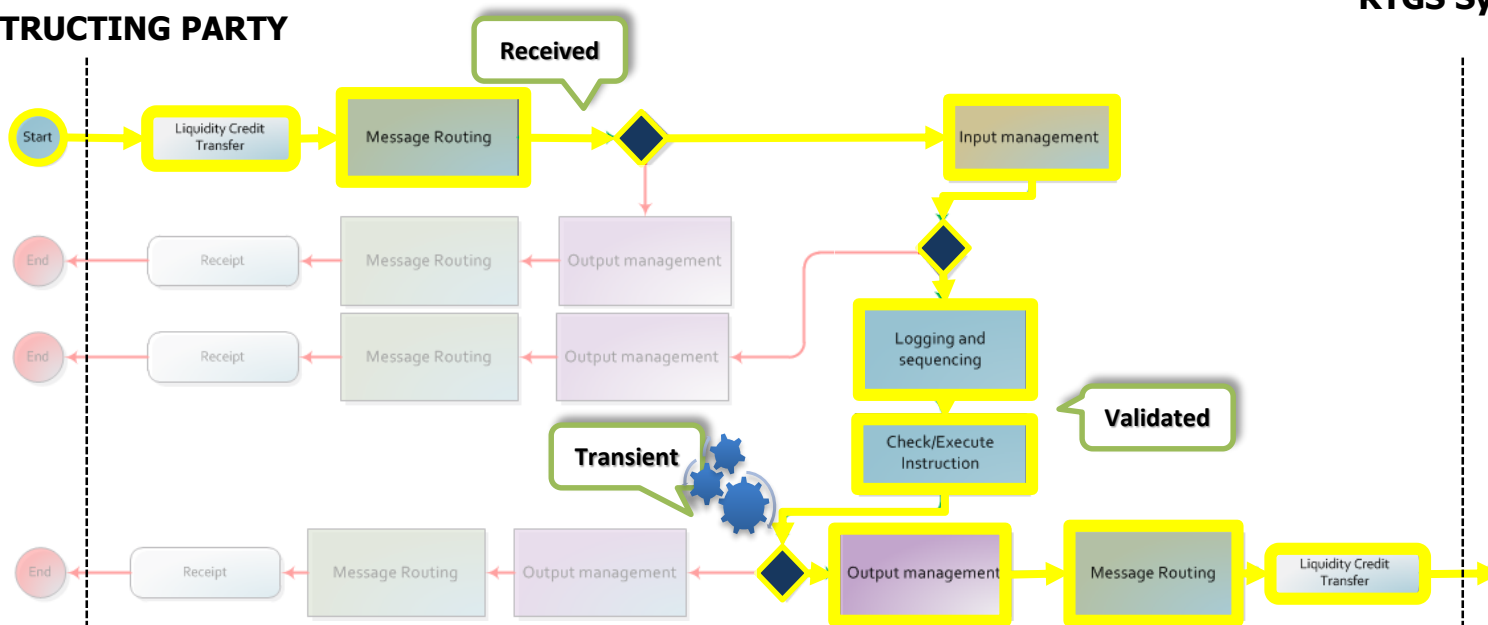
Confirmation/Rejection from the RTGS



Outbound Liquidity Transfer flow – Missing RTGS answer

TIPS PARTICIPANT
OR
INSTRUCTING PARTY

RTGS System



RTGS Alert

Liquidity Transfer Orders with status "Transient" and for which the lapse of time between the time the order is received in TIPS and the current timestamp is longer than **15** minutes, are detected

TIPS OPERATOR will be informed to initiate a dedicated operational procedure

1 **Liquidity Management features**

2 **Liquidity Transfer management**

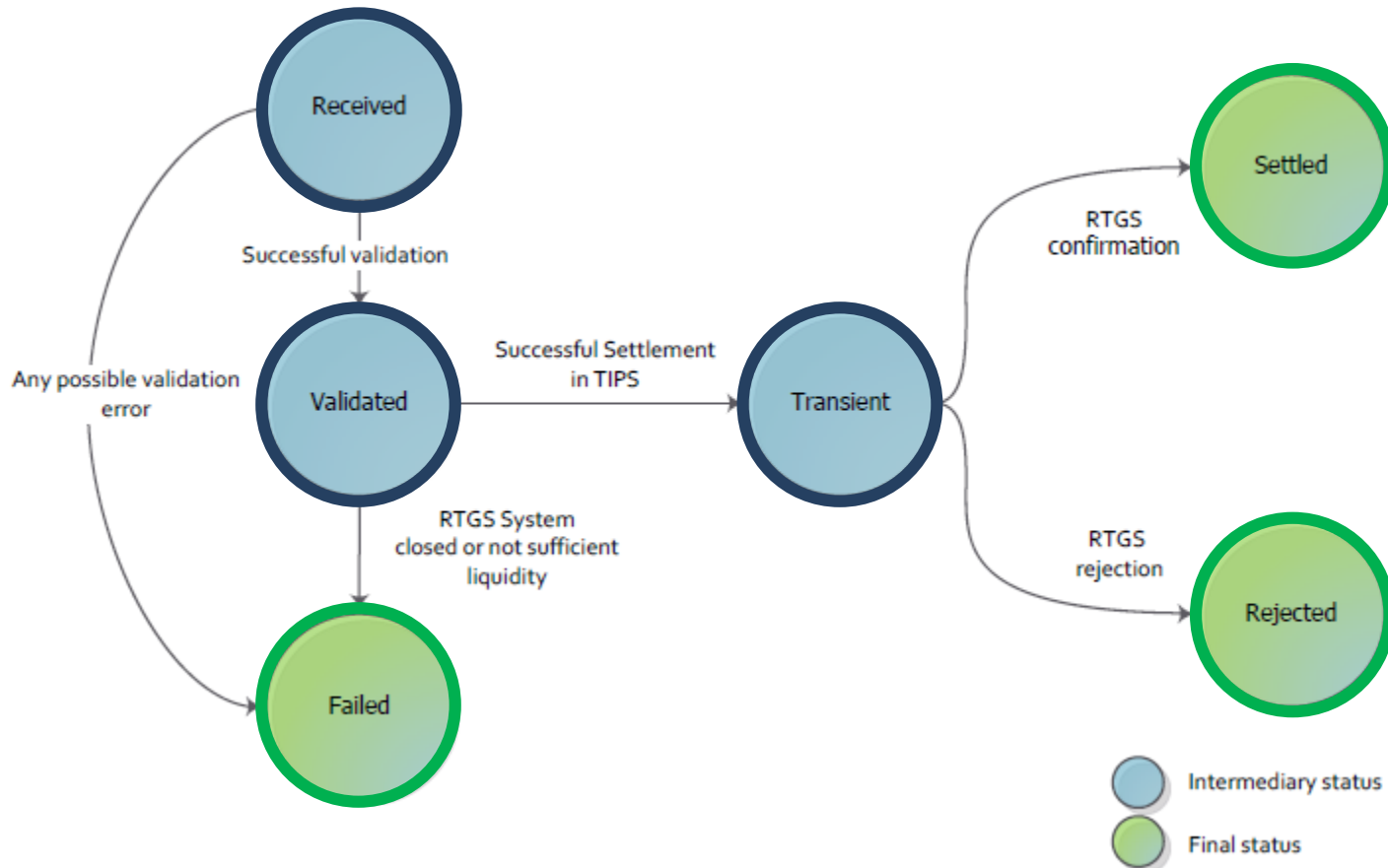
- Outbound Liquidity Transfer Flow
- Status Transition



