

TARGET Instant Payment Settlement User Requirements

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Executive Summary

Introduction

The market consultation on the TARGET Instant Payment Settlement (TIPS) User Requirements Document (URD) was initiated on 9 January 2017 and ran until 24 February 2017. Financial market infrastructures and financial institutions in Europe with a stake and interest in instant payments provided their feedback on the URD to the Eurosystem.

The URD has been updated based on the feedback from the market.

Scope of the Service

TIPS is a service for the settlement of instant payments. TIPS will offer instant settlement services to its Participants when an originator instructs the transfer of funds to a beneficiary. The primary aim is to offer *settlement of instant payments in Euro*. However the technical implementation of TIPS shall be *currency agnostic in its design*, i.e. TIPS could support settlement in non-Euro Central Bank money as well.

TIPS shall support Participants to be *compliant with the SEPA Instant Credit Transfer (SCT Inst)* scheme which the European Payments Council (EPC) has developed for instant payments in Euro. TIPS shall follow the process flows defined by the scheme and offer real-time information on the status of transactions and liquidity transfers to Participants. TIPS messages shall be in line with SCT Inst scheme, all payment messages shall use the same format if applicable. However, other schemes in other currencies are not excluded and might be supported in the future, if deemed necessary.

TIPS is intended as a harmonised and standardised *pan-European service with common functionality across different countries and jurisdictions*. The lean nature of the service will promote efficiency in the settlement of instant payments. Common functionalities across jurisdictions and the intention to support compliance of the SCT Inst scheme will ensure harmonisation of practices and further market integration in the settlement of instant payments.

TIPS offers a very *flexible participation structure* that can support different business models without compromising the speed and efficiency requirements stipulated by the SCT Inst scheme. There are three classes of actors in TIPS: Participants, Reachable Parties and Instructing Parties.

Participants are the only entities allowed to open accounts in TIPS. The opening of TIPS accounts will adhere to *the same eligibility criteria¹ as opening of accounts in TARGET2* for accounts in Euro. This will be irrespective of whether or not Participants actually have an account in TARGET2. Participants should have signed adherence to the SCT Inst scheme for the settlement of instant payments in euro.

¹ Guidelines on TARGET2: TITLE II: PARTICIPATION, Article 4: Access criteria : http://www.ecb.europa.eu/ecb/legal/pdf/l_03020130130en00010093.pdf



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Reachable Parties do not maintain TIPS accounts; however they have contractual agreements with a Participant *to use the Participant's TIPS account* for the settlement of instant payments. This would allow institutions to offer instant payment solutions to their account holders and be reachable within TIPS without opening accounts. TIPS offers additional functionalities for Participants to manage the credit limits of Reachable Parties without splitting liquidity amongst multiple accounts. Reachable Parties should have signed adherence to the SCT Inst scheme for the settlement of instant payments in euro.

An Instructing Party is any entity that has contractual agreements with one or more Participants *to instruct on-behalf of the Participant*. Instructing parties will have direct connectivity to TIPS. Participants can enter into contractual agreements with Instructing Parties to manage their TIPS accounts. Both Participants and Reachable Parties can act as Instructing Parties themselves.

TIPS accounts in Euro shall *legally be opened in the TARGET2 component system of the responsible Central Bank* and shall be dedicated to the settlement of instant payments on TIPS. TIPS account balances will be *applicable to the minimum reserve calculation*. A snapshot of the balance on the TIPS account for the fulfilment of the minimum reserve requirement will be taken at the closing time of TARGET2. TIPS will work according to the calendar day and operate on a 24/7/365 basis; it will also provide reporting according to the value date in TARGET2. TIPS billing will be integrated with TARGET2.

The liquidity in TIPS accounts can be *sourced from TARGET2*, during the TARGET2 operating hours. As described in a later section on “TIPS as part of European Market Infrastructure Vision”, the Eurosystem is in the investigation phase of another project to modernise, harmonise and enhance its market infrastructural services. The implementation of this project is expected to significantly enhance the availability of TIPS liquidity management in the future.

The countries across the world where instant payment solutions are available, are witnessing significant growth in the adoption of such services. TIPS service will be built using appropriate and efficient technologies to *support high transactional volumes while operating 24/7/365*. The end-to-end processing of instant payments, even for large concurrent volumes, will be completed in accordance within the guidelines stipulated by the SCT Inst scheme so that the funds are instantly available to the beneficiary banks. The service will be horizontally scalable to ensure the processing of high volumes and to support a very large number of Participants.

There will be a *service desk* to support the core settlement process and to deal with technical issues in connectivity and exception handling.

TIPS will offer *queries and reports* to the Participants to support monitoring and reconciliation. Queries and reports critical to the management of the settlement process will be made available 24/7/365, whereas other queries and reports which relate mainly to set-up activities may be available only during the RTGS operating hours. The service will offer reports that are configurable by Participants including a statement of all transactions to support reconciliation.

Connectivity Approach

TIPS will be a network vendor agnostic service. The intention of the Eurosystem is to let each TIPS Participant to decide on the network vendor they each intend to use and pay to the network vendor directly, as long as this network vendor meets the requirements set by the Eurosystem. The Eurosystem will set out the requirements that the network provider should adhere to.

Pricing

TIPS shall operate on a full cost-recovery and not-for-profit basis. Considering the principle of full cost recovery, the assumption is that this could be achieved with a price which might range from 0.5 to 1 eurocent per transaction (i.e. between €0.005 and €0.01). This should not be construed as a commitment at this stage, but rather an exploration of market interest.

TIPS as Part of European Market Infrastructure Vision

In projects which are running in parallel to TIPS, the Eurosystem is exploring the options for consolidating different functionalities that are used by more than one Eurosystem service like Liquidity Management, Connectivity, Reference Data and Billing.

The potential consolidation of Liquidity Management functionality will offer significant benefits to TIPS Participants. Central bank liquidity will be concentrated with the possibility to dedicate it to the different services offered (including TIPS). The delivery of common connectivity and security components with regards to the TARGET2-T2S consolidation would lead to the emergence of a single gateway to Eurosystem market infrastructures. This would allow for the delivery of harmonised graphical interface(s) to TIPS and the other Eurosystem market infrastructural services. Consolidated Reference Data module will offer reduced maintenance effort for TIPS Participants as reduced duplication of information helps the Participants to manage the reference data better and avoid inconsistencies. Billing functionality will be consolidated to aggregate all billable events across different Eurosystem market infrastructures and generate a consolidated invoice for the Participants. However it is to be noted that these projects are in the investigation phase. If the Eurosystem takes a decision to develop the aforementioned project, it will follow a longer time plan different from the TIPS project and would not be available during the initial stage of TIPS. The plans how to consolidate today's market infrastructures will be taken into account when developing TIPS to avoid a re-building of the TIPS service.

The Eurosystem will monitor the reachability in the context of instant payments in Europe. If required, the Eurosystem may consider offering further scope, possibly via the modernisation of TARGET2.

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1 INTRODUCTION

1.1 BACKGROUND

Instant payment solutions have been or are being developed in several countries around the world and in Europe, often with strong encouragement from public authorities. The Euro Retail Payments Board (ERPB) defines them as solutions that are available 24/7/365 and result in the immediate or close to immediate interbank clearing of the transaction and the crediting of the payee's account. Instant payments may be considered as the next frontier of development in the payments industry.

The objective of the Eurosystem is to ensure that an instant payment solution is available for the euro at the pan-European level. This objective is important for the Eurosystem in relation to its task of promoting the smooth and efficient operation of payment systems and promoting the European Capital Markets Union by avoiding market fragmentation arising out of diverse national solutions.

As a general introduction, this section outlines the project scope that the remaining chapters in the document further detail. This section also presents the principles that will serve as the foundation for the service. In addition, this chapter presents the method for organising and presenting user requirements in subsequent chapters and directs readers to the glossary of terms.

1.2 OBJECTIVES

The main objectives of the envisaged service are:

- to facilitate the instant interbank settlement in Central Bank money of funds transferred by an Originator to a Beneficiary round the clock across the year;
- to support Participants to comply with the European Payments Council's (EPC) SCT Inst scheme;
- to promote efficiency and to ensure market integration in the settlement of instant payments.

1.3 SCOPE AND DESCRIPTION

TARGET Instant Payment Settlement (TIPS) is a service for the settlement of instant payments. TIPS will settle payments instantly in Central Bank money with around the clock availability. TIPS will be a harmonised and standardised pan-European service with common functionality across different countries and jurisdictions.

TIPS will provide instant settlement services in euro to its Participants when an Originator instructs the transfer of funds to a Beneficiary. However, the technical implementation of TIPS will be currency agnostic in order to provide flexibility in the design in order to support settlement in non-euro Central Bank money as well.

The TIPS service will be able to process high transactional volumes while operating 24/7/365.

TIPS shall support Participants to comply with the SCT Inst scheme for instant payments in euro. TIPS messages will conform to SCT Inst scheme, if applicable. All payment messages shall use the format prescribed by the EPC. TIPS message flows for instant settlement in euro shall also comply with the SCT Inst scheme. However, this will not preclude the use of other schemes for other currencies, if deemed necessary in the future.

1.4 GENERAL PRINCIPLES

TIPS shall be based on the below principles.

Principle 1: TARGET Instant Payment Settlement (TIPS) shall serve as a technical solution for providing instant payment settlement services to Participants without the provision of clearing services.

Clarification: The settlement services offered in TIPS will include validation of payment transactions (e.g. checks for message format compliance, availability of accounts, or authorisation to instruct) as well as the confirmation of the settlement results to the Participants.

Principle 2: The primary objective of TIPS is to provide efficient settlement services in euro; however the service shall be technically capable of settling currencies other than the euro.

Clarification: The technical implementation of TIPS shall be currency agnostic in order to provide flexibility in the design, i.e. potential settlement in non-euro Central Bank money. Currency conversion is not in scope.

Principle 3: TIPS shall settle exclusively in Central Bank money.

Principle 4: The settlements performed by TIPS shall be final and irrevocable.

Principle 5: TIPS shall allow operations on a 24/7/365 basis.

Clarification: The technical design of TIPS shall allow around-the-clock operation of the service.

Principle 6: TIPS shall be a lean, harmonised and standardised pan-European service with common functionality across different countries and jurisdictions.

Principle 7: For the settlement of instant payments in euro, TIPS shall follow the participation criteria of TARGET2. For other currencies, participation criteria shall be defined by the Central Banks responsible for the RTGS.

Clarification: TIPS accounts in euro shall legally be opened in the TARGET2 component system of the responsible Central Bank and shall be dedicated to the settlement of instant payments on TIPS.

Principle 8: Participation in TIPS shall not be made mandatory by the Eurosystem.

Principle 9: All eligible Participants shall have non-discriminatory access conditions to TIPS.

Clarification: From a technical point of view access for all Participants of TIPS shall be non-discriminatory. TARGET2 rules will govern the access conditions for the settlement of instant payments in euro.

Principle 10: TIPS shall be based on the ISO 20022 message standard for instant payment settlement and shall support Participants to be compliant with the SCT Inst scheme for instant payments in euro.

Clarification: Succeeding ISO standards are not excluded and might be adopted in the future, if deemed necessary. TIPS messages shall be in line with the SCT Inst scheme, if applicable, insofar as to allow easy translation; all payment messages shall use the

same format. However, other schemes in other currencies are not excluded and might be supported in the future, if deemed necessary.

Principle 11: The Eurosystem shall take on the responsibility of developing and operating TIPS by assuming full ownership.

Principle 12: TIPS shall operate on a full cost-recovery and not-for-profit basis.

1.5 ORGANISATION AND PRESENTATION OF THE USER REQUIREMENTS

The TIPS User Requirements Document is organised into chapters presenting the various aspects of the project.

- **Chapter 1: Introduction** – describes the purpose of this document; recalls the principles which are the main pillars of TIPS; and provides guidance on how to read this document.
- **Chapter 2: High-level Process Description and Architecture** – aims at identifying the TIPS stakeholders, presenting the overall scope and process description of the service.
- **Chapter 3: Settlement of Instant Payment Transactions** – identifies requirements for the core instant payment settlement process and exception handling.
- **Chapter 4: Liquidity Management** – aims at describing the transfer of liquidity between TIPS and the RTGS.
- **Chapter 5: Management of Accounts and Reference Data** – identifies requirements pertaining to the management of accounts and other reference data in TIPS.
- **Chapter 6: Reports** – identifies requirements for the reports that TIPS will provide.
- **Chapter 7: Queries** – identifies requirements for the queries that are available in TIPS.
- **Chapter 8: Interfaces** – identifies requirements related to the technical communication of the TIPS interface with the different TIPS actors.
- **Chapter 9: Other Functions** – identifies requirements related to other functions like billing.
- **Chapter 10: Non-Functional Requirements** – aims at describing the non-functional requirements of TIPS.
- **Chapter 11: Annex** – Annex with list of references, glossary and acronyms

Individual requirements are grouped according to topic and in principle each requirement is presented with attributes. The different user requirements as presented in tables have the following attributes:

ID: This field specifies the unique reference. The identification of the requirement is a unique number, which will be valid for this requirement throughout the project. After agreement, it will be possible for any party to refer to this requirement via this ID. Requirements' substance and wording will evolve over time. Using the identification number, it will be possible to trace any modification of the requirements. Furthermore, the acceptance tests will be linked to the user requirements using this ID.

Name: This is a short label of the requirement. It helps the reader to quickly find a requirement within this document.

Requirement: This is the requirement, formulated in an unambiguous way. Requirements must be clear, concise and measurable. The words "shall", "will" or "must" in a requirement indicate a compulsory feature of the system. The words "may" and "should" indicate options.

A detailed description of the requirement may be provided after the table.

2 HIGH-LEVEL PROCESS DESCRIPTION AND ARCHITECTURE

This chapter provides an overview of the actors and processes associated with the TIPS service.

2.1 ACTORS

For the settlement of instant payments in euro, the major actors of the service are the following.

- **Participants**
Participants are the entities that hold accounts in TIPS; Participants manage their own liquidity and are responsible for all payments sent or received on their accounts. TIPS accounts in euro shall legally be opened in the TARGET2 component system of the responsible Central Bank.
- **Reachable Parties**
Reachable Parties are entities that do not maintain TIPS accounts. However, they have contractual agreements with a Participant to use the Participant's TIPS account for the settlement of instant payments.
- **Instructing Parties**
Instructing Parties are any entities that have contractual agreements with one or more Participants to instruct on behalf of the Participant. Both, Participants and Reachable Parties can act as Instructing Parties themselves.
- **Central Banks**
A Central Bank provides cash account services to Participants for the settlement of instant payments in Central Bank money. Additionally a Central Bank can act as a Participant in TIPS.

Section 5.2 provides a detailed explanation of the actors.