3 **Closure of RTGS Systems**

4 **Change of business date of RTGS Systems**

Outbound Liquidity Transfer – Status transition



1 **Liquidity Management features**

2 **Liquidity Transfer management**

Overview

Inbound Liquidity Transfer

Outbound Liquidity Transfer

Intra-service Liquidity Transfer

Messages

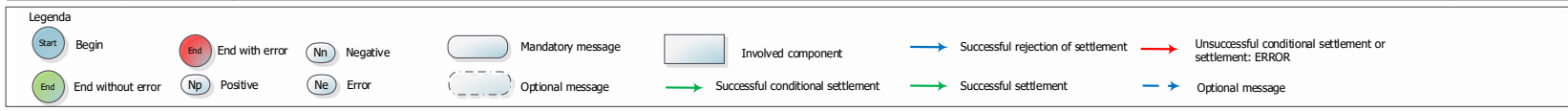
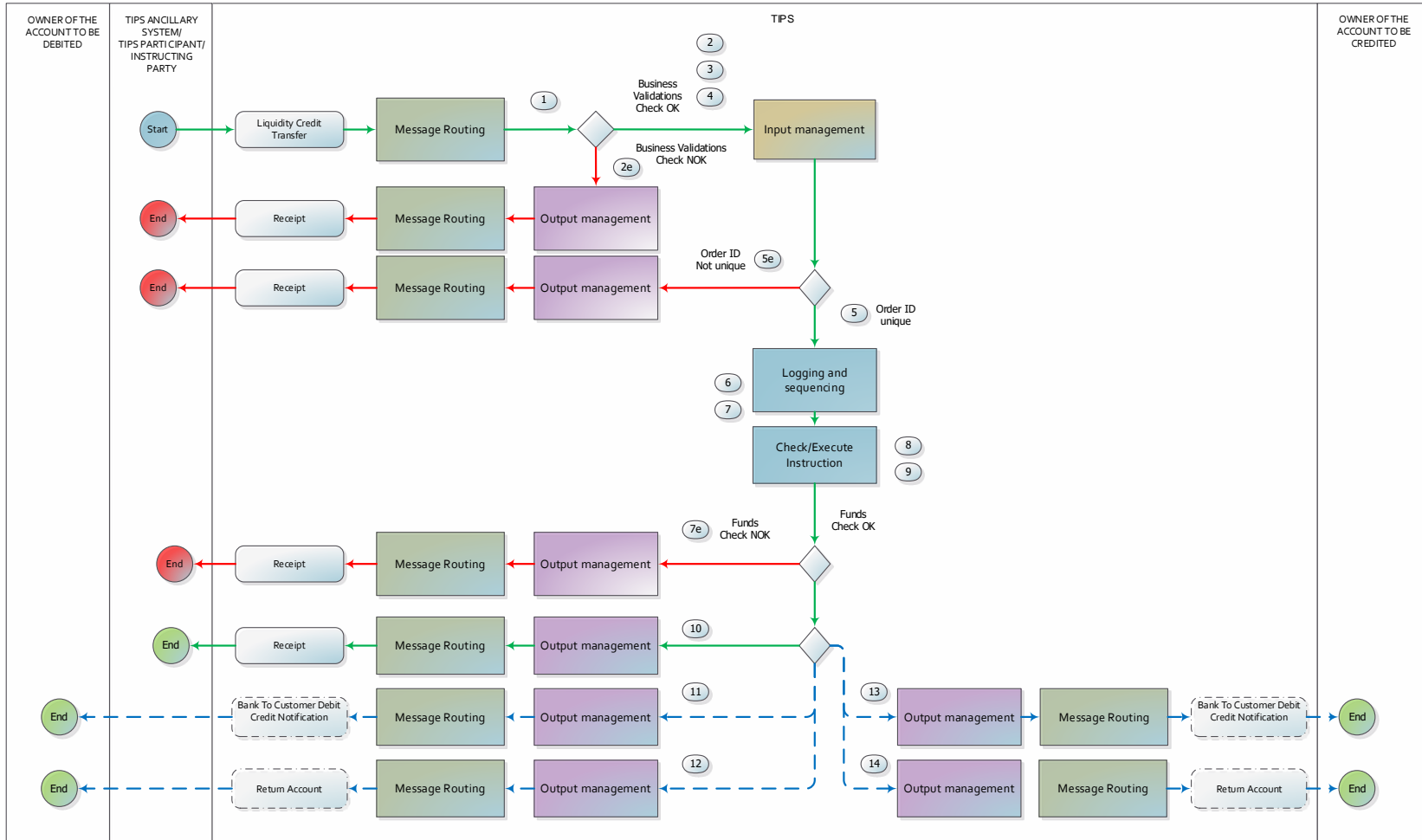
- Intra-service Liquidity Transfer Flow
- Status Transition



3 **Closure of RTGS Systems**

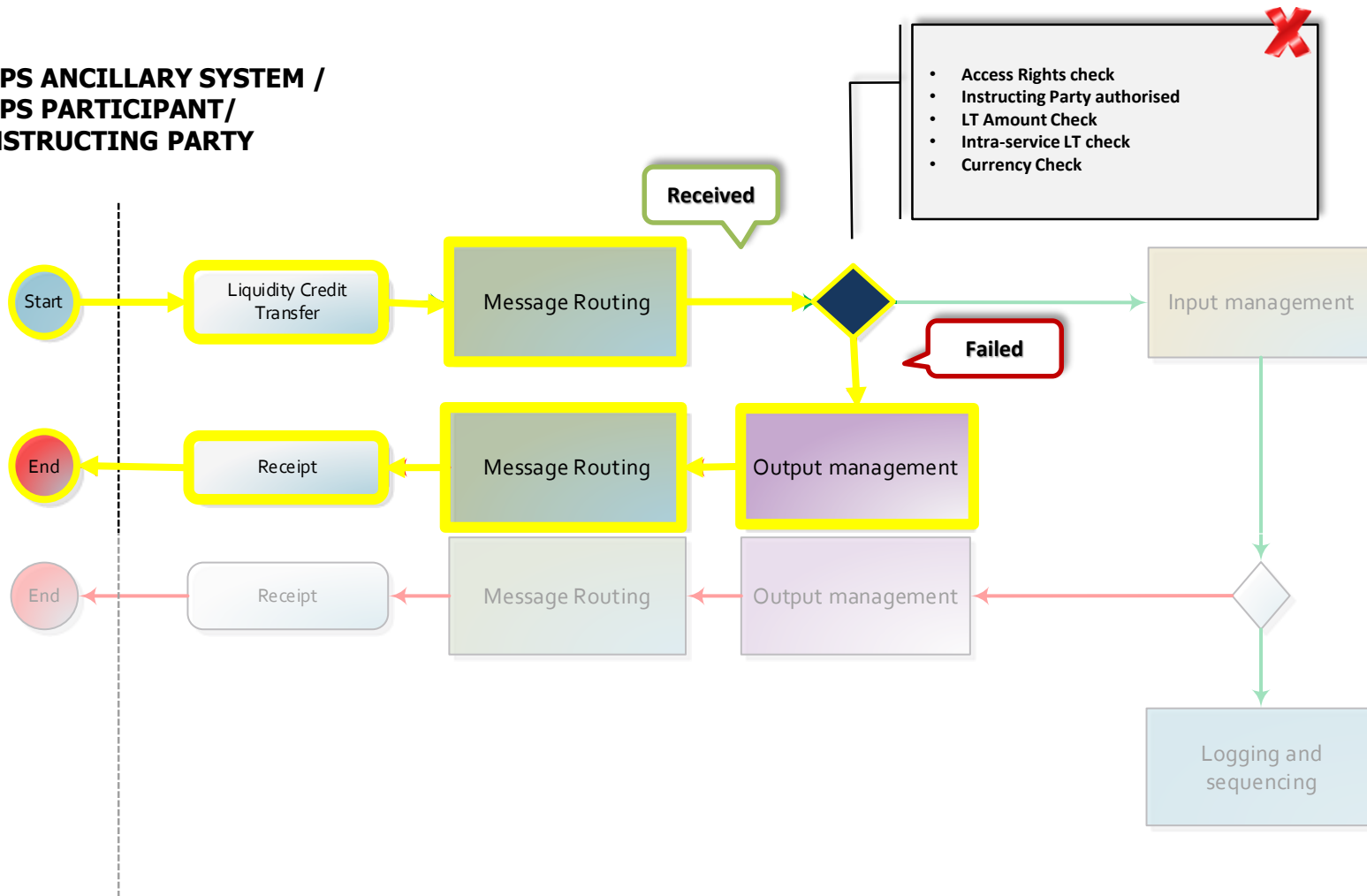
4 **Change of business date of RTGS Systems**

Intra-service Liquidity Transfer flow - Overview



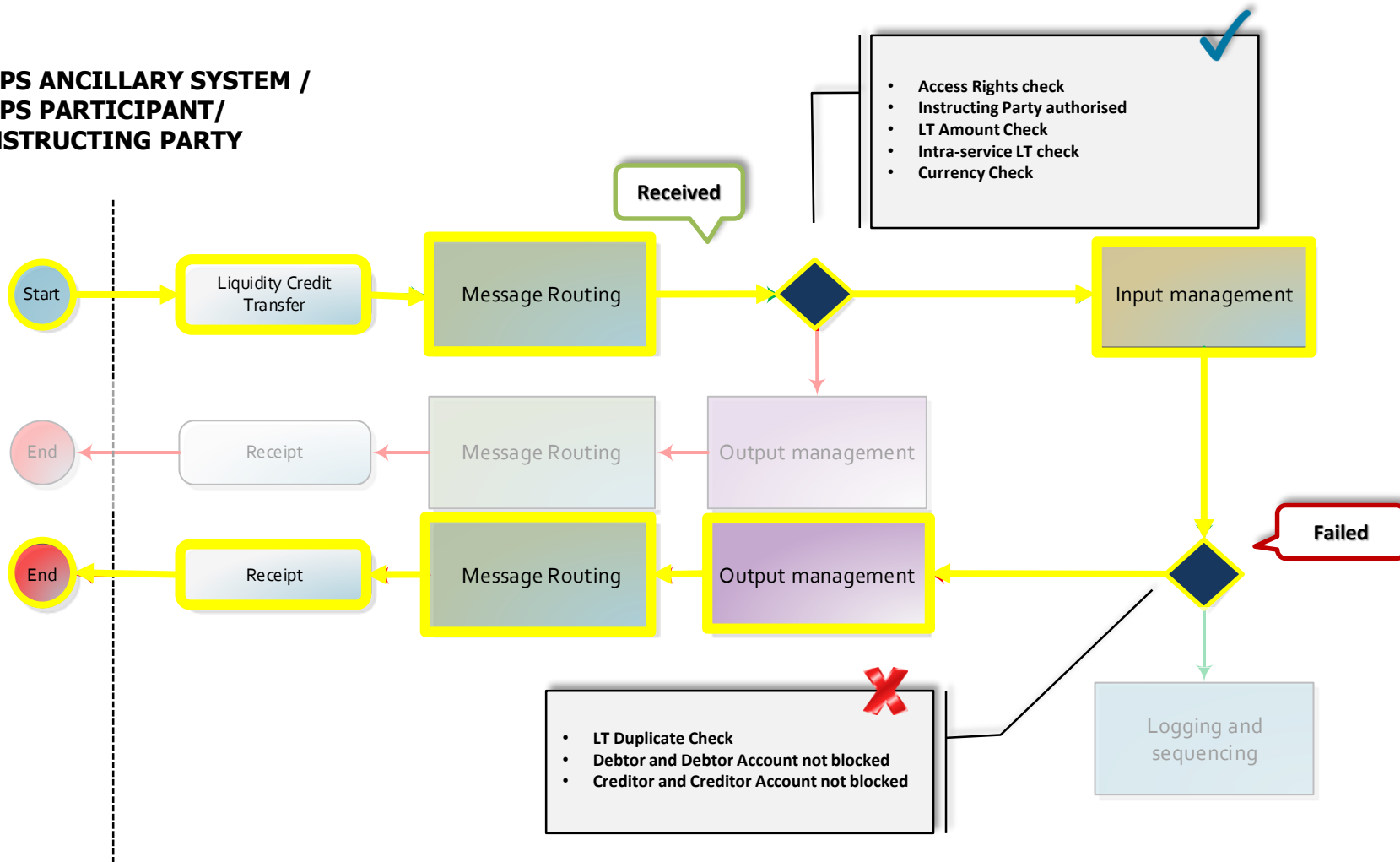
Intra-service Liquidity Transfer – Unsuccessful Scenario (I)