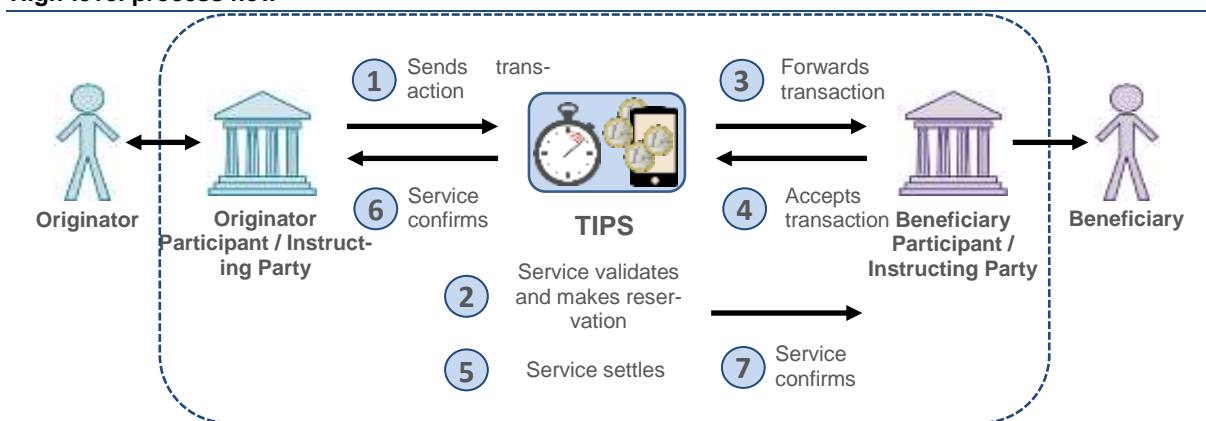
2.2 SETTLEMENT OF PAYMENT TRANSACTIONS

TIPS is designed to support Participants and Reachable Parties to comply with the SCT Inst scheme for instant payments in euro. The service shall:

- forward SCT Inst payment transactions from an Originator Participant or Instructing Party acting on behalf of the Participant / Reachable Party to the Beneficiary Participant or Instructing Party acting on behalf of the Participant / Reachable Party;
- perform validations required in the context of settlement, e.g. checks for message format compliance, availability of accounts, sufficiency of funds or authorisation to instruct;
- perform conditional reservations on Originator Participant accounts;
- perform instant settlement of SCT Inst payment transactions after they are accepted by the Beneficiary Participant or Instructing Party acting on behalf of the Participant / Reachable Party;
- ensure immediate transmission of status messages after settlement;
- ensure that the settlement of instant payment transactions meets the timing requirements prescribed by the SCT Inst scheme.

The subsequent Figure 1 depicts the high-level process flow for the case of successful settlement.

Figure 1
High-level process flow



- (1) The Originator Participant or an Instructing Party acting on behalf of the Originator Participant or a Reachable Party sends an SCT Inst payment transaction message to TIPS
- (2) TIPS validates and reserves the amount to be transferred (conditional settlement)
- (3) TIPS forwards the payment transaction for acceptance to the Beneficiary Participant or an Instructing party acting on behalf of the Beneficiary Participant or a Reachable Party
- (4) The Beneficiary Participant or an Instructing Party acting on behalf of the Beneficiary Participant or a Reachable Party sends a positive reply message to TIPS
- (5) TIPS settles the payment
- (6) TIPS confirms the settlement to the Originator Participant or an Instructing Party acting on behalf of the Originator Participant or a Reachable Party
- (7) TIPS confirms the settlement to the Beneficiary Participant or an Instructing Party acting on behalf of the Beneficiary Participant or a Reachable Party

TIPS shall reject the instant payments transactions in case of failed technical or business validations. Furthermore, the service shall reject transactions if the timeout conditions defined by the SCT Inst scheme are met. Chapter 3 contains detailed process flows for successful and unsuccessful instant payment transactions.

TIPS shall also support Participants and Instructing Parties acting behalf of Participants or Reachable Parties in exception handling. The Participants or Instructing Parties may route recall messages through TIPS. TIPS shall also provide an investigation service to track the status of previously submitted transactions.

TIPS shall use the ISO 20022 XML standard version which is prescribed by the SCT Inst scheme for all messages covered by the scheme. TIPS is prepared to continue being aligned with the scheme if future ISO 20022 XML standard versions are introduced.

2.3 LIQUIDITY MANAGEMENT

TIPS accounts have to be a Central Bank money account opened in the books of a Central Bank and are exclusively dedicated for the settlement of instant payments.

The TIPS service shall allow the transfer of funds between an RTGS account and a TIPS account during the operating hours of the RTGS, provided that both accounts are denominated in the same currency. A snapshot of the TIPS account will be taken at the closing time of TARGET2 for the purpose of accounting and minimum reserve calculations.

2.4 MANAGEMENT OF ACCOUNTS AND REFERENCE DATA

TIPS Participants do not need to own an RTGS account as long as funding for the settlement of instant payments can be provided via an RTGS account owned by another entity.

Central Banks will open and maintain TIPS accounts for the Participants. Participants will be able to open one or more accounts in TIPS to facilitate the settlement of instant payments. TIPS shall offer Credit Memorandum Balance (CMB) functionality which is a credit limit that is linked to a TIPS account. These credit limits provide Participants with a flexible tool to provide restricted access to the liquidity in the underlying account. The different types of accounts and the Credit Memorandum Balance (CMB) are detailed in section 5.3.

Reachable Parties need to maintain contractual agreements with Participants in order to use their TIPS accounts for settlement. Similarly Participants need to have contractual arrangements with Instructing Parties who can instruct on behalf of Participants or Reachable Parties. TIPS will maintain links between the different actors in order to validate the user authorisation for the different functionalities.

The TIPS service shall maintain other reference data required for the settlement of instant payments.

2.5 QUERIES AND REPORTS

TIPS will offer queries and reports to the Participants to support monitoring and reconciliation. Queries and reports critical to the management of the settlement process will be made available 24/7/365. The service will offer flexible report subscription to Participants.

2.6 INTERFACES

TIPS shall provide an application-to-application (A2A) interface for payment transaction processing. TIPS will have a user-to-application interface (U2A) that supports a limited number of user requirements, such as liquidity transfers, limit management and account blocking. The critical functionalities offered via the U2A interface will be available 24/7/365. However, certain functionalities like Participant reference data creation may not require round the clock availability and will be available for shorter time frames. Overview of the functionalities available in each of the interfaces is described in section 8.2.1.

2.7 NON-FUNCTIONAL REQUIREMENTS

The TIPS service shall be scalable to support the expected growth of transactional volumes while operating 24/7/365. The end-to-end processing of instant payments, even for large concurrent volumes, will be completed in accordance with the guidelines stipulated by the SCT Inst scheme so that the funds are instantly available to Beneficiary Participants.

3 SETTLEMENT OF INSTANT PAYMENT TRANSACTIONS

The objective of this chapter is to describe the core functionality of the TIPS service. Section 3.1 provides a high level overview; section 3.2 covers requirements related to the payment processing workflow while sections 3.3 and 3.4 detail exceptional cases such as recalls or investigations.

3.1 OVERVIEW

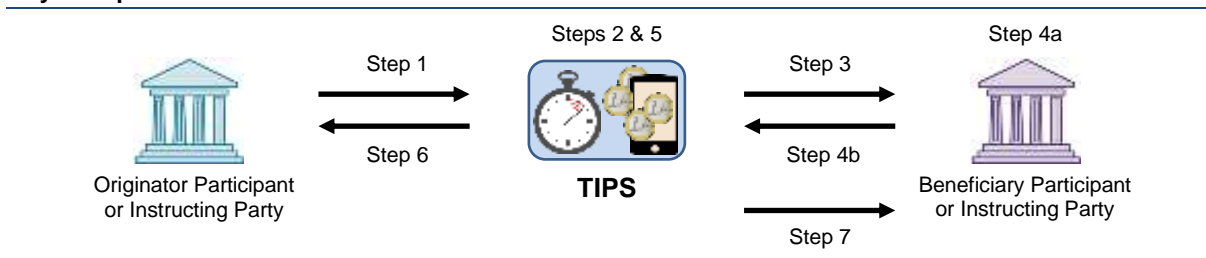
The TIPS service has to support the different process flows that the SCT Inst scheme defines (see ref. [1]). These are instant payments, recalls and investigations.

Figure 2 illustrates the workflow for an **instant payment transaction** that passes all validations and is accepted for settlement. The steps in the overall process are further detailed. Exceptional cases, such as validation errors, are not depicted in the diagram, but mentioned in the explanations following the diagram. The entities communicating with TIPS directly are:

- (i) The Originator Participant or an Instructing Party acting on behalf of the Originator Participant or a Reachable Party (or short “Originator Participant or Instructing Party”);
- (ii) the Beneficiary Participant or an Instructing Party acting on behalf of the Beneficiary Participant or a Reachable Party (or short “Beneficiary Participant or Instructing Party”).

Section 5.2 provides further details regarding the different actors and participation structure.

Figure 2
Payment process



Step 1: The Originator Participant or Instructing Party sends a payment transaction to TIPS. This payment transaction message has to contain the *interbank payment dataset* DS-02 as specified in the SCT Inst scheme rulebook; the BICs of the Originator Participant or Reachable Party and Beneficiary Participant or Reachable Party² are mandatory fields within this dataset. TIPS determines the account or CMB³ to debit from the Originator Participant or Reachable Party BIC⁴ and determines the account or CMB to credit from the Beneficiary Participant or Reachable Party BIC.

² A reachable party could act as an Instructing Party on its own behalf. Reachable parties do not own accounts in TIPS but can use accounts or CMBs owned by a Participant.

³ CMB stands for Credit Memorandum Balance and is further explained in section 5.3.2.

⁴ The TIPS service uses BIC11 for the identification of Participants and Reachable Parties; wildcard rules are not foreseen.

Step 2: TIPS validates the payment transaction and rejects it if any validation error occurs. Possible validation errors are, e.g. insufficient funds, a blocked account or CMB either to debit or credit, an unknown Beneficiary Participant or Reachable Party BIC or a missing authorisation of the sender to send payment transactions on behalf of the Originator Participant or Reachable Party. The timestamp of the payment transaction is checked as well and the transaction is rejected if a configurable threshold for the timeout is exceeded (which is set to 20 seconds from the Originator Participant or Instructing Party time stamp according to the SCT Inst scheme). If the payment transaction is rejected TIPS informs the Originator Participant or Instructing Party. TIPS does not inform the intended Beneficiary Participant or Instructing Party. If the validation is successful, funds are reserved on the account of the Originator Participant.

Step 3: After successful validation TIPS forwards the full interbank payment dataset of the payment transaction to the Beneficiary Participant or Instructing Party. The recipient of this message is uniquely determined from the Beneficiary Participant or Reachable Party BIC in the payment transaction.

Step 4a: The Beneficiary Participant or Instructing Party processes the message and determines if the payment is accepted or rejected.

Step 4b: The Beneficiary Participant or Instructing Party replies with a *Beneficiary Participant reply* message informing TIPS if the recipient accepts or rejects the payment.

Step 5: TIPS validates the *Beneficiary Participant reply* message and either settles the amount or rejects the transaction. A possible validation error is, e.g. a timeout that TIPS determines based on the timestamp contained in the original payment transaction (again set to 20 seconds from the Originator Participant or Instructing Party timestamp). In case the message fails validation TIPS rejects the transaction, unreserves the funds and informs the Originator Participant or Instructing Party and Beneficiary Participant or Instructing Party. In case the Beneficiary Participant or Instructing Party rejects the payment TIPS rejects the transaction, unreserves the funds and informs the Originator Participant or Instructing Party.

Steps 6/7: If the transaction is accepted and the amount settled TIPS informs both the Originator Participant or Instructing Party and Beneficiary Participant or Instructing Party.

The TIPS service supports the processing of single payment transaction messages. Bulk file processing is not in scope. The SCT Inst scheme specifies a target maximum execution time of 10 seconds to process a payment transaction.

In addition to the instant payment process TIPS has to support **recalls**⁵. The Originator Participant or Instructing Party can send recall messages in order to request the return of funds previously settled via an instant payment transaction. TIPS validates whether the sending party is authorised to send recalls and immediately forwards recall messages to the Beneficiary Participant or Instructing Party.

⁵ Both recall datasets, DS-05 (The Recall of an SCT Inst dataset) and DS-08 (Request for Recall by the Originator dataset), as well as their answers (DS-06 and DS-09) are processed by TIPS using the same workflow, assuming the same interbank messages are used.

TIPS does not check the timeframe of recalls, it is up to the Participants or Instructing Parties to adhere to the rules stipulated in the SCT Inst scheme.

Recalls could be either answered negatively or positively via a **recall answer** message. If the Beneficiary Participant or Instructing Party rejects the recall the negative answer is immediately forwarded back to the Originator Participant or Instructing Party of the original payment transaction. If the Beneficiary Participant or Instructing Party answers the recall positively TIPS attempts to settle the returned amount (reversing the original cash flow, possibly minus a fee applied by the Beneficiary Participant or Instructing Party). TIPS determines the required accounts or CMBs for this recall payment from the BICs of the Originator Participant or Reachable Party and Beneficiary Participant or Reachable Party (i.e. the BICs contained in the original payment transaction's dataset DS-02, which has to be part of the positive recall answer). A response to a recall, i.e. a recall answer, has to be provided within 10 business days after the recall has been received. However, similar to the recall itself TIPS does not check this timeframe, it is up to the Participants or Instructing Parties to adhere to the rules pertaining to recalls. The process for positive recall answers differs from the one used for payment transactions in that

- (i) there is no reservation of funds and
- (ii) the acceptance of funds is implicitly assumed by issuing the recall in the first place.

The Originator Participant or Instructing Party can trigger investigations using a **transaction status inquiry** message, as required by the SCT Inst scheme. These inquiry messages allow the Originator Participant or Instructing Party of the original payment transaction to inquire about its status, using the *transaction status investigation* dataset DS-07.

3.2 PAYMENTS

As detailed in the previous section payment processing covers the instant payment workflow and starts with the reception of a payment transaction from an Originator Participant or Instructing Party. It ends with either a rejection message that TIPS sends to the Originator Participant or Instructing Party or a rejection or confirmation message that TIPS sends to both the Originator Participant or Instructing Party and the Beneficiary Participant or Instructing Party.

Some requirements explicitly reference used SCT Inst datasets (DS-X) from the scheme rulebook (see ref. [1]) or ISO messages taken from the SCT Inst interbank implementation guidelines (see ref. [2]). Relevant datasets are DS-02 (interbank payment), DS-03 (confirmation message), DS-05/DS-08 (recall), DS-06/DS-09 (answer to a recall) and DS-07 (transaction status investigation).

3.2.1 Payment Process Diagram

Figure 2 shows the process flow diagram for the payment process and contains message events and tasks, which lead to user requirements. Table 1 contains the list of messages while section 8.3.2 contains the actual requirements for these messages. Tasks are listed in Table 2 and further detailed in the following sections, which also contain additional requirements not directly linked to the diagram.