TIPS ANCILLARY SYSTEM /
 TIPS PARTICIPANT/
 INSTRUCTING PARTY

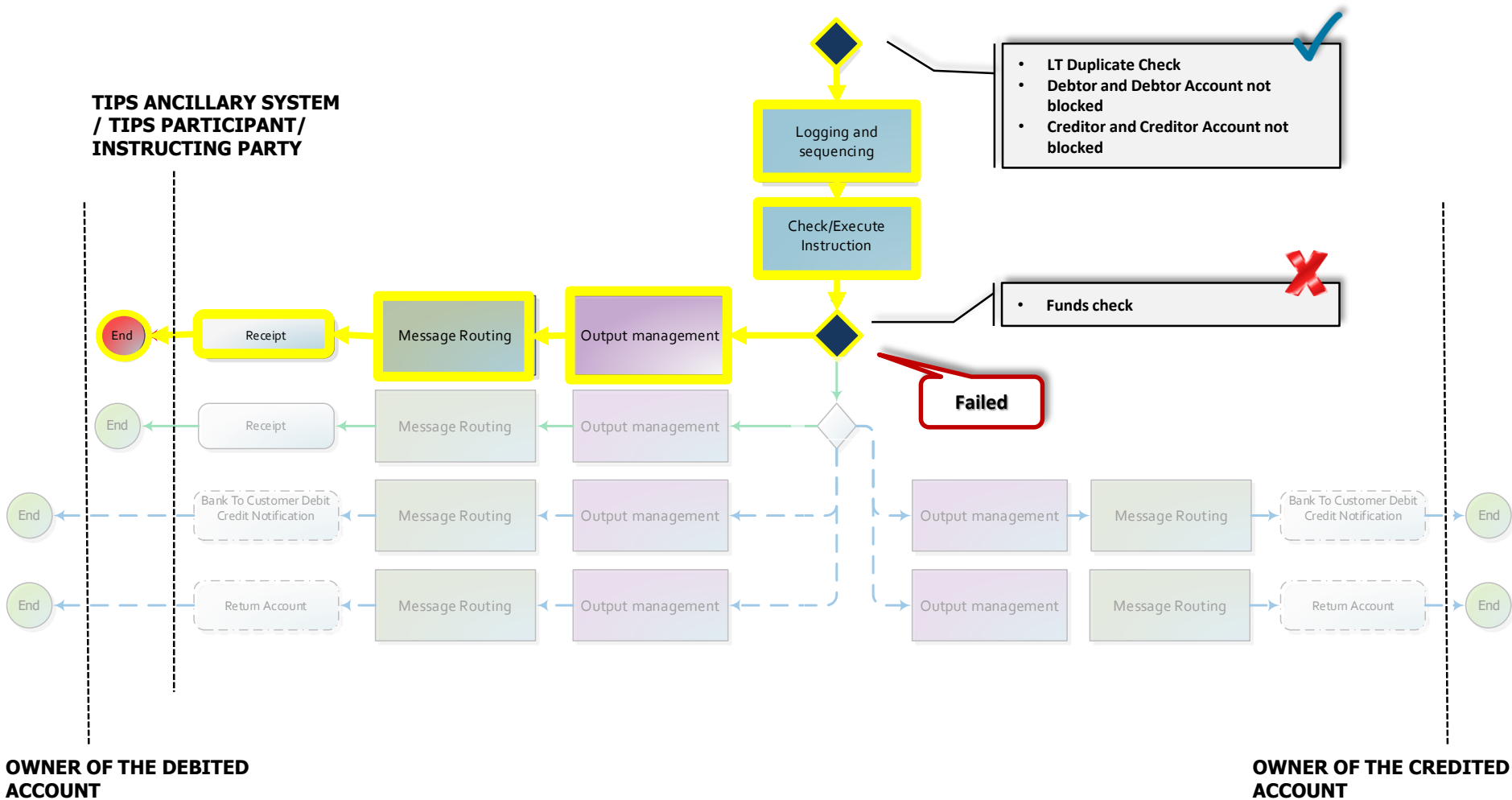


Intra-service Liquidity Transfer – Unsuccessful Scenario (II)

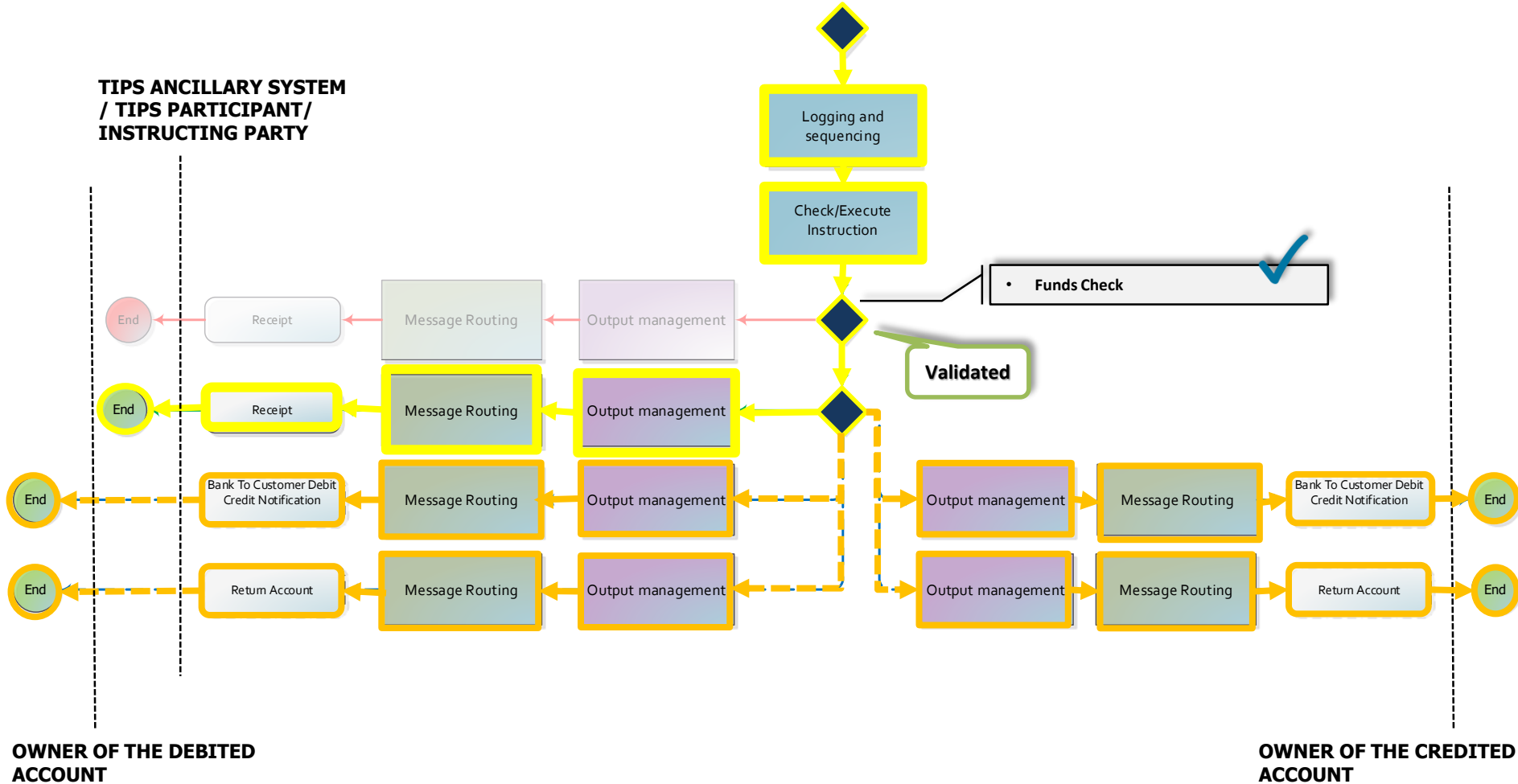
TIPS ANCILLARY SYSTEM /
 TIPS PARTICIPANT/
 INSTRUCTING PARTY



Intra-service Liquidity Transfer – Unsuccessful Scenario (III)



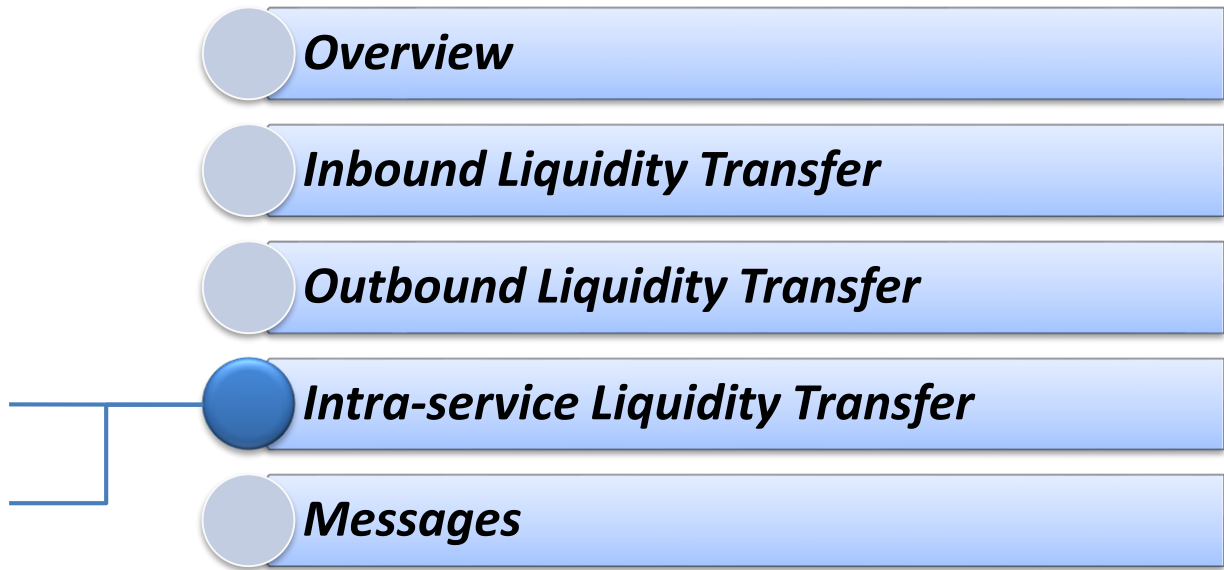
Intra-service Liquidity Transfer – Successful Scenario



1 **Liquidity Management features**

2 **Liquidity Transfer management**

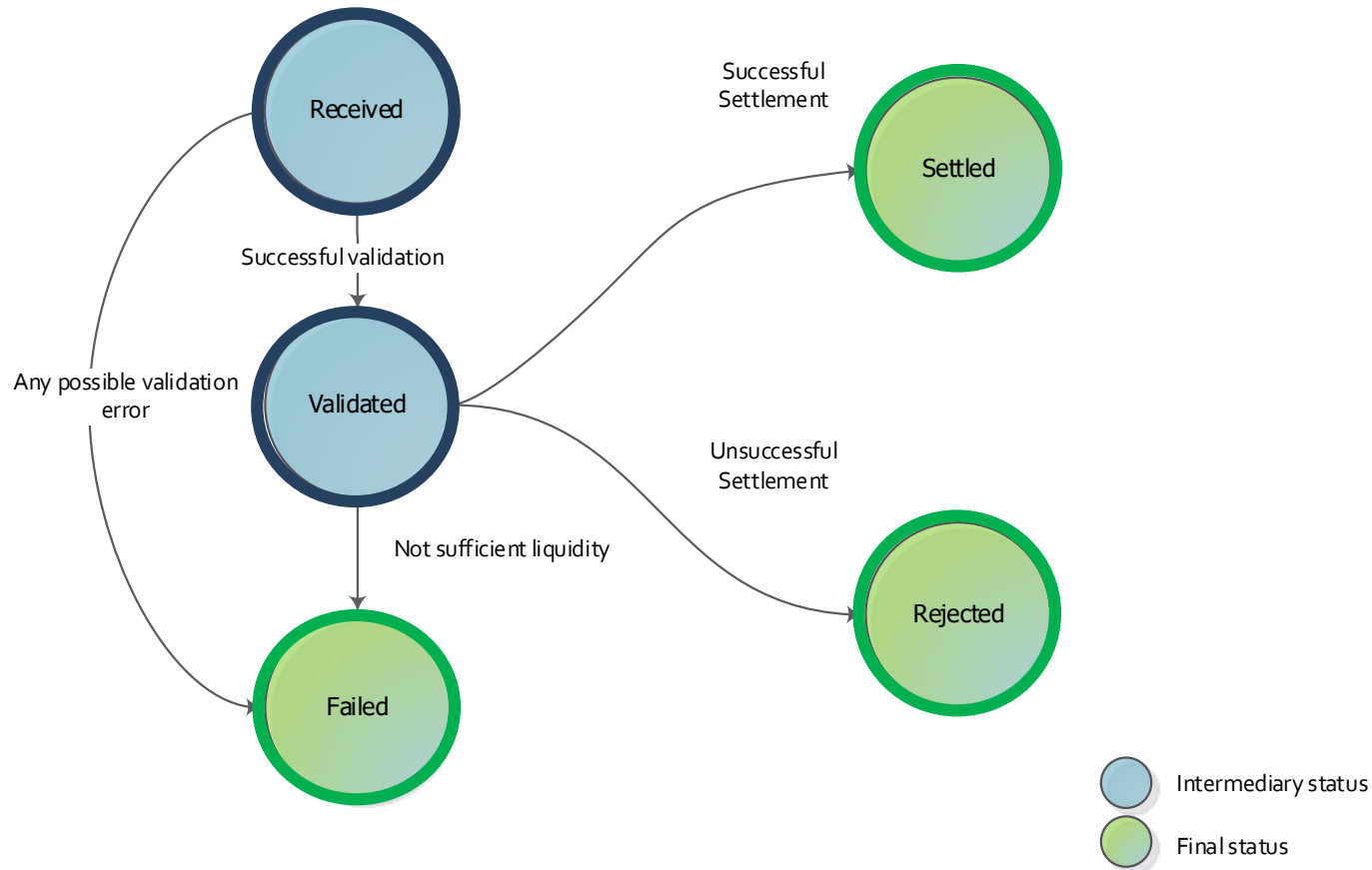
- Intra-service Liquidity Transfer Flow
- **Status Transition**