Figure 3
Payment processing workflow

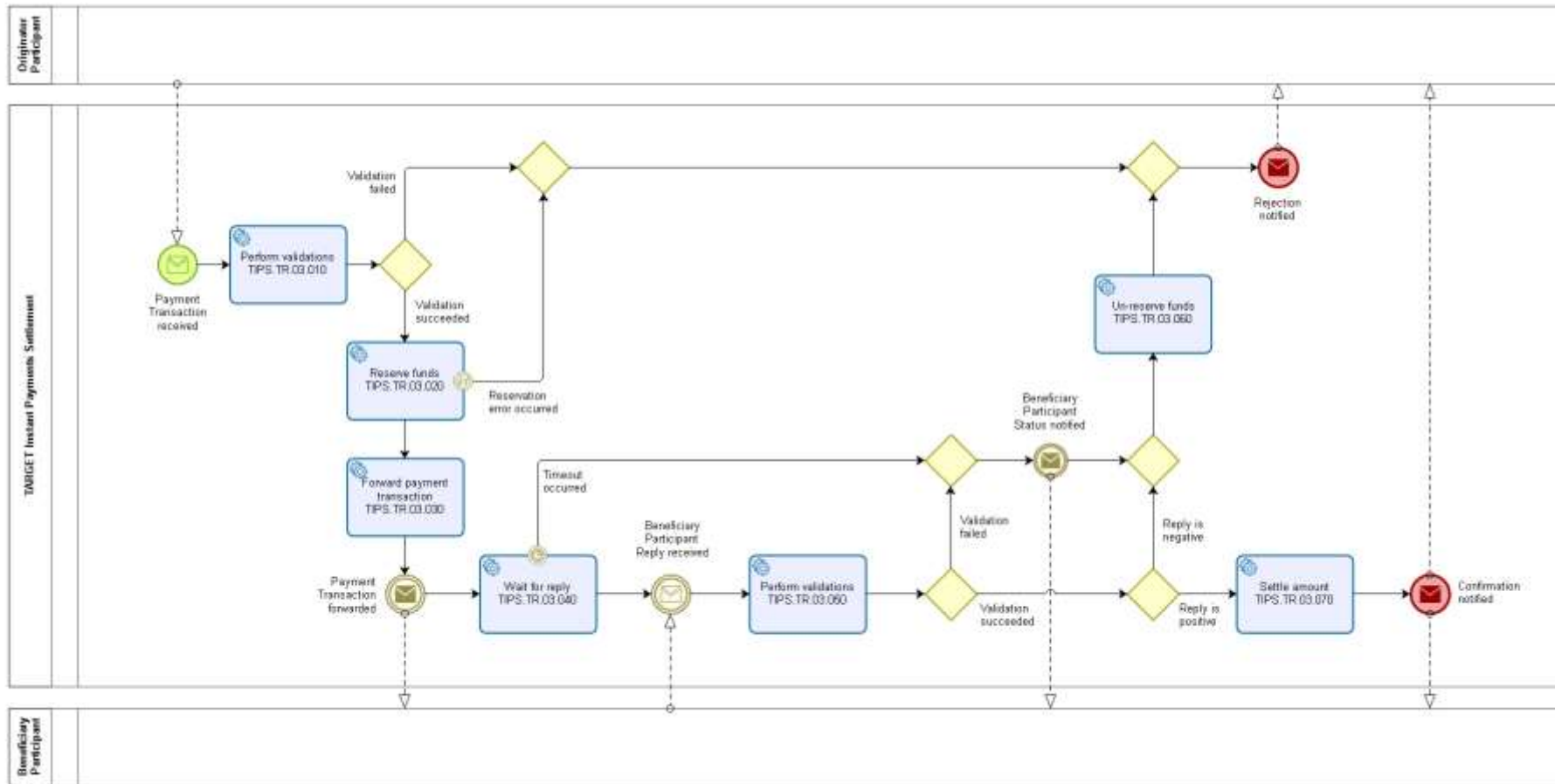


Table 1: List of messages for payment processing

Message	Description
Payment Transaction	An order to transfer funds from the account of the Originator Participant to the Beneficiary Participant instantaneously, sent by the Originator Participant or Instructing Party. This message is forwarded to the Beneficiary Participant or Instructing Party acting on its behalf (this message is called <i>SCT Inst transaction</i> in the SCT Inst rulebook, ref. [1]; further details can be found in TIPS.UR.08.120).
Rejection	A notification sent by TIPS to the Originator Participant or Instructing Party that TIPS failed to process the payment transaction due to, e.g. validation errors, rejection of the payment or timeout (this message is called <i>negative confirmation</i> in the SCT Inst rulebook, ref. [1]; further details can be found in TIPS.UR.08.130).
Beneficiary Participant Reply	Reply returned by the Beneficiary Participant or Instructing Party informing TIPS if the payment is accepted or rejected (this message is called <i>negative/positive confirmation</i> in the SCT Inst rulebook, ref. [1]; further details can be found in TIPS.UR.08.140).
Beneficiary Participant Status	Message informing the Beneficiary Participant or Instructing Party that a timeout or validation error has occurred (this message is not defined in the SCT Inst rulebook, ref. [1]; further details can be found in TIPS.UR.08.150).
Confirmation	A notification sent by TIPS to the Originator and Beneficiary Participants or Instructing Parties to confirm that TIPS has settled the instant payment successfully (this message is called <i>positive confirmation</i> in the SCT Inst rulebook, ref. [1]; further details can be found in TIPS.UR.08.160).

Table 2: List of tasks for payment processing workflow

Task	Description
TIPS.TR.03.010	Execution of technical and business validations; the transaction is rejected and the Originator Participant or Instructing Party notified as soon as one validation fails. This task is covered in section 3.2.3.
TIPS.TR.03.020	Reservation of funds on the Originator Participant account (and decrease of the Originator Participant's CMB headroom, if addressed; see section 5.3.2); if funds cannot be reserved an error occurs and the Originator Participant or Instructing Party is notified. This task is covered in section 3.2.4.
TIPS.TR.03.030	Forwarding of the original payment transaction to the Beneficiary Participant or Instructing Party. This task is covered in section 3.2.5.
TIPS.TR.03.040	Waiting for a reply by the Beneficiary Participant or Instructing Party until a configurable timeout occurs (measured with respect to the SCT Inst timestamp in the payment transaction). This task is covered in section 3.2.6.
TIPS.TR.03.050	Execution of technical and business validations; the Beneficiary Participant reply is rejected and the Beneficiary Participant or Instructing Party notified if one validation fails; decide whether the payment transaction is accepted or rejected. This task is covered in section 3.2.7.
TIPS.TR.03.060	Unreserve the funds (and increase the Originator Participant's CMB headroom, if applicable) which have been reserved during task TR.03.020 (in case of rejection). This task is covered in section 3.2.8.

Task	Description
TIPS.TR.03.070	Settle the funds, i.e. adjust the balances of the two addressed accounts (and increase the Beneficiary Participant's CMB headroom, if addressed); notify both, the Originator Participant or Instructing Party and Beneficiary Participant or Instructing Party. This task is covered in section 3.2.9.

3.2.2 General Requirements

ID	TIPS.UR.03.010
Name	Processing in a first in/first out manner
Requirement	TIPS shall process all payment transactions on a first in/first out (FIFO) basis without prioritisation or reordering of transactions.

Participants are not able to influence TIPS in order to process specific payment transactions with a higher priority. However, owing to the presence of the network and the parallelism of TIPS components which are responsible for processing of incoming messages, Participants cannot rely on payment transactions being processed in exactly the same order they were sent in.

ID	TIPS.UR.03.020
Name	Immediate settlement of payment transactions
Requirement	TIPS shall settle payment transactions immediately and shall not queue or hold payment transactions for later processing.

TIPS does not provide message queues which store payment transactions for an extended period of time due to technical or functional reasons, e.g. (non-exhaustive list):

- Insufficient funds: If TIPS cannot debit an account due to insufficient funds the payment transaction is rejected immediately (and not held until funds are available).
- Technical issues: If TIPS cannot forward the payment transaction to the Beneficiary Participant or Instructing Party the payment transaction is rejected immediately and not held until the Beneficiary Participant or Instructing Party is available again.

Prior settlement TIPS reserves funds on the account to debit in order to ensure that the settlement process cannot fail at a later stage due to insufficient funds.

3.2.3 Validation of Payment Transactions

Payment transactions trigger the payment process. This section lists all user requirements related to the *business* validation of these payment transactions. Section 8.3.1 lists requirements for the *technical* validation of inbound messages.

ID	TIPS.UR.03.030
Name	Business validation of a payment transaction
Requirement	TIPS shall perform business validations of a payment transaction sent by the Originator Participant or Instructing Party. The business validation shall terminate and reject the payment transaction when it encounters the first error.

The TIPS service validates an incoming payment transaction and notifies the Originator Participant in case a business validation error occurred (the requirement for notification is TIPS.UR.03.140). The checks performed during the business validation are specified in the following requirements. In addition technical (see TIPS.UR.08.100) and SCT Inst scheme specific validations (see TIPS.UR.08.101) are performed.

ID	TIPS.UR.03.050
Name	Authorisation to send a payment transaction
Requirement	TIPS shall validate that the party that sent the payment transaction is authorised to instruct for the Originator Participant or Reachable Party as given by the originator BIC (field AT-06 in DS-02).

TIPS allows linking of senders with BICs of Participants or Reachable Parties; the sender could be a Participant or Instructing Party acting on behalf of a Participant or Reachable Party.

ID	TIPS.UR.03.060
Name	Derivation of TIPS account or CMB on the debit side
Requirement	TIPS shall identify for each payment transaction the account to debit or the CMB for which to decrease the headroom (and linked account to debit). TIPS shall determine the account/CMB from the originator BIC (field AT-06 in DS-02) and the currency of the payment transaction.

The originator BIC from field AT-06 of DS-02 is uniquely linked to exactly one account or CMB.

ID	TIPS.UR.03.061
Name	Derivation of TIPS account or CMB on the credit side
Requirement	TIPS shall identify for each payment transaction the account to credit or CMB for which to increase the headroom (and linked account to credit). TIPS shall determine the account/CMB from the beneficiary BIC (field AT-23 in DS-02) and currency of the payment transaction.

The beneficiary BIC from field AT-23 of DS-02 is uniquely linked to exactly one account or CMB.

ID	TIPS.UR.03.080
Name	Existence of Beneficiary Participant
Requirement	TIPS shall validate that the intended Beneficiary Participant or Reachable Party of a payment transaction is reachable within TIPS. The beneficiary BIC (field AT-23 in DS-02) shall identify the intended Beneficiary Participant or Reachable Party.

TIPS rejects the payment transaction if the intended Beneficiary Participant of a payment transaction cannot be identified or reached within TIPS.

ID	TIPS.UR.03.090
Name	Detection of duplicate payment transaction
Requirement	TIPS shall validate that the submitted payment transaction is not a duplicate. These checks have to be performed on messages received within a configurable timeframe based on the following parameters: The BIC of the Originator Participant or Reachable Party (field AT-06 in DS-02) and the reference (field AT-43 in DS-02). The configurable timeframe shall not exceed the data retention period specified in TIPS.UR.03.930, initially set to five calendar days.

The interbank payment dataset DS-02 from the SCT Inst scheme provides two message identifier fields of which one is to be filled by the Originator Participant or Instructing Party, field AT-43. However, this identifier might not be a unique message identifier within TIPS since different sending parties may assign the same message identifier. Therefore the check for duplicate payment transactions uses the combination of BIC code of the Originator Participant or Reachable Party and the message identifier.

ID	TIPS.UR.03.100
Name	Detection of blocked account to debit
Requirement	TIPS shall validate that the payment transaction would not debit an account which is blocked for debiting.

TIPS rejects the payment transaction if the addressed account is blocked and informs the Originator Participant.

ID	TIPS.UR.03.110
Name	Detection of blocked Originator Participant or Reachable Party CMB
Requirement	TIPS shall validate that the payment transaction would not decrease the headroom of a CMB which is blocked from being decreased.

TIPS rejects the payment transaction if the addressed CMB is blocked and informs the Originator Participant.

ID	TIPS.UR.03.111
Name	Detection of blocked account to credit
Requirement	TIPS shall validate that the payment transaction would not credit an account which is blocked for crediting.

TIPS rejects the payment transaction if the addressed account is blocked and informs the Originator Participant.

ID	TIPS.UR.03.112
Name	Detection of blocked Beneficiary Participant or Reachable Party CMB
Requirement	TIPS shall validate that the payment transaction would not increase the headroom of a CMB which is blocked from being increased.

TIPS rejects the payment transaction if the addressed CMB is blocked and informs the Originator Participant.

ID	TIPS.UR.03.120
Name	SCT Inst timestamp validation for payment transaction
Requirement	TIPS shall validate that the payment transaction SCT Inst timestamp (field AT-50 in DS-02) is neither older than one configurable parameter nor younger than another configurable parameter.

This configurable window for payment transaction acceptance should initially be set to accept instant payment transactions which have timestamps between 0.1 seconds in the future and 20 seconds in the past with respect to the SCT Inst timestamp (field AT-50 of DS-02).

ID	TIPS.UR.03.130
Name	Currency validation for payment transaction
Requirement	TIPS shall validate that the payment transaction currency matches the currency defined for both the accounts to debit and credit.

TIPS can only settle payments if the currency of the account to debit matches the currency of the account to credit and the currency of the payment transaction itself.

ID	TIPS.UR.03.131
Name	Validation of the opening and closing dates of TIPS accounts
Requirement	TIPS shall validate that opening and closing dates of both the TIPS accounts to debit and credit are equal to or greater than respectively equal to or less than the current business date.

TIPS rejects the payment transaction if at least one of the two accounts fails to fulfil the aforementioned conditions. Accounts/CMBs are open on their opening date and closed prior their closing date.

ID	TIPS.UR.03.132
Name	Validation of the opening and closing dates of CMBs
Requirement	TIPS shall validate that opening/closing dates of both addressed CMBs, if any, are equal to or greater than respectively equal to or less than the current business date.

TIPS rejects the payment transaction if at least one of the two CMBs fails to fulfil the aforementioned conditions, if CMBs are addressed in the payment transaction.

ID	TIPS.UR.03.133
Name	Validation of the payment amount
Requirement	TIPS shall validate that the amount of a payment transaction is not greater than a configurable parameter. TIPS shall foresee different and independently configurable parameters for different currencies.

The SCT Inst scheme foresees a maximum amount which can be transferred by a single payment transaction. TIPS has to have the capability to check whether this maximum amount is exceeded. However, this check shall be disabled initially. Participants and Instructing Parties are expected to check for this maximum amount prior sending transactions to TIPS. This requirement is identical to TIPS.UR.03.721, which covers the recalled amount.

ID	TIPS.UR.03.134
Name	Validation of existence of IBAN
Requirement	TIPS shall validate that the payment transaction specifies IBANs for the Originator and for the Beneficiary.

The IBANs of an Originator and Beneficiary are mandatory fields in the dataset DS-02 used for payment transaction messages. TIPS checks whether these fields are present but does not validate the IBAN values.

ID	TIPS.UR.03.140
Name	Originator Participant notification in case of a validation error
Requirement	TIPS shall inform the Originator Participant or Instructing Party which sent the payment transaction with a <i>rejection</i> message in case a validation error occurred. This notification shall include a rejection reason code.

Section 8.3.2 contains requirements for the actual messages (see TIPS.UR.08.130).

3.2.4 Reservation of Funds

ID	TIPS.UR.03.150
Name	Reservation of funds on a TIPS account
Requirement	TIPS shall reserve funds on the account to debit immediately after TIPS successfully validated the payment transaction. Reserved funds shall be unavailable for the settlement or reservation of other instant payments, recalls or liquidity transfers.

TIPS reserves funds after successfully validating the payment transaction in order to ensure that settlement can take place when the Beneficiary Participant reply arrives (the transaction cannot be rejected due to insufficient funds). If the Beneficiary Participant or Instructing Party rejects the payment TIPS reverses the reservation and rejects the transaction. TIPS reserves funds also on the underlying account if the payment transaction addresses a CMB on the originator side (see TIPS.UR.03.160).

ID	TIPS.UR.03.160
Name	Reservation of limits on a CMB
Requirement	TIPS shall decrease the Originator Participant or Reachable Party CMB headroom by the amount needed for settlement immediately after the payment transaction is successfully validated, if the transaction addresses a CMB on the originator side. At the same time TIPS has to reserve funds on the underlying account as well.

If the originator BIC in the payment transaction is linked to a CMB TIPS decreases the headroom of that CMB in order to reserve a part of the limit of the CMB for settlement of the transaction. In addition TIPS reserves funds on the underlying account (see TIPS.UR.03.150).