3 **Closure of RTGS Systems**

4 **Change of business date of RTGS Systems**

Intra-service Liquidity Transfer – Status transition



1 **Liquidity Management features**

2 **Liquidity Transfer management**

Overview

Inbound Liquidity Transfer

Outbound Liquidity Transfer

Intra-service Liquidity Transfer

Messages

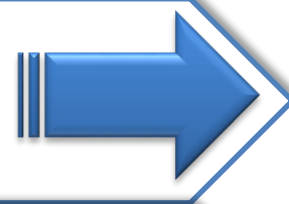
3 **Closure of RTGS Systems**

4 **Change of business date of RTGS Systems**

Involved XML messages

LiquidityCreditTransfers (camt.050.001.05)

To instruct inbound, outbound and intra-service liquidity transfers.



Receipt (camt.025.001.04)

To confirm the execution/rejection of the liquidity transfer in the interaction with the RTGS System.



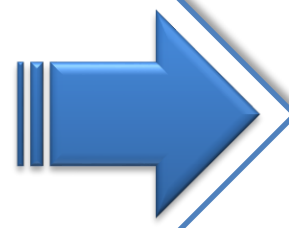
Receipt (camt.025.001.05)

To confirm the execution/rejection of the liquidity transfer to the TIPS customer.



BankToCustomerDebitCreditNotification (camt.054.001.06)

To notify the account owner that the account was credited/ debited due to a LT.



ReturnAccount (camt.004.001.07)

To notify that the ceiling/ floor threshold is exceeded.

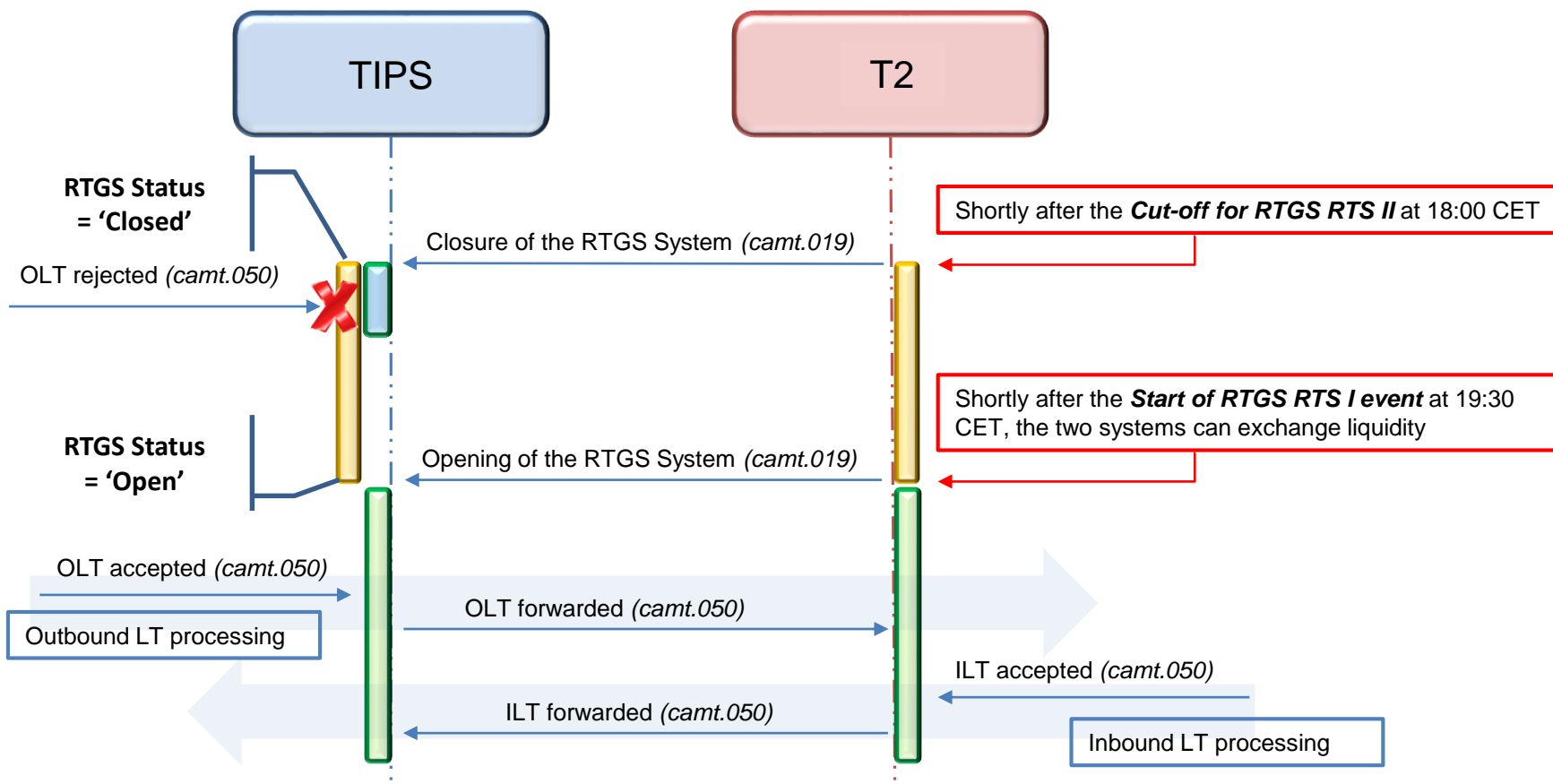


- 1** **Liquidity Management features**
- 2** **Liquidity Transfer management**
- 3** **Closure of RTGS Systems**
- 4** **Change of business date of RTGS Systems**