ID	TIPS.UR.03.170
Name	Rejection of payment transaction due to insufficient funds or CMB headroom
Requirement	TIPS shall reject payment transactions due to insufficient funds in the following two cases: <ul style="list-style-type: none"> (i) the unreserved balance of the account to debit is less than the payment transaction amount; or (ii) the payment transaction amount exceeds the CMB headroom or the unreserved balance of the linked account to debit.

A payment transaction can reduce the account balance or CMB headroom to zero exactly; however, reduction to a negative account balance or a negative CMB headroom is not possible.

ID	TIPS.UR.03.180
Name	Originator Participant notification in case of insufficient funds
Requirement	TIPS shall inform the Originator Participant or Instructing Party through a <i>rejection</i> message using a rejection reason code when TIPS cannot reserve the required amount on the account to debit or in case the payment transaction amount exceeds the CMB headroom, in case a CMB is addressed.

Section 8.3.2 contains requirements for the actual messages (see TIPS.UR.08.130).

3.2.5 Forwarding of Payment Transactions

ID	TIPS.UR.03.190
Name	Forwarding of a payment transaction to the Beneficiary Participant or Instructing Party
Requirement	TIPS shall forward payment transactions which were successfully validated to the Beneficiary Participant or Instructing Party.

Section 8.3.2 contains requirements for the actual messages (see TIPS.UR.08.120 for the original payment transaction).

3.2.6 Waiting for Beneficiary Participant Reply

ID	TIPS.UR.03.200
Name	Waiting for a Beneficiary Participant reply
Requirement	TIPS shall wait for a reply by the Beneficiary Participant or Instructing Party and continue processing as soon as the message arrives.

A payment transaction remains pending until TIPS either receives a positive (acceptance of the payment) or negative (rejection of the payment) reply from the Beneficiary Participant or Instructing Party or until a timeout occurs (see TIPS.UR.03.210). The requirement for the actual message is given in section 8.3.2 (see TIPS.UR.08.140).

ID	TIPS.UR.03.210
Name	Beneficiary Participant reply timeout
Requirement	TIPS shall reject the payment transaction in case a configurable timeout is reached and no Beneficiary Participant reply is received. The reference timestamp for this timeout calculation shall be the SCT Inst timestamp (field AT-50 in DS-02) from the original payment transaction.

In case the timeout is reached, the payment cannot be processed within the required timespan and TIPS rejects the transaction. According to the SCT Inst scheme TIPS should wait until 20 seconds have passed since the SCT Inst timestamp provided by the Originator Participant or Instructing Party.

ID	TIPS.UR.03.220
Name	Beneficiary Participant notification in case of timeout
Requirement	TIPS shall inform the Beneficiary Participant or Instructing Party with a <i>beneficiary participant status</i> message in case a timeout occurred.

Section 8.3.2 contains requirements for the actual messages (see TIPS.UR.08.150).

3.2.7 Validation of Beneficiary Participant Reply

Beneficiary Participant replies are part of the payment processing workflow. After TIPS forwards the payment transaction to the Beneficiary Participant or Instructing Party TIPS expects a reply, which must either be the acceptance or rejection of the payment. This section lists all user requirements related to the business validation of these replies from the Beneficiary Participant or Instructing Party. Requirements for the technical validation of inbound messages can be found in section 8.3.1.

ID	TIPS.UR.03.230
Name	Business validation for Beneficiary Participant reply
Requirement	TIPS shall perform business validations of Beneficiary Participant replies sent by the Beneficiary Participant or Instructing Party. The business validation shall terminate and reject the payment transaction when it encounters the first error.

TIPS validates an incoming Beneficiary Participant reply and notifies the Beneficiary Participant or Instructing Party in case a business validation error occurred. The requirements for notification are TIPS.UR.03.320 (Beneficiary Participant or Instructing Party) and TIPS.UR.03.360 (Originator Participant or Instructing Party, only after unreservation of funds). In addition technical (see TIPS.UR.08.100) and SCT Inst scheme specific validations (see TIPS.UR.08.101) are performed.

ID	TIPS.UR.03.240
Name	Authorisation to send a Beneficiary Participant reply
Requirement	TIPS shall validate that the Beneficiary Participant reply is sent from the party to whom TIPS has forwarded the original payment transaction.

The sender of the Beneficiary Participant reply is either the Beneficiary Participant or an Instructing Party acting on behalf of the Beneficiary Participant or a Reachable Party.

ID	TIPS.UR.03.250
Name	Check for original payment transaction identifier in Beneficiary Participant reply
Requirement	TIPS shall match the reply message with a pending payment transaction using the BIC of the Originator Participant or Reachable Party (field AT-06 in DS-02 of the forwarded payment transaction) and message reference of the Originator Participant or Instructing Party (field AT-43 in DS-02 of the forwarded payment transaction). If TIPS does not find any matching pending transaction the reply message shall fail validation.

TIPS processes a Beneficiary Participant reply only for a payment transaction which has been forwarded to a Beneficiary Participant or Instructing Party and is still pending, i.e. the payment transaction did not reach its final status yet (settled or rejected). Since different parties might use identical message references TIPS has to use the BIC of the Originator Participant or Reachable Party as additional matching criterion.

ID	TIPS.UR.03.320
Name	Beneficiary Participant notification in case of a validation error
Requirement	TIPS shall inform the Beneficiary Participant or Instructing Party which sent the Beneficiary Participant reply message with a <i>beneficiary participant status</i> message in case a validation error occurred. This notification shall include a rejection code.

In addition to the Beneficiary Participant or Instructing Party, TIPS informs the Originator Participant or Instructing Party which sent the original payment transaction. However, TIPS only undertakes this notification after the reserved funds on the account to debit have been unreserved, see TIPS.UR.03.340. Section 8.3.2 contains requirements for the actual messages (see TIPS.UR.08.150).

ID	TIPS.UR.03.330
Name	Check for acceptance of funds
Requirement	When TIPS validated the reply of the Beneficiary Participant or Instructing Party, then TIPS shall settle the amount if the Beneficiary Participant or Instructing Party accepted the funds or TIPS shall reject the payment transaction if the Beneficiary Participant or Instructing Party rejected the funds.

In case the Beneficiary Participant or Instructing Party rejects the funds they are unreserved on the account on the originator side (in addition, if a CMB was addressed, its headroom is increased as well).

3.2.8 Unreservation of Funds

ID	TIPS.UR.03.340
Name	Unreserving funds on TIPS accounts due to rejection
Requirement	TIPS shall unreserve funds on the account to debit when TIPS rejects the payment transaction that triggered the reservation. TIPS shall reduce the reserved amount on the account by the amount of the reserving transaction. The available amount shall be increased by the same amount.

During payment processing funds are reserved on the account in order to guarantee settlement if the Beneficiary Participant reply passes its validation and is positive (see section 3.2.4). In case settlement does not take place (e.g. the reply does not pass its validation, times out or is negative) the reserved funds have to be unreserved and made available for instant payments or liquidity transfer settlement. TIPS unreserves funds also on the underlying account if the payment transaction addresses a CMB on the originator side (see TIPS.UR.03.350).

ID	TIPS.UR.03.350
Name	Unreserving headroom on CMB due to rejection
Requirement	TIPS shall increase the Originator Participant or Reachable Party CMB headroom with the amount of the payment transaction when TIPS rejects the payment transaction that decreased the CMB headroom. At the same time TIPS has to unreserve funds on the underlying account as well.

This increase is only required if the Originator Participant or Reachable Party BIC is linked to a CMB. In addition TIPS unreserves funds on the underlying account (see TIPS.UR.03.340).

ID	TIPS.UR.03.360
Name	Originator Participant notification in case of unreservation of funds
Requirement	TIPS shall inform the Originator Participant or Instructing Party which sent the original payment transaction with a <i>rejection</i> message in case TIPS unreserved funds on their account. This rejection message shall contain a rejection reason code which is either provided by TIPS (in case TIPS rejects) or provided in the Beneficiary Participant reply message (in case the Beneficiary Participant or Instructing Party rejects).

Either a failed validation, timeout of the Beneficiary Participant reply message or a negative response (i.e. non-acceptance of the payment) by the Beneficiary Participant or Instructing Party can trigger the unreservation of funds in TIPS. In the latter case, TIPS shall provide the rejection reason code from the negative Beneficiary Participant reply to the Originator Participant or Instructing Party. Section 8.3.2 contains requirements for the actual messages (see TIPS.UR.08.130).

3.2.9 Settlement

ID	TIPS.UR.03.370
Name	Gross settlement of payment transactions
Requirement	TIPS shall settle payment transactions individually, without netting.

TIPS does not net due to the instant nature of the payment transactions processed by TIPS.

ID	TIPS.UR.03.380
Name	Settlement with finality
Requirement	TIPS shall settle the instructed amount with finality on TIPS accounts. Settlement shall be irrevocable.

This also applies if the account to debit and credit is identical (e.g. in case a Participant sends a payment to one of its Reachable Parties using the same account).

ID	TIPS.UR.03.390
Name	Moment of settlement
Requirement	Settlement shall occur directly after a successful validation of a positive Beneficiary Participant reply message or positive recall answer message.

The moment of settlement is recorded via a settlement timestamp with the value date of the settlement being the current RTGS system business day even during the weekend (i.e. settlements during the weekend have a value date which is not necessarily the calendar date).

ID	TIPS.UR.03.400
Name	Full amount settlement for payment transactions
Requirement	TIPS shall always settle for the full amount as specified in the payment transaction.

If TIPS cannot settle for the full amount the payment transaction is rejected and not settled partially.

ID	TIPS.UR.03.410
Name	Usage of reserved amount for settlement of instant payments
Requirement	TIPS shall use reserved funds on the account to debit for the settlement of instant payments.

TIPS settles instant payment transactions using reserved funds on the account to debit with TIPS also crediting these funds as unreserved funds (i.e. the user of the credited account is able to reuse the funds immediately after settlement).

ID	TIPS.UR.03.420
Name	Increase of headroom on CMB
Requirement	TIPS shall increase the headroom on the Beneficiary Participant or Reachable Party CMB at the same time the instant payment is settled successfully, if the payment transaction addresses a CMB.

This increase is only required if the Beneficiary Participant or Reachable Party BIC is linked to a CMB.

ID	TIPS.UR.03.440
Name	Credit transfers only
Requirement	TIPS shall support credit transfers only.

TIPS accepts only payment transactions which debit a TIPS account of a Participant. Any functionality for pull payments, i.e. direct debits, is out of scope of TIPS.

ID	TIPS.UR.03.450
Name	Confirmation message for successful settlement
Requirement	TIPS shall confirm the successful settlement of a payment transaction to the Originator Participant or Instructing Party as well as the Beneficiary Participant or Instructing Party with a <i>confirmation</i> message.

Section 8.3.2 contains requirements for the actual messages (see TIPS.UR.08.160).

3.3 RECALLS

The TIPS service allows the transmission and answer of recalls of SCT Inst payment transactions (see ref. [1]).

3.3.1 Recall Process Diagrams

Figure 4 and Figure 5 show the process flow diagram for recalls and recall answers and contain message events and tasks, which lead to user requirements. Table 3 contains the list of messages while section 8.3.3 contains the actual requirements for these messages. Tasks are listed in Table 4 and further detailed in the following sections.

Figure 4
Recall process

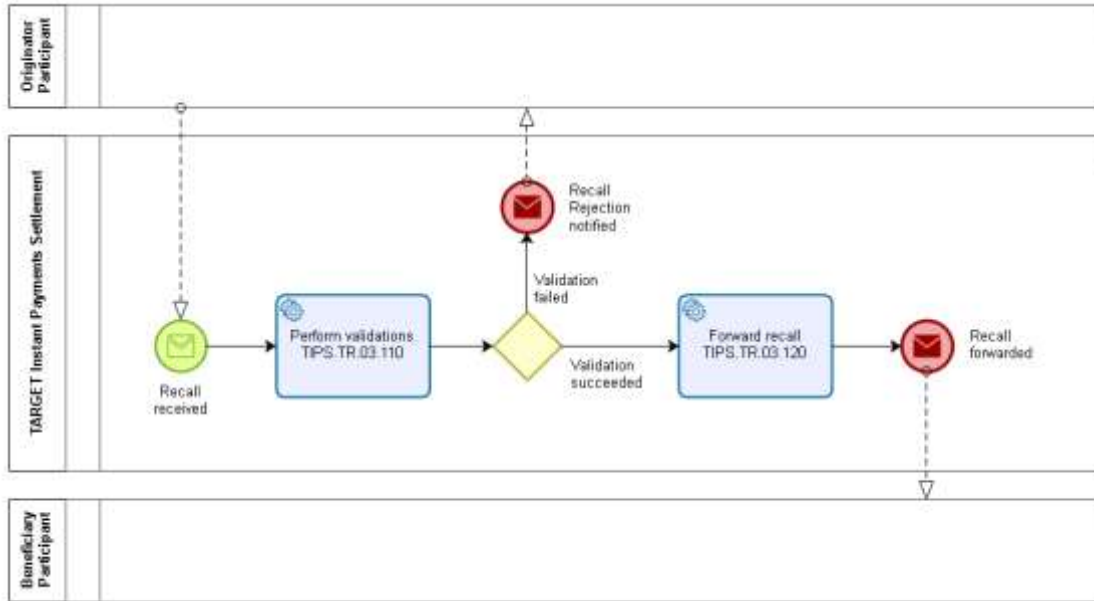


Figure 5
Recall answer process

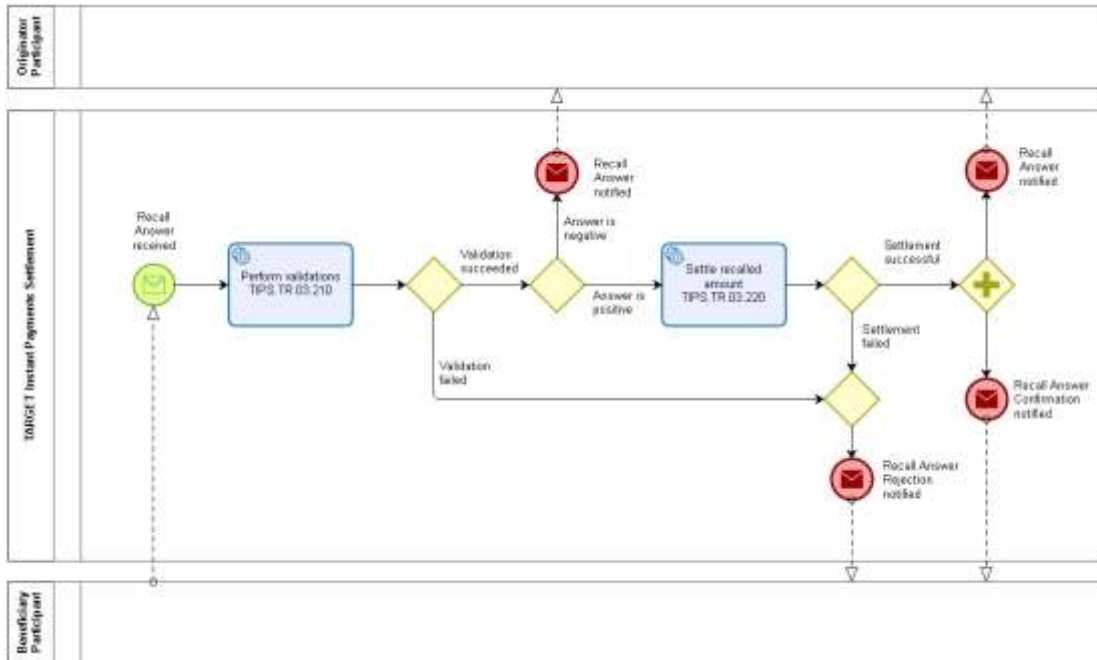


Table 3: List of messages for recall processing

Message	Description
Recall	A message sent by the Originator Participant or Instructing Party requesting the return of funds previously settled. Further details can be found in TIPS.UR.08.170.
Recall Rejection	A notification informing the Originator Participant or Instructing Party that the recall message failed its validation. Further details can be found in TIPS.UR.08.180.
Recall Answer	An answer message to the recall either accepting or rejecting it. Further details can be found in TIPS.UR.08.190.
Recall Answer Rejection	A notification informing the sender of the recall answer that the recall answer message failed its validation or could not be settled (only in case of a positive recall answer). Further details can be found in TIPS.UR.08.200.
Recall Answer Confirmation	A notification informing the sender of the recall answer that the recall has been settled successfully. Further details can be found in TIPS.UR.08.201.

Table 4: List of tasks for recall processing

Task	Description
TIPS.TR.03.110	Execute technical and business validations for the recall message. This task is covered in section 3.3.2.
TIPS.TR.03.120	Forward the recall to the Beneficiary Participant or Instructing Party. This task is covered in section 3.3.3.
TIPS.TR.03.210	Execute technical and business validations for the recall answer message and inform the Originator Participant or Instructing Party in case the answer is negative. This task is covered in section 3.3.4.
TIPS.TR.03.220	If the answer is positive settle the recalled amount and forward a positive answer message to the Originator Participant or Instructing Party. This task is covered in section 3.3.5.

3.3.2 Validation of Recalls

ID	TIPS.UR.03.600
Name	Business validation of recalls
Requirement	TIPS shall perform business validations of recalls sent by the Originator Participant or Instructing Party. The business validation shall terminate and reject the recall when it encounters the first error.

The recall rejection message in case validation fails is covered in TIPS.UR.03.630. In addition technical (see TIPS.UR.08.100) and SCT Inst scheme specific validations (see TIPS.UR.08.101) are performed.

ID	TIPS.UR.03.610
Name	Authorisation to send recalls
Requirement	TIPS shall validate that a party which is authorised to send recalls for the Originator Participant or Reachable Party as given by the originator BIC in the DS-02 part (field AT-06) of the recall message (which is DS-05, a superset of DS-02) sent the inbound recall.

Parties which are authorised to initiate recalls for particular payment transactions are identical with the parties that are authorised to instruct in the first place. TIPS uses the data from the original payment transaction submitted as part of the recall in order to validate, if the party issues the recall is authorised to do so. TIPS performs this authorisation check using the most recent reference data. Changes done to the reference data affecting access rights may change the outcome of the authorisation check between processing of the original transaction and processing of the recall. For example, TIPS would reject a recall even if the same party that initially instructed the payment issues the recall if the access rights have been changed for that party between the initial payment transaction submission and the submission of the recall.

ID	TIPS.UR.03.620
Name	Addressee of recall
Requirement	TIPS shall validate that the recipient of the recall can be reached via TIPS. The recipient is the Beneficiary Participant or Instructing Party as determined from the beneficiary BIC that the DS-02 part (field AT-23) of the recall message (which is DS-05, a superset of DS-02) specifies.

TIPS uses the payment transaction dataset embedded in the recall message to determine whether TIPS can reach the recipient of the recall. TIPS performs no further field validations on the payment transaction message embedded in the recall.

ID	TIPS.UR.03.630
Name	Rejection of recall
Requirement	TIPS shall reject the recall in case a validation error occurred and inform the sender of the recall with a <i>recall rejection</i> message.

In case a recall message cannot be validated the sender of this recall (i.e. the Originator Participant or Instructing Party of the original payment transaction) is informed. Section 8.3.3 contains requirements for the actual messages (see TIPS.UR.08.180).

3.3.3 Forwarding of Recalls

ID	TIPS.UR.03.640
Name	Forwarding of recall to intended recipient
Requirement	TIPS shall forward a validated recall to its addressee as determined from the BIC given in the DS-02 part (field AT-23) of the recall message dataset DS-05.

Besides the listed validations TIPS does not process recalls any further and just forwards them to their intended recipient.

3.3.4 Validation of Recall Answers

ID	TIPS.UR.03.650
Name	Business validation of recall answer
Requirement	TIPS shall perform business validations of a recall answer sent by the Beneficiary Participant or Instructing Party. The business validation shall terminate and reject the recall answer when it encounters the first error.

Section 8.3.3 contains requirements for the actual messages (see TIPS.UR.08.190). In addition technical (see TIPS.UR.08.100) and SCT Inst scheme specific validations (see TIPS.UR.08.101) are performed.

ID	TIPS.UR.03.660
Name	Authorisation to answer recall
Requirement	TIPS shall validate whether the party that send the recall answer is authorised to answer to that recall.

The party which is authorised to answer to a recall is the same party to which TIPS forwarded the initial recall. TIPS uses the payment transaction dataset embedded in the recall answer message to determine if the sender of the recall answer is authorised to answer the recall. The sender of the recall answer can be a party acting on behalf of the Beneficiary Participant. TIPS performs this authorisation check using the most recent reference data. Changes done to the reference data affecting access rights may change the outcome of the authorisation check between processing of the recall and processing of the recall answer.

ID	TIPS.UR.03.670
Name	Validation of recall answer status
Requirement	TIPS shall validate that the recall answer contains either an acceptance or rejection code in line with possible codes of the recall answer dataset DS-06.

TIPS process positive recall answers (see the following requirements in this section) and just forwards negative answers to the Originator Participant or Instructing Party (see TIPS.UR.03.740).

ID	TIPS.UR.03.680
Name	Validation of positive recall answer BICs
Requirement	<i>In case the recall is positive:</i> TIPS shall validate that the recall answer contains the BIC of the Originator and Beneficiary Participant or Reachable Party within the dataset DS-02, which is a subset of the recall answer dataset DS-06.

The payment transaction dataset (DS-02) of the transaction being recalled is part of the positive recall answer dataset DS-06.

ID	TIPS.UR.03.700
Name	Derivation of TIPS account or CMB from positive recall answer
Requirement	<i>In case the recall is positive:</i> TIPS shall determine from the Originator Participant or Reachable Party BIC and Beneficiary Participant or Reachable Party BIC within the recall answer message the accounts or CMBs that TIPS has to use for settlement of the recall. TIPS shall take the currency into account as well. The Originator Participant or Reachable Party BIC (field AT-06 in DS-02, which is part of DS-06) has to be interpreted as the Beneficiary Participant or Reachable Party BIC for the reversed cash flow, and vice versa.

The recall answer dataset contains the BICs of the Originator Participant or Reachable Party as well as the Beneficiary Participant or Reachable Party within the dataset DS-02, which is a subset of DS-06. The roles of these two entities have to be inverted for the recall settlement.

ID	TIPS.UR.03.710
Name	Detection of blocked account/CMB for a positive recall answer (A)
Requirement	<i>In case the recall is positive:</i> TIPS shall validate that the positive recall answer would not credit an account which is blocked for crediting or increase the headroom of a CMB which is blocked for increases.

The accounts or CMBs which TIPS determines based on the BICs contained within the positive recall answer may have been blocked for crediting or increases between processing of the original payment transaction and processing of the positive recall answer.

ID	TIPS.UR.03.720
Name	Detection of blocked account/CMB for a positive recall answer (B)
Requirement	<i>In case the recall is positive:</i> TIPS shall validate that the positive recall answer would not debit an account which is blocked for debiting or decrease the headroom of a CMB which is blocked for decreases.

The accounts or CMBs which TIPS determines based on the BICs contained within the positive recall answer may have been blocked for debiting or decreases between processing of the original payment transaction and processing of the positive recall answer.

ID	TIPS.UR.03.721
Name	Validation of the recalled amount
Requirement	<i>In case the recall is positive:</i> TIPS shall validate that the recalled amount is not greater than a configurable parameter. TIPS shall foresee different and independently configurable parameters for different currencies.

This requirement is identical to TIPS.UR.03.133, which covers payment transactions.

ID	TIPS.UR.03.722
Name	Validation of the opening/closing dates of accounts/CMBs for a positive recall answer
Requirement	<i>In case the recall is positive:</i> TIPS shall validate that opening/closing dates of the determined accounts or CMBs from TIPS.UR.03.700 are equal to or greater than respectively equal to or less than the current business date.

This requirement is identical to TIPS.UR.03.131/132, which cover payment transactions.

ID	TIPS.UR.03.730
Name	Rejection of recall answer
Requirement	TIPS shall inform the sender of the recall answer with a <i>recall answer rejection</i> message in case a validation error occurred and the recall answer is rejected.

Section 8.3.3 contains requirements for the actual messages (see TIPS.UR.08.200).

ID	TIPS.UR.03.740
Name	Forwarding of negative recall answer
Requirement	TIPS shall forward negative recall answers which were successfully validated to the Originator Participant or Instructing Party as determined from the originator BIC contained in the DS-02 subset of the recall answer dataset DS-06.

TIPS just informs the Originator Participant or Instructing Party in case of a negative recall answer (in contrast to positive recall answers, that require additional processing and are handled in the following section 3.3.5). Section 8.3.3 contains requirements for the actual messages (see TIPS.UR.08.190).

3.3.5 Processing Positive Recall Answers

A positive recall answer message has to contain the full SCT Inst dataset which was originally used for the payment transaction that is recalled.

ID	TIPS.UR.03.750
Name	Creation of reversed cash flow due to positive recall answer
Requirement	TIPS shall use the positive recall answer message and determine a suitable payment transaction dataset which reverses the direction of the cash flow from the original payment transaction that is recalled.

In case the recall answer is positive and passes its validation TIPS automatically attempts to settle the reversed cash flow using the same or a different amount (the Beneficiary Participant or Instructing Party may apply a fee for recalls).

ID	TIPS.UR.03.760
Name	Derivation of new cash amount from positive recall answer
Requirement	For the reversed cash flow TIPS shall use a transaction amount taken from the recall answer field AT-46 of the SCT Inst dataset DS-06 for a positive response.

The new cash amount for the reversed cash flow is given in a mandatory field of the recall dataset DS-06 (AT-46). That amount could be lower than the original amount due to a fee applied by the Beneficiary Participant or Instructing Party.

ID	TIPS.UR.03.770
Name	Settlement requirements for positive recall answer
Requirement	The following settlement related requirements shall apply for recall payment transactions as well: <ul style="list-style-type: none"> • TIPS.UR.03.130 (Currency validation for payment transaction); • TIPS.UR.03.380 (Settlement with finality); • TIPS.UR.03.390 (Moment of settlement); • TIPS.UR.03.400 (Full amount settlement for payment transactions).

The user requirements already stated in the settlement section of the payment process flow apply also for payment transactions automatically generated by TIPS during processing of a positive recall answer. The “full amount” from TIPS.UR.03.400 refers to the amount from TIPS.UR.03.760, which may be different from the amount of the original payment transaction which is recalled.

ID	TIPS.UR.03.780
Name	Increase/Decrease of CMB headroom addressed by recall
Requirement	TIPS shall increase or decrease the headroom of the CMBs addressed by the recall.

If the BICs contained in the positive recall answer are linked to one or two CMBs the headroom on these CMBs is increased or decreased (similar to TIPS.UR.03.160 and TIPS.UR.03.420 for payment transactions). This increase or decrease is reflected in the balances of the underlying accounts.

ID	TIPS.UR.03.790
Name	Insufficiency of funds for settlement of recall
Requirement	TIPS shall reject positive recall answers due to insufficient funds in the following two cases: <ul style="list-style-type: none"> (i) the unreserved balance of the account to debit is less than the recalled amount; or (ii) the recalled amount exceeds the CMB headroom or the unreserved balance of the linked account to debit.

A positive recall answer can reduce the account balance or CMB headroom to zero exactly; however, reduction to a negative account balance or a negative CMB headroom is not possible.

ID	TIPS.UR.03.800
Name	Forwarding of positive recall answer message in case of settlement
Requirement	TIPS shall forward the <i>recall answer</i> message to the Originator Participant or Instructing Party (the sender of the recall) after settlement of the recall took place.

Section 8.3.3 contains requirements for the actual messages (see TIPS.UR.08.190).

ID	TIPS.UR.03.801
Name	Recall answer confirmation message in case of settlement
Requirement	TIPS shall inform the Beneficiary Participant or Instructing Party (the sender of the recall answer) with a <i>recall answer confirmation</i> message in case settlement of the recall took place.

Section 8.3.3 contains requirements for the actual messages (see TIPS.UR.08.201).

ID	TIPS.UR.03.810
Name	Rejection message in case of unsuccessful recall settlement
Requirement	TIPS shall inform the Beneficiary Participant or Instructing Party (the sender of the recall answer) with a <i>recall answer rejection</i> message in case settlement of the recall cannot take place. This message shall contain a rejection reason code.

Section 8.3.3 contains requirements for the actual messages (see TIPS.UR.08.200).

3.4 INVESTIGATIONS

The TIPS service has to support a transaction status investigation process, which can be initiated by the Originator Participant or Instructing Party; this investigation process is required by the SCT Inst scheme. Complementing this status investigation process TIPS provides additional queries, which can be used for the inquiry regarding the status of a particular transaction (see section 7). Table 5 contains the list of messages used for this status inquiry.

Table 5: List of messages for status investigations

Message	Description
Status inquiry	A message which queries the service for the current status of a previously processed payment transaction. Further details can be found in TIPS.UR.08.205.
Status inquiry rejection	A notification sent by TIPS to the sender of the status inquiry in case the inquiry message cannot be validated (e.g. the referenced payment transaction has not been processed. Further details can be found in TIPS.UR.08.206.
Status inquiry reply	A notification sent by TIPS to the sender of the status inquiry containing the current payment transaction status. Further details can be found in TIPS.UR.08.207.

3.4.1 Validation of Status Inquiry Messages

SCT Inst scheme status inquiry messages trigger the investigation process in TIPS. This section lists all user requirements related to the *business* validation of these investigation messages. Section 8.3.1 lists requirements for the *technical* validation of inbound messages.

ID	TIPS.UR.03.910
Name	Business validation of a status inquiry
Requirement	TIPS shall perform business validations of status inquiries sent by the Originator Participant or Instructing Party. The business validation shall terminate and reject the inquiry when it encounters the first error.

The inquiry rejection message in case validation fails is covered in TIPS.UR.03.950. In addition technical (see TIPS.UR.08.100) and SCT Inst scheme specific validations (see TIPS.UR.08.101) are performed.

ID	TIPS.UR.03.920
Name	Identification of payment transaction whose status is queried
Requirement	TIPS shall look up the payment transaction whose status is queried by using the data provided in the status inquiry message. If no matching payment transaction can be found the status inquiry validation shall fail.

The status inquiry message contains the Originator Participant or Instructing Party reference from field AT-43 of DS-02 as well as the used SCT Inst timestamp of the payment transaction, which can be used for matching.

ID	TIPS.UR.03.930
Name	Data retention period for status inquiry
Requirement	TIPS shall retain data relevant for status inquiries for a configurable timeframe.

TIPS has to retain data required for answering a status inquiry for 5 calendar days. Afterwards status inquiries cannot be answered by TIPS anymore. The timeframe for data retention could be shortened in the future if deemed necessary.

ID	TIPS.UR.03.940
Name	Authorisation to send a status inquiry
Requirement	TIPS shall validate that the status inquiry message is sent from a party which is authorised to inquire for the Originator Participant or Instructing Party as defined by the originator BIC in the payment transaction whose status is queried. If this is not the case the status inquiry shall be rejected.