Closure of RTGS Systems

- **TIPS** operates on a 24/7/365 basis
- **RTGS Systems (e.g. T2)** are not operating during the daily maintenance window (e.g. during the week-ends or bank holidays) or during specific time slots of the operating day (e.g. T2 cannot exchange liquidity with other Market Infrastructure services between the **Start of EOD** - close to 18:00 - and **Start of Setting Aside Liquidity and Settlement of AS Overnight Business** cut-off at 19:30)
- In such conditions, any transfer of liquidity between the two systems is blocked to avoid liquidity being stuck (and not usable in TIPS) in the RTGS queues when the RTGS is not able to process it
- Therefore, when the RTGS is closed, **TIPS** shall stop the processing of any Outbound Liquidity Transfer
- In order to synchronise the two systems a specific exchange of messages is foreseen:
 - During RTGS EoD/SoD
 - When entering/closing the RTGS Maintenance Window
- The processing of **Intra-service Liquidity Transfers** within TIPS is not dependent on the status of the RTGS and is always available

Closure of RTGS Systems (EoD/SoD)



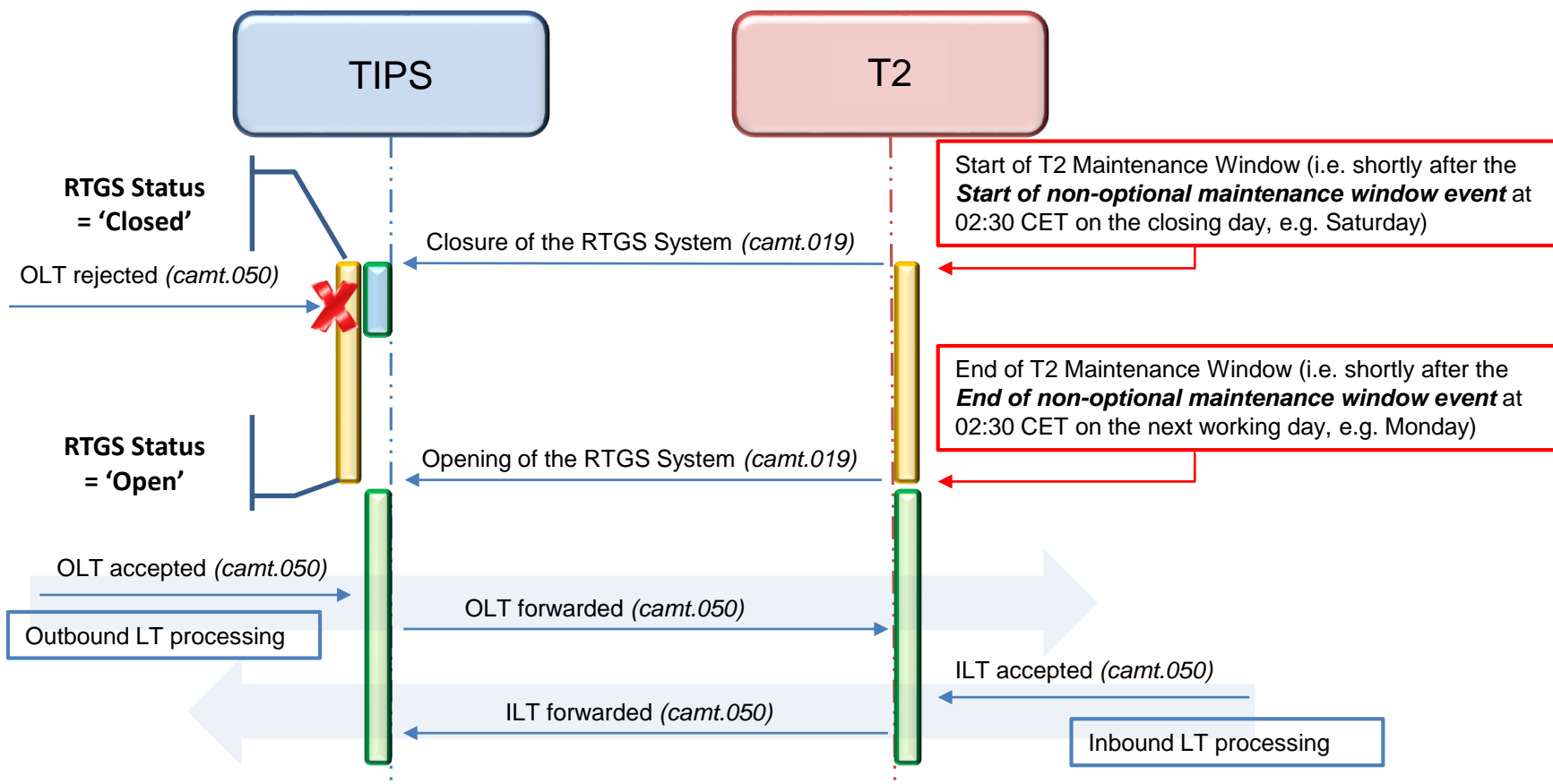
RTGS System closed – Outbound LT rejection

RTGS System open – LT processing

LT processing for the ones received when the RTGS was still open and not in final state yet

T2 – Operating time/event

Closure of RTGS Systems (Maintenance Window)



RTGS System closed – Outbound LT rejection

RTGS System open – LT processing

LT processing for the ones received when the RTGS was still open and not in final state yet

T2 – Operating time/event

- 1** **Liquidity Management features**
- 2** **Liquidity Transfer management**
- 3** **Closure of RTGS Systems**
- 4** **Change of business date of RTGS Systems**

Change of business date of RTGS Systems

The designed interaction between TIPS and the relevant RTGS System aims at:

- Avoiding any possible discrepancy from TIPS and RTGS System data that may come from the presence of **pending Liquidity Transfers** in either direction
- Triggering the production of **TIPS Reports** (either in full mode or last delta)
- Collecting TIPS accounts and TIPS AS Technical Account balances into a “snapshot” for the production of the **TIPS General Ledger** message
 - Without a cash sweep mechanism, due to the 24/7 operating hours of TIPS, the snapshot is needed to allow calculations in the RTGS of the minimum reserve fulfilment and interests
 - The time when this snapshot is requested to TIPS shall be determined by the RTGS, during its business date change process by means of a specific trigger which forces a business date change in TIPS

Change of business date of RTGS Systems - MRR

Minimum Reserve Requirements

Coherence between the balances used for the calculation in TIPS and the RTGS

A single point in time to perform the calculation in a synchronised way between TIPS and the RTGS

RTGS change of business date

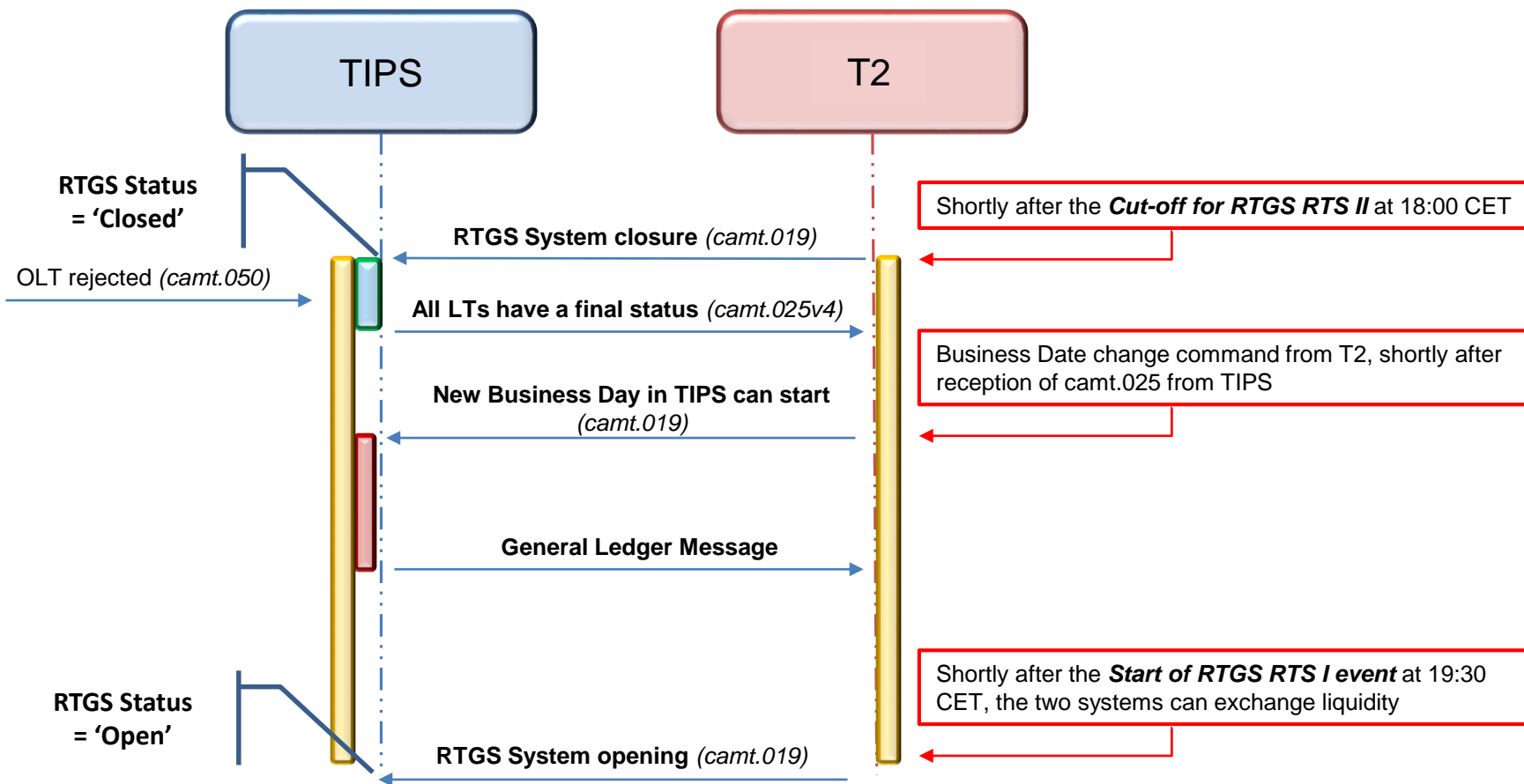
NO LTs in pending confirmation

TIPS Accounts balance snapshot

TIPS GENERAL LEDGER

a snapshot of the balance on the TIPS accounts for the fulfilment of the minimum reserve requirement is taken when the RTGS triggers the business date change in TIPS

Change of business date of RTGS Systems – Message Flow

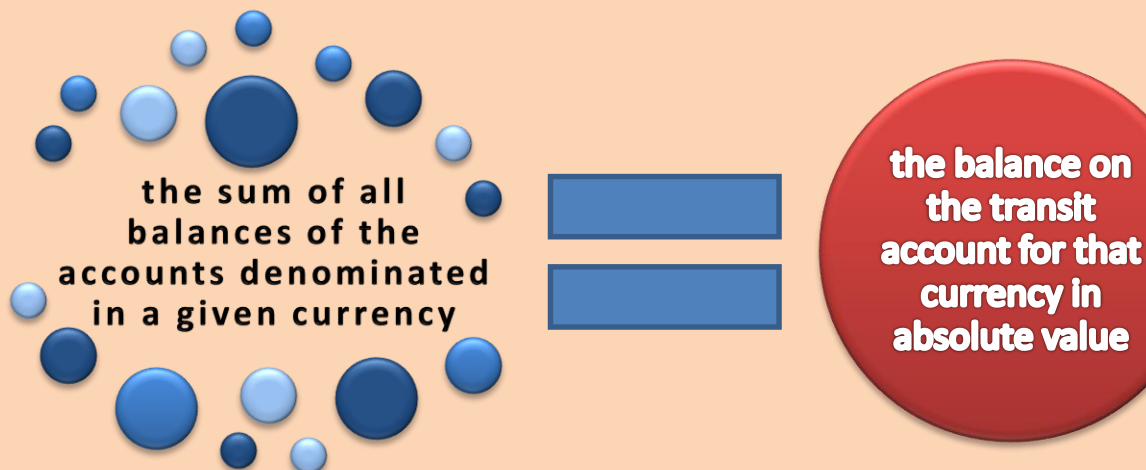


- Preparation of balances and GL snapshots
- RTGS System closed – Outbound LT rejection
- RTGS System open – LT processing
- LT processing for the ones received when the RTGS was still open and not in final state yet

T2 – Operating time/event

Change of business date of RTGS Systems – TIPS GL

- The General Ledger message contains all accounts (TIPS DCA and TIPS ASTA) denominated in a given currency, including the relevant transit account for the past BD
- TIPS sends to each RTGS a camt.053 General Ledger message containing records without a particular order
- TIPS delivers general ledger data that fulfil the following condition:



Thank you for the attention!