Only Participants or Instructing Parties acting on behalf of Participants or Reachable Parties on the originator side are authorised to inquire about a payment transaction status.

ID	TIPS.UR.03.950
Name	Sender notification in case of status inquiry validation error
Requirement	TIPS shall inform the sender of a status inquiry with a <i>status inquiry rejection</i> message in case the inquiry message cannot be validated.

Section 8.3.4 contains requirements for the actual messages (see TIPS.UR.08.206).

3.4.2 Processing of Status Inquiry Messages

ID	TIPS.UR.03.960
Name	Investigation answer
Requirement	TIPS shall answer to a status inquiry with a <i>status inquiry reply</i> message. This answer shall be a copy of the rejection or confirmation message, which TIPS sent to the Originator Participant or Instructing Party during processing of the payment transaction message whose status is queried.

Section 8.3.4 contains requirements for the actual messages (see TIPS.UR.08.207).

4 LIQUIDITY MANAGEMENT

The objective of this chapter is to outline the liquidity management functionality of the TIPS service. Both directions, the transfer of liquidity to TIPS from an RTGS (inbound) and from TIPS to an RTGS (outbound) are covered.

4.1 OVERVIEW

The TIPS service has to support outbound and inbound liquidity transfers to/from RTGS systems in order to fund accounts of TIPS Participants. Currently only euro liquidity transfers from/to TARGET2 are foreseen. The requirements of this chapter, however, shall apply to different RTGS systems as well.

Participants or Instructing Parties acting on behalf of Participants can trigger **outbound liquidity transfers** in TIPS⁶ using a liquidity transfer order message. After TIPS performed necessary validations⁷ TIPS transfers the requested amount from the TIPS account to a (technical) transit account; there is no reservation of funds. After successful settlement TIPS informs the corresponding RTGS about the liquidity transfer in order to allow suitable booking. The RTGS is expected to reply with either a confirmation or a rejection message. In case the RTGS accepts the liquidity transfer TIPS confirms the successful transfer of liquidity to the Participant or Instructing Party who initiated it. In case the RTGS rejects the liquidity transfer TIPS automatically books the amount back from the transit account to the TIPS account and informs the initiator of the liquidity transfer about the failure. In case the RTGS does not respond within a configurable timeframe TIPS stops the outbound liquidity transfer process and alerts the TIPS operator, who can then initiate appropriate further actions (depending on the reason for this timeout and the current status of TIPS and the RTGS).

Authorised entities can trigger **inbound liquidity transfers** in the corresponding RTGS⁸; these entities do not necessarily need to be TIPS Participants – funding for TIPS accounts can be provided by any entity who owns a PM account in TARGET2. For these inbound liquidity transfers TIPS expects a liquidity transfer order message from the RTGS, which is then validated. In case the validation fails TIPS rejects the liquidity transfer and informs the RTGS about this rejection. In case the validation is successful TIPS transfers the requested amount from the (technical) transit account to the TIPS account. After settlement TIPS informs the RTGS and optionally the owner of the account about the successful settlement.

Figure 6 and Figure 7 show the process flow diagram for outbound and inbound liquidity transfers and contain message events and tasks, which lead to user requirements. Table 6 and Table 8 contain the list of messages while section 8.3.5 contains the actual requirements for these messages. Tasks are listed in Table 7 and Table 9 and are further detailed in the following sections.

⁶ Only outbound liquidity transfers from TIPS to the RTGS can be triggered in TIPS.

⁷ Validations are, e.g. sufficiency of funds, currency of the account or current status of the RTGS (opening hours).

⁸ Inbound liquidity transfers can only be triggered in the RTGS.

Figure 6
Outbound liquidity transfer process

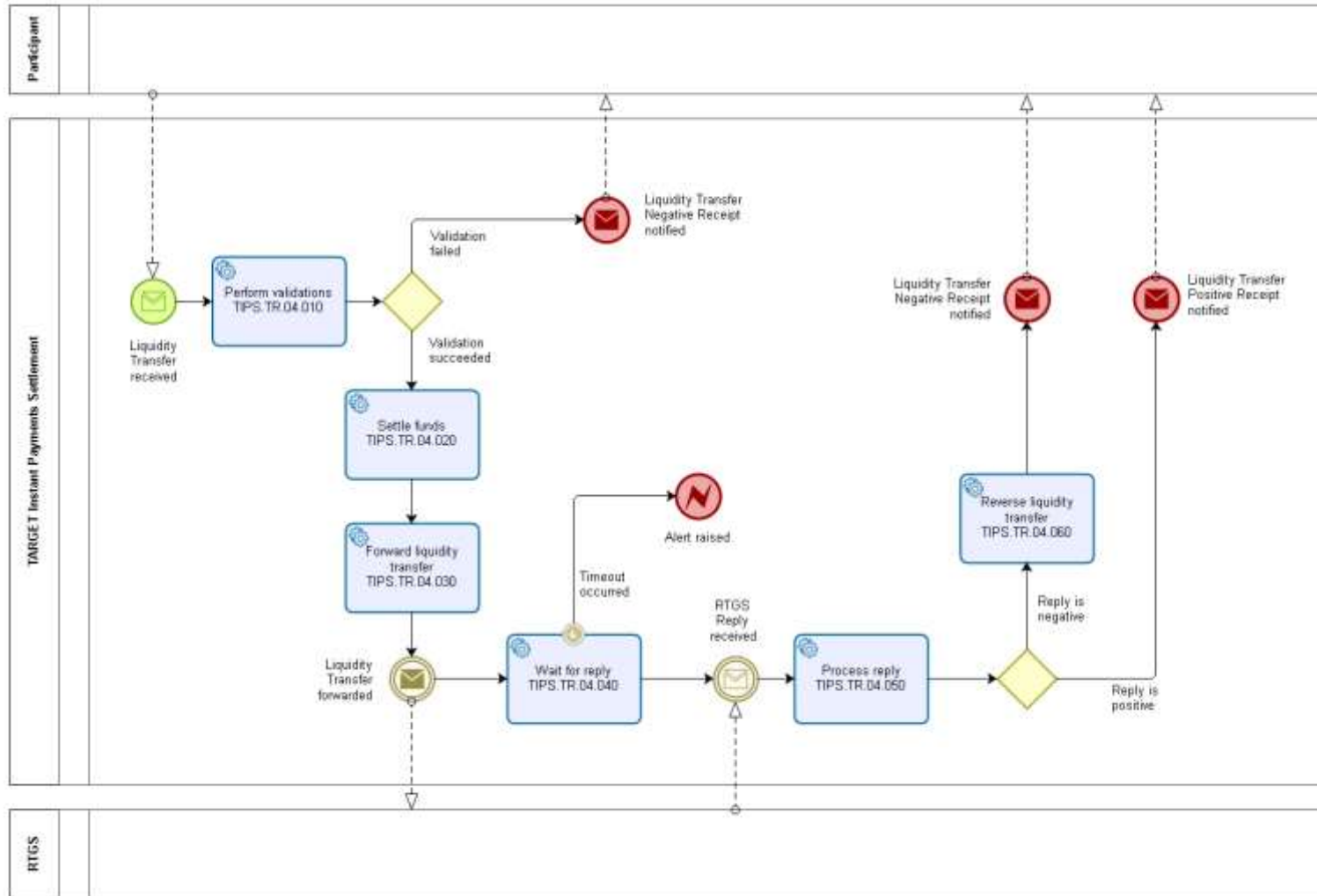


Table 6: List of messages for outbound liquidity transfers

Message	Description
Liquidity Transfer	An order to transfer liquidity from TIPS to an RTGS account. This message is forwarded by TIPS to the corresponding RTGS, after successful settlement in TIPS. Further details can be found in TIPS.UR.08.210.
RTGS Reply	A reply sent by the RTGS to TIPS accepting or rejecting the liquidity transfer. Further details can be found in TIPS.UR.08.220.
Liquidity Transfer Negative Receipt	Negative receipt message sent by TIPS to the Participant in case an error occurred (e.g. RTGS is closed or the RTGS rejected the liquidity transfer). Further details can be found in TIPS.UR.08.230.
Liquidity Transfer Positive Receipt	A positive receipt notifying the Participant about the successful execution of the liquidity transfer in the RTGS. Further details can be found in TIPS.UR.08.240.

Table 7: List of tasks for outbound liquidity transfer workflow

Task	Description
TIPS.TR.04.010	Execution of technical and business validations; the outbound liquidity transfer is rejected as soon as one validation fails. This task is covered in section 4.2.1.
TIPS.TR.04.020	Settle the funds with finality, i.e. debit the Participant TIPS account and credit the RTGS transit account in TIPS. This task is covered in section 4.2.2.
TIPS.TR.04.030	Forward the liquidity transfer message to the RTGS. This task is covered in section 4.2.3.
TIPS.TR.04.040	Wait for a settlement confirmation from the RTGS. This task is covered in section 4.2.4.
TIPS.TR.04.050	Process the reply from the RTGS and send positive receipt to the initiator of the liquidity transfer upon successful settlement in the RTGS. This task is covered in section 4.2.5.
TIPS.TR.04.060	Reverse the liquidity transfer and send a negative receipt to the initiator of the liquidity transfer message, in case of rejection from the RTGS. This task is covered in section 4.2.6.

Figure 7
Inbound liquidity transfer process

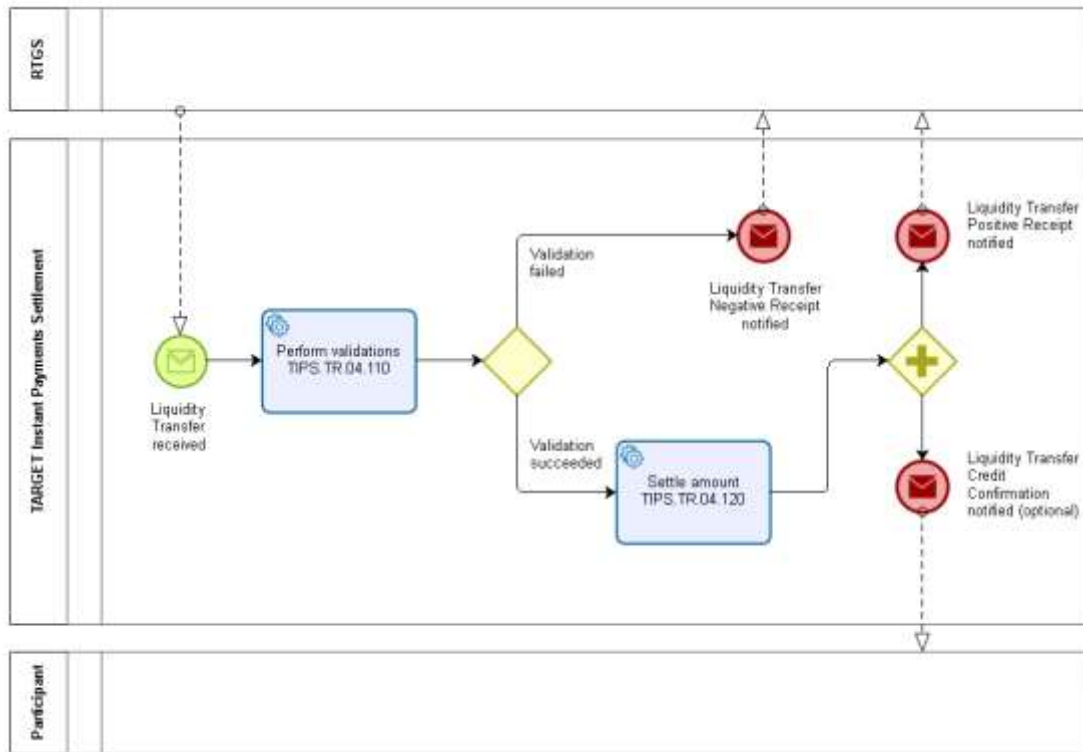


Table 8: List of messages for inbound liquidity transfers

Message	Description
Liquidity Transfer	Liquidity transfer message routed by the RTGS to TIPS. Further details can be found in TIPS.UR.08.210.
Liquidity Transfer Negative Receipt	Liquidity transfer negative receipt message sent by TIPS to the RTGS in case an error occurred (e.g. unsuccessful validation in TIPS. Further details can be found in TIPS.UR.08.230.
Liquidity Transfer Positive Receipt	Liquidity transfer positive receipt message sent by TIPS to the RTGS in case of successful. Further details can be found in TIPS.UR.08.240.
Liquidity Transfer Credit Confirmation	A message notifying the RTGS about the successful credit of a TIPS account. Further details can be found in TIPS.UR.08.250.

Table 9: List of tasks for inbound liquidity transfer workflow

Task	Description
TIPS.TR.04.110	Execution of technical and business validations; the inbound liquidity transfer is rejected as soon as one validation fails. This task is covered in section 4.2.7.
TIPS.TR.04.120	Settle the funds with finality, i.e. credit the Participant TIPS account and debit the RTGS transit account in TIPS. This task is covered in section 4.2.2.

4.2 LIQUIDITY TRANSFERS

4.2.1 Validation of Outbound Liquidity Transfers

ID	TIPS.UR.04.010
Name	Authorisation to send outbound liquidity transfer
Requirement	TIPS shall validate that the initiator of a liquidity transfer is authorised to send an outbound liquidity transfer. In case of an authorisation error, TIPS shall reject the liquidity transfer and notify the initiator of the liquidity transfer.

TIPS shall validate the information included in the outbound liquidity transfer message. TIPS shall check the following non exhaustive list of fields:

- the technical sender;
- other information from the reference data (e.g. on the authorisation to instruct on the debited TIPS account).

TIPS notifies the initiator of the liquidity transfer with a negative receipt message (e.g. camt.025).

ID	TIPS.UR.04.020
Name	Mandatory fields for an outbound liquidity transfer
Requirement	TIPS shall validate the mandatory attributes of an outbound liquidity transfer. In case of a mandatory attributes error, TIPS shall reject the liquidity transfer and notify the initiator of the liquidity transfer.

TIPS shall validate the outbound liquidity transfer from TIPS to the RTGS based on the following non-exhaustive list of fields:

- currency;
- transferred cash amount;
- the account to debit;
- RTGS account to credit;
- Originator Participant;
- Beneficiary Participant.

TIPS shall check at least that (i) the currency is eligible for settlement in TIPS, (ii) the transferred cash amount is greater than zero, (iii) the debited TIPS account, (iv) the RTGS account to credit, (v) the Originator Participant and (vi) the Beneficiary Participant are filled in.

TIPS notifies the initiator of the liquidity transfer with a negative receipt message (e.g. camt.025).

ID	TIPS.UR.04.030
Name	Validation of an outbound liquidity transfer
Requirement	TIPS shall validate that information contained in the outbound liquidity transfer is consistent with the reference data in TIPS. In case a validation error occurs, TIPS shall reject the liquidity transfer and notify the initiator of the liquidity transfer.

TIPS shall validate the information included in the liquidity transfer. TIPS shall check the following non exhaustive list of data:

- the identifier of the debited TIPS account;
- the currency denomination of the debited TIPS account;
- the status of the debited TIPS account.

TIPS shall check at least that (i) the debited TIPS account is a valid account in TIPS (e.g. it exists and is open), (ii) it is denominated in the same currency used in the outbound liquidity transfer order and (iii) that the debited account is not blocked.

TIPS notifies the initiator of the liquidity transfer with a negative receipt message (e.g. camt.025).

ID	TIPS.UR.04.040
Name	Rejection of a liquidity transfer due to insufficient funds
Requirement	TIPS shall reject an outbound liquidity transfer whose amount would decrease the unreserved balance of the account to debit below zero and notify the initiator of the liquidity transfer.

TIPS notifies the initiator of the liquidity transfer with a negative receipt message (e.g. camt.025).

ID	TIPS.UR.04.050
Name	Rejection of outbound liquidity transfers during the RTGS closing hours
Requirement	TIPS shall reject an outbound liquidity transfer in case: <ul style="list-style-type: none"> (i) the corresponding RTGS is closed; or (ii) the processing of liquidity transfers is not allowed in the RTGS.

The RTGS sends appropriate triggers which TIPS uses to maintain the status of the corresponding RTGS (open or closed). TIPS rejects liquidity transfers in the two cases since in case (i) the RTGS does not respond to liquidity transfers at all (e.g. during maintenance windows) and in case (ii) the RTGS rejects all liquidity transfers.

TIPS notifies the initiator of the liquidity transfer with a negative receipt message (e.g. camt.025).

4.2.2 Settlement of Liquidity Transfers

ID	TIPS.UR.04.060
Name	Full amount settlement for inbound and outbound liquidity transfer
Requirement	TIPS shall always settle liquidity transfers on TIPS accounts for the full amount.

TIPS debits or credits an account for the full amount of a liquidity transfer. If the account to debit does not have sufficient funds, the liquidity transfer is rejected and not settled partially.

ID	TIPS.UR.04.070
Name	One transit account per currency
Requirement	TIPS shall make use of one transit account per currency for all the liquidity transfers from/to the corresponding RTGS.

The transit account for euro is owned by the ECB as Central Bank and it is used for the transfer of euro liquidity from/to TIPS. In case of inbound liquidity transfer, the TIPS account is credited by debiting the transit account defined in the same currency.

The RTGS transit account in TIPS is an account which mirrors the TIPS transit account in the corresponding RTGS system. RTGS transit accounts in TIPS can have only negative or zero balance.

ID	TIPS.UR.04.080
Name	Liquidity transfers between RTGS accounts and TIPS accounts
Requirement	TIPS shall ensure that a TIPS account is able to receive or send liquidity from/to any RTGS account, provided that both accounts are denominated in the same currency.

TIPS allows Participants or Instructing Parties to trigger outbound liquidity transfers to any RTGS account denominated in the same currency, not necessarily belonging to the same Participant.

4.2.3 Forwarding of Outbound Liquidity Transfers

ID	TIPS.UR.04.090
Name	Routing of an outbound liquidity transfer
Requirement	Upon successful settlement in TIPS, TIPS shall route the outbound liquidity transfer message to the corresponding RTGS.

Depending on the currency of the liquidity transfer TIPS forwards the message to the corresponding RTGS. Afterwards the RTGS moves the liquidity from its transit account to the destination RTGS account.

4.2.4 RTGS Confirmation

ID	TIPS.UR.04.100
Name	Wait for settlement confirmation from the RTGS
Requirement	TIPS shall wait until the RTGS replies with a confirmation.

Upon successful validation and routing of the outbound liquidity transfer, TIPS shall wait until a confirmation from the RTGS is received (i.e. successful or unsuccessful settlement of the liquidity transfer in the RTGS) before notifying the initiator of the liquidity transfer.

ID	TIPS.UR.04.110
Name	Alert in case of missing response from the RTGS
Requirement	TIPS shall trigger an alert if no response to an outbound liquidity transfer is received from the RTGS within a configurable timeframe.

In order to avoid liquidity traps, TIPS shall be able to raise an alert if no answer is received from the RTGS within a configurable timeframe; this timeframe is set to 15 minutes initially. The alert is notified to the TIPS operator. The alert is used as a trigger aiming at resolving the issue through operational procedures which are outside the scope of the current document.

4.2.5 Settlement Receipts

ID	TIPS.UR.04.120
Name	Successful confirmation of a liquidity transfer
Requirement	TIPS shall notify the successful transfer of funds to the initiator of a liquidity transfer upon successful settlement.

Upon successful settlement of a liquidity transfer, TIPS notifies the initiator of the liquidity transfer with a positive receipt message (e.g. using a camt.025). TIPS shall notify either (i) the relevant RTGS system in case of an inbound liquidity transfer from the RTGS to TIPS or (ii) the initiator of the liquidity transfer in case of an outbound liquidity transfer from TIPS to the RTGS.

In case of an outbound liquidity transfer, TIPS sends the positive receipt to the initiator of the liquidity transfer immediately after the RTGS positive settlement confirmation is received.

4.2.6 Automatic Reverse of Liquidity

ID	TIPS.UR.04.140
Name	Automatic reverse of an outbound liquidity transfer in case of RTGS rejection
Requirement	TIPS shall automatically reverse the outbound liquidity transfer upon receiving a negative receipt from the RTGS.

In case of settlement rejection in the RTGS, TIPS has to automatically reverse the outbound liquidity transfer by debiting the RTGS transit account in TIPS and crediting the initially debited TIPS account for the full amount settled with the original liquidity transfer message.

ID	TIPS.UR.04.150
Name	Notification to the outbound liquidity transfer initiator in case of RTGS rejection
Requirement	Upon receiving a negative confirmation from the RTGS, TIPS shall notify the initiator of the outbound liquidity transfer in TIPS with a negative receipt after the execution of the automatic reverse.

After the settlement of the automatic reverse, for an outbound liquidity transfer which has been rejected by the RTGS, TIPS shall notify the initiator of the outbound liquidity transfer (e.g. using a camt.025 message).

4.2.7 Validation of Inbound Liquidity Transfers

ID	TIPS.UR.04.160
Name	Validation of an inbound liquidity transfer
Requirement	TIPS shall validate that the information contained in the inbound liquidity transfer message is consistent with the reference data in TIPS.

TIPS shall validate the information included in the liquidity transfer message. TIPS shall check the following non exhaustive list of data:

- the identifier of the credited TIPS account;
- the currency denomination of the credited TIPS account;
- the status of the credited TIPS account.

TIPS shall check that (i) the credited TIPS account is a valid account in TIPS (e.g. it exists and is open), (ii) it is denominated in the same currency used in the incoming liquidity transfer order and (iii) the credited account is not blocked.

In case a validation error occurs, TIPS shall reject the liquidity transfer and notify the corresponding RTGS (e.g. using a camt.025).

4.2.8 Interaction with the RTGS

ID	TIPS.UR.04.200
Name	Check on pending liquidity transfers
Requirement	TIPS shall ensure that there are no liquidity transfers in status pending between TIPS and the RTGS when the snapshot of the TIPS account balances is taken. Only after all the liquidity transfers in the given currency have reached their final status, i.e. settled or rejected, the snapshot of the TIPS account balances denominated in that currency can be taken.

During the start of End-of-Day procedures in the RTGS liquidity transfers between TIPS and the RTGS (or vice versa) could still have not reached the final status in both systems. In order to avoid double counting or loss of liquidity in the calculation of the snapshot for the End-of-Day balances, TIPS waits until all the liquidity transfers have reached their final status (i.e. settled or rejected).

This implies that for outbound liquidity transfers settled in TIPS, TIPS shall wait until either a positive or negative receipt is received from the RTGS. In case of a negative receipt, TIPS shall make sure that the automatic reverse of the outbound liquidity is settled before taking the snapshot of the account balance.

In case of inbound liquidity transfers settled in the RTGS, TIPS shall wait until settlement occurs in TIPS and either a positive or negative receipt is sent back to the RTGS.

5 MANAGEMENT OF ACCOUNTS AND REFERENCE DATA

This chapter covers TIPS actors, the structure of TIPS accounts and an additional functionality called Credit Memorandum Balance (CMB), which can be utilised for managing limits. This chapter covers also other reference data requirements for the configuration and operation of the service.

5.1 OVERVIEW

The TIPS service differentiates between different actors which play different roles and have different access rights. These actors are Central Banks, Participants, Reachable Parties, Instructing Parties (which can act on behalf of Participants and Reachable Parties), RTGS Systems and the TIPS Operator. Furthermore two different objects which are addressable by payment transactions are covered as well: TIPS accounts which contain the actual liquidity and Credit Memorandum Balances (CMBs), which provide limits linked to an account.

Participants are entities which have a BIC and own accounts and CMBs linked to their accounts. These accounts cannot have a negative balance. Participants are responsible for the configuration of CMBs linked to their accounts.

Reachable Parties are entities which have a BIC but do not own accounts and have to rely on a Participant to allow them to use an account or CMB. Reachable Parties can interact with TIPS directly and send, e.g. payment transactions if they assume the role of an Instructing Party. However, responsibility remains with the Participant who owns the account or CMB which is used by the Reachable Party.

Payment transactions contain BICs of Participants or Reachable Parties in the fields AT-06 and AT-23 of the dataset DS-02. From these BICs TIPS determines the accounts which are debited or credited respectively the CMBs whose headroom is decreased or increased.

Instructing Parties are entities acting on behalf of Participants or Reachable Parties and communicate with TIPS directly. Participants and Reachable Parties can act as Instructing Parties and impersonate them. Participants are able to restrict the capabilities of Instructing Parties which act on behalf of the Participant or a Reachable Party. Responsibility for all actions done by Instructing Parties remains with the Participant.

Central Banks maintain all reference data associated with an entity of their national community and are responsible for, e.g. the setup and maintenance of a Participant and its accounts. Reachable Parties and Instructing Parties are considered to be reference data of the responsible Participant. Central Banks can act as Participants and own accounts which they can use for their instant payment business.

Like in T2S the service desk model applicable to TIPS is:

- (i) A single, central point of contact for any kind of operational and technical issue concerning the TIPS service. This central point of contact is in charge of providing direct support to Central Banks and Participants for managing the technical connection, also during non-standard service hours.
- (ii) Central Banks provide support to their national community with the responsibility for reference data setup and liquidity management within standard service hours.

RTGS Systems are technical actors which TIPS uses to allow an RTGS system to access all accounts held in its currency. The RTGS system for euro is TARGET2.

The **TIPS Operator** is the legal and organisational entity that operates the TIPS service.

In general, Participants or Central Banks (acting as Participants) own **accounts**, which TIPS debits and credits during processing of instant payment transactions or liquidity transfers from/to an RTGS system. These accounts cannot have a negative balance. The TIPS service foresees notifications in case a predefined floor/ceiling amount on an account/CMB is undercut/exceeded.

A **Credit Memorandum Balance (CMB)** provides a limit linked to one account. This is a way of managing customer credit lines outside TIPS and using the resulting limits in TIPS. CMBs have identifiers similar to TIPS accounts; payment transactions can address CMBs via the contained BICs. Whenever a payment transaction addresses a CMB instead of an account TIPS adjusts the available headroom (i.e. the limit minus the limit utilisation) of the CMB in addition to the balance of the underlying account. If the originator and beneficiary sides use a CMB TIPS decreases the headroom on the originator side and debits the linked account. On the beneficiary side TIPS increases the headroom and credits the linked account.

The **BICs** of the Originator Participant or Reachable Party and Beneficiary Participant or Reachable Party within the payment transaction message are each linked to exactly one TIPS account or CMB per currency. Payment transactions are, therefore, addressing accounts or CMBs via the contained BICs. Whenever a CMB is addressed the underlying account is determined automatically from the reference data. Since TIPS has to be able to uniquely determine the account or CMB from the provided BICs one BIC can only be linked to one account or CMB in the same currency at the same time. One account, however, can be linked to multiple different BICs, which are then all set up as users of the account. One CMB can only be linked to exactly one BIC.

Furthermore TIPS links each Participant or Reachable Party to multiple **distinguished names** of Instructing Parties in order to (i) decide if an authorised entity sent a payment transaction (or recall) and (ii) determine the receiver of the forwarded payment transaction. Each Participant or Reachable Party can be linked to multiple Instructing Parties on the originator side but only one Instructing Party on the beneficiary side (in order to allow TIPS to uniquely identify the communication partner).

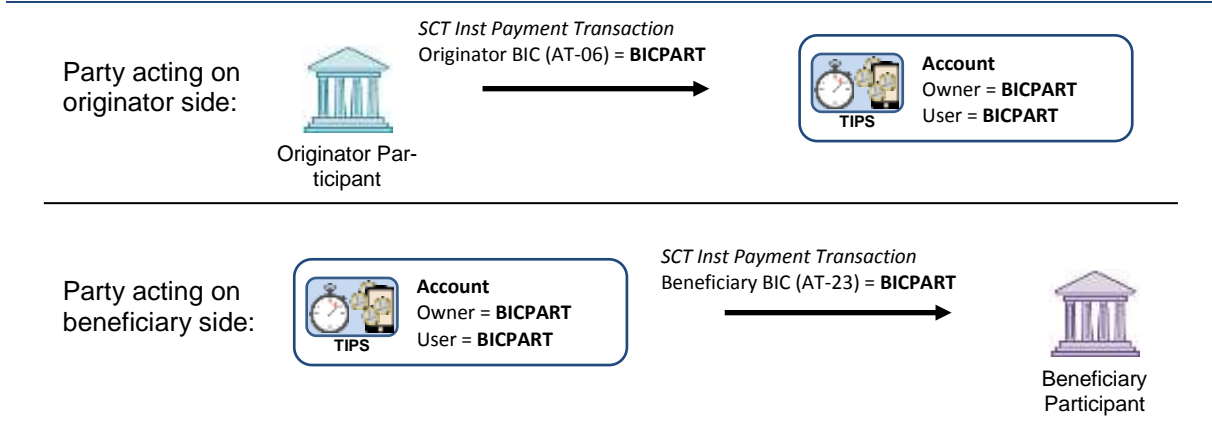
For the management of **reference data** TIPS envisages two different approaches:

- (i) Reference data which is kept in a central common reference data module and applied once per business day, e.g. new accounts (effect timeframe: on the next RTGS business day).
- (ii) Reference data which has to be effective immediately, e.g. account blockings due to insolvency.

The **examples for business cases** following below visualise some potential account structures which can be realised with the provided functionality.

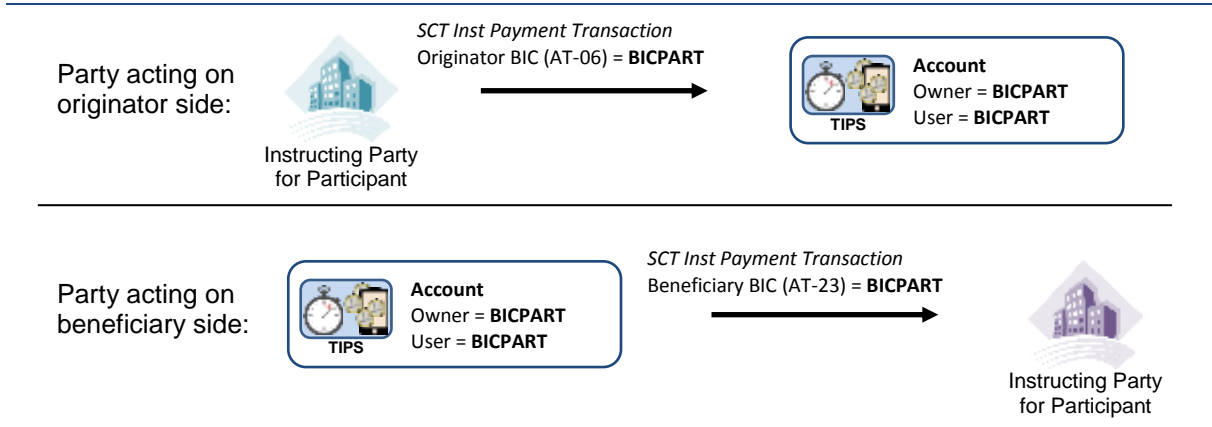
Case 1: One Participant owns one TIPS account and sends payment transactions debiting this account directly to TIPS; furthermore the same Participant handles all requests for Beneficiary Participant replies crediting the same account. In that case the allowed sender (i.e. Instructing Party) of payment transactions and Beneficiary Participant replies is the Participant itself. The Participant's BIC (BICPART) is configured as one user of that account. See Figure 8 below.

Figure 8
Case 1 – Single Participant



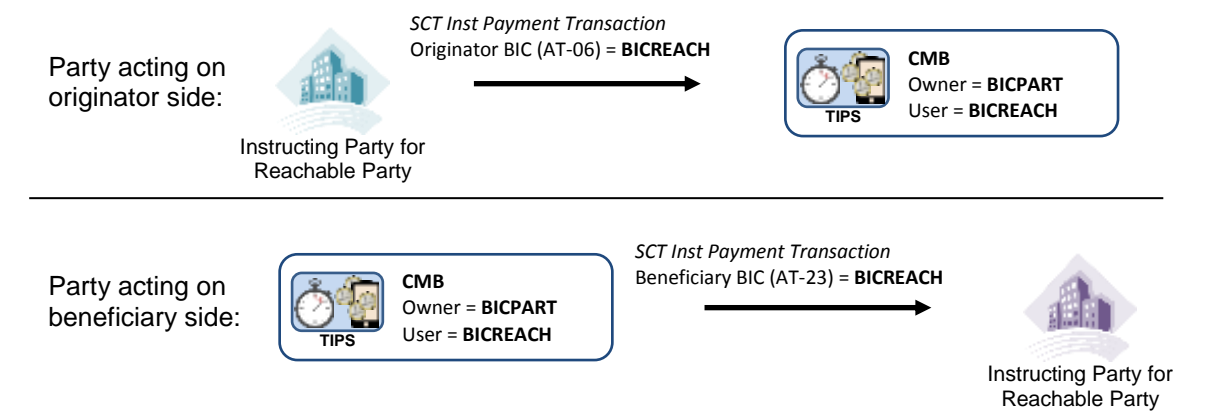
Case 2: One Participant (BICPART) owns one TIPS account and authorises an Instructing Party to send payment transactions and Beneficiary Participant replies on behalf of the Participant (i.e. the same Instructing Party handles both sides of the communication). In that case the allowed sender of payment transactions and Beneficiary Participant replies is the Instructing Party; the Participant’s BIC is configured as one user of that account. Authorisation to send payment transactions (the field AT-06 of DS-02 according to SCT Inst contains the Participant’s BIC) is checked by retrieving from the reference data the list of whitelisted senders (i.e. the Instructing Party; could be more than one) for the given account user BIC (i.e. the Originator Participant’s). In case TIPS expects a Beneficiary Participant reply (i.e. TIPS processes a payment transaction which contains the Participant’s BIC in field AT-23 of DS-02 according to SCT Inst) TIPS looks up the Instructing Party (i.e. the recipient) again in the reference data by means of the relevant account user BIC (i.e. the Beneficiary Participant’s). See Figure 9 below.

Figure 9
Case 2 – Single Participant with Instructing Party



Case 3: One Participant (BICPART) owns one TIPS account and one CMB; the user of the CMB is a Reachable Party (BICREACH) (i.e. the Participant provides liquidity to the Reachable Party). An Instructing Party acts on behalf of the Reachable Party and sends payment transactions and Beneficiary Participant replies (this Instructing Party could be the Reachable Party itself). The Instructing Party handles both sides of the communication. This situation is identical to case 2 with the Reachable Party’s BIC instead of the Participant’s BIC. See Figure 10 below.

Figure 10
Case 3 – Reachable Party with Instructing Party



5.2 ACTORS

ID	TIPS.UR.05.010
Name	Central Bank actors
Requirement	<p>TIPS shall enable and allow <i>Central Bank</i> actors to:</p> <ul style="list-style-type: none"> act as Participants and Instructing Parties; act on behalf of Participants from their national community; own transit accounts; transfer liquidity from TIPS accounts in their books to RTGS system accounts; manage all Participant's reference data of their national community and all accounts in their books; restrict the capabilities of Participants from their national community via access rights.

Accounts of Participants of a Central Bank's national community are the accounts held in the Central Bank's books. Reachable Parties of a Participant and their Instructing Parties are considered to be part of the Participant's reference data (and are therefore configured by the responsible Central Bank).

A Central Bank can also be defined as a Participant in the reference data, so that it can own TIPS accounts and operate in TIPS as any other Participant (and Instructing Party).

Currently only one single transit account for euro is foreseen, which is owned by the ECB (see TIPS.UR.04.070).

ID	TIPS.UR.05.020
Name	Participant actors
Requirement	<p>TIPS shall enable and allow <i>Participant</i> actors to:</p> <ul style="list-style-type: none"> • act as Instructing Parties; • own TIPS accounts and CMBs linked to their accounts; • transfer liquidity from their TIPS accounts to RTGS system accounts; • send payment transactions, Beneficiary Participant replies, recalls, recall answers and status inquiries for accounts or CMBs for which they are set as users. • manage CMBs linked to their own accounts; • manage linkages between their Reachable Parties, Instructing Parties and accounts/CMBs; • restrict the capabilities of Instructing Parties acting on their behalf via access rights.

The management of linkages encompasses the creation, update and deletion of links between Reachable Parties and accounts/CMBs of the Participant as well as links between Reachable Parties and their Instructing Parties (the Reachable Parties and Instructing Parties themselves are considered to be reference data of the Participant and are therefore set up by the Central Bank configuring the Participant itself; the Participant has access to its parties only). Participants are responsible for all actions performed on accounts or CMBs owned by them.

ID	TIPS.UR.05.030
Name	Reachable Party actors
Requirement	TIPS shall know about <i>Reachable Parties</i> , which use the accounts or CMBs of Participants for the settlement of instant payments.

Reachable Parties do not perform any actions on their own within TIPS; they are just set up as an entity which has a BIC that can be used in an instant payment transaction, as long as there is an Instructing Party configured which handles all communication on behalf of the Reachable Party. A Reachable Party could assume the role of an Instructing Party and send SCT Inst scheme compliant messages to TIPS directly; however, the Participant owning the account/CMB is still responsible for all actions done by the Reachable Party acting as Instructing Party.

ID	TIPS.UR.05.040
Name	Instructing Party actors
Requirement	TIPS shall know about <i>Instructing Parties</i> , which can act on behalf of Participants or Reachable Parties.

Instructing Parties acting on behalf of Participants have the same capabilities as these Participants themselves, unless restricted by access rights (they should not have the capability to change these access rights). Instructing Parties handling communication for Reachable Parties have the capability to send SCT Inst scheme messages directly to TIPS (and answer to them). However, the Participant owning the account/CMB is still responsible for all actions done by the Instructing Party.

ID	TIPS.UR.05.041
Name	RTGS System actors
Requirement	<p>TIPS shall enable and allow <i>RTGS System</i> actors to:</p> <ul style="list-style-type: none"> • access all data related to all accounts denominated in the RTGS system's currency; • transfer liquidity from all TIPS accounts denominated in the RTGS system's currency to the RTGS system.

The RTGS System actor is a technical entity which is assigned to one RTGS system per currency (TARGET2 for euro). It could be used for, e.g. allowing the RTGS system to query account balances in order to display them within their own GUI.

ID	TIPS.UR.05.042
Name	TIPS Operator actor
Requirement	TIPS shall provide a <i>TIPS Operator</i> actor which has unrestricted access to all system data and functionality.

The TIPS Operator is the legal and organisational entity that operates the TIPS service. It is, e.g. responsible for the setup of transit accounts or configuration of system parameters such as timeout thresholds.

The following Table 10 summarises some of the characteristics and capabilities of the different actors (unless restricted by access rights) regarding the following items:

- What does the entity own?
- Where can it transfer liquidity from?
- Which accounts or CMBs can be used for instant payments (including inquiries)?
- Which management actions can be executed?

Table 10: TIPS participation structure overview

Actor	Owns	Can transfer liquidity	Can send SCT Inst scheme messages for	Management actions
Central Bank ⁹	Accounts in their book	From accounts in their book	-	<ul style="list-style-type: none"> Act on behalf of their Participants Manage¹⁰ Participant's reference data within their national community and accounts in their books and CMBs linked with these accounts Restrict Participant's access rights
Participant	Accounts and CMBs	From own accounts	Accounts and CMBs for which their BIC is set as user	<ul style="list-style-type: none"> Manage CMBs linked to own accounts Manage links between BICs set as users of their accounts or CMBs and Instructing Parties Restrict access rights of Instructing Parties acting on behalf of the Participant or on behalf of Reachable Parties using the Participant's accounts/CMBs
Reachable Party	-	-	-	-
Instructing party acting on behalf of a Participant ¹¹	-	From Participant's accounts	Accounts and CMBs for which their Participant's BIC is set as user	All Participant's actions unless restricted via access rights
Instructing party acting on behalf of a Reachable Party ¹¹	-	-	Accounts and CMBs for which their Reachable Party's BIC is set as user	-

⁹ A Central Bank in their role as Central Bank; they could also act as a Participant.

¹⁰ Management of accounts or CMBs encompasses creation, update and deletion. Update refers to changes done to any reference data field on the account or CMB level.

¹¹ Actions performed by Instructing Parties on behalf of Participants or Reachable Parties require suitable access rights granted by the Participant who owns the accounts and CMBs .

ID	TIPS.UR.05.060
Name	Instant payments for Participants
Requirement	TIPS shall support the settlement of instant payment transactions for Originators or Beneficiaries who maintain accounts with a Participant.

The TIPS service supports instant payments business done by Participants.

ID	TIPS.UR.05.070
Name	Instant payments for Reachable Parties
Requirement	TIPS shall support the settlement of instant payment transactions for Originators or Beneficiaries who maintain accounts with a Reachable Party.

The TIPS service supports instant payments business done by Reachable Parties, provided that they ensure connectivity with TIPS via a Participant or an Instructing Party. In both cases responsibility regarding all actions done on the accounts or CMBs of the Participant remains with the Participant.

5.3 ACCOUNT STRUCTURE

5.3.1 Accounts

ID	TIPS.UR.05.080
Name	Account types
Requirement	TIPS shall provide cash accounts which are used for the settlement of instant payments and liquidity transfers. There shall be two different account types: <ul style="list-style-type: none"> • <i>transit accounts</i>: One technical account per currency used solely for the technical provision of liquidity transfers from/to an RTGS and to/from TIPS; • <i>accounts</i> (also called <i>TIPS/Participant accounts</i>): Participant accounts (which cannot have a negative balance).

Participant or Central Banks acting as Participants own TIPS account. Multiple entities (i.e. Participants and Reachable Parties) can use an account as long as a link between their BIC and the account is established.

ID	TIPS.UR.05.090
Name	TIPS account identifiers
Requirement	TIPS account identifiers shall be ISO compliant and globally unique.

Participants are able to choose their account identifiers in compliance with restrictions to be defined in the UDFS (e.g. 34 characters long and composed of a country code and 32 characters).

ID	TIPS.UR.05.100
Name	Account level reference data
Requirement	<p>TIPS shall maintain at least the following data for an account:</p> <ul style="list-style-type: none"> • <i>Type</i>: Transit account or Participant account. • <i>Identifier</i>: The ISO compliant account identifier. • <i>Currency</i>: The account's currency, which is an eligible TIPS settlement currency. • <i>Owner</i>: The Participant or Central Bank who owns the account. • <i>Users</i>: A list of BICs of entities (Participants and Reachable Parties) which are allowed to use that account for instant payments (on the originator and beneficiary side). • <i>Opening date</i>: The date as of which a TIPS account is legally opened. • <i>Closing date</i>: The date as of which a TIPS account is legally closed. • <i>Status</i>: Current blocking status of the account; TIPS differentiates between unblocked, blocked for debiting, blocked for crediting or both. • <i>Floor</i>: A lower threshold amount which triggers the sending of a notification message if it is undercut from above. Used for receiving warnings if the accounts is running low. • <i>Ceiling</i>: An upper threshold amount which triggers the sending of a notification message if it is exceeded from below. Used for receiving warnings if the account traps too much liquidity; • <i>Credit notification</i>: A flag which indicates whether the owner of the account wishes to be informed in case a liquidity transfer is settled which credits this account.

Different account types might use different account characteristics; the ISO message for the envisaged optional credit notification will be specified in the UDFS (it could be a camt.054). Multiple BICs can be linked to one account as users, allowing a configuration where different entities use funds on the same account for their instant payments business.

ID	TIPS.UR.05.110
Name	Number of TIPS accounts per Participant
Requirement	Each TIPS Participant shall be able to own one or many TIPS accounts.

A TIPS Participant can hold one or more TIPS accounts in order to segregate its business.

ID	TIPS.UR.05.111
Name	Account removal after closing date (A)
Requirement	TIPS shall close and remove accounts after the end of day of their closing date if their account balance is zero.

TIPS accounts can be removed from the system if (i) their balance is zero and (ii) their closing business day ended. If the account balance is not zero the account cannot be removed (see TIPS.UR.05.112) but is blocked until the remaining funds are repatriated.

ID	TIPS.UR.05.112
Name	Account removal after closing date (B)
Requirement	TIPS shall close and block but not remove accounts at the end of day of their closing date if their account balance is not zero.

If an account passes its closing date but still holds funds this account cannot be deleted immediately but has to be blocked until the responsible Central Bank repatriates the funds. TIPS can delete the account if its balance is zero. Closed accounts with a non-zero balance are taken into account for the general ledger but are not accessible by the Participant anymore.

5.3.2 Credit Memorandum Balance

ID	TIPS.UR.05.120
Name	Credit Memorandum Balance functionality
Requirement	TIPS shall allow the definition of limits for settlement of instant payments using Credit Memorandum Balances (CMBs).

TIPS differentiates between accounts where settlement takes place and CMBs, which are credit limits that are linked to underlying accounts. Both objects can be linked with user BICs, i.e. from the BIC (and currency) given in a particular payment transaction TIPS can uniquely determine either an account or CMB to be used for this transaction on the originator and beneficiary side (the transaction “addresses” the account or CMB). These credit limits provide Participants with a flexible tool for limit management and monitoring regarding access to the funds on the underlying account.

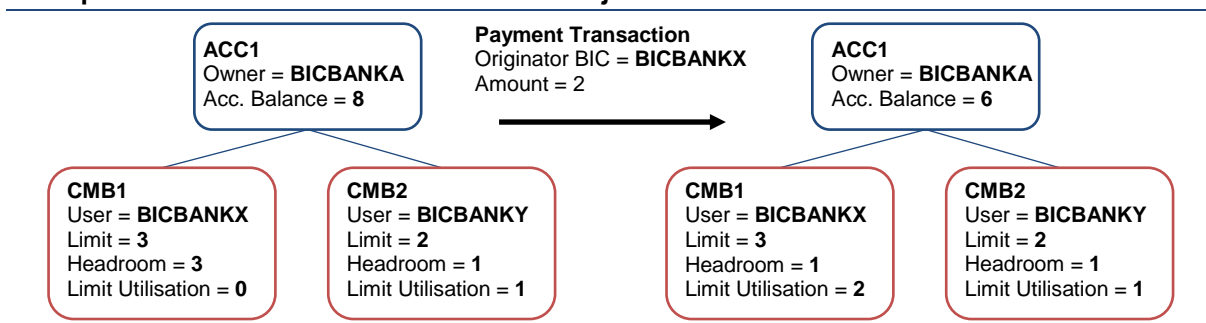
ID	TIPS.UR.05.121
Name	Credit Memorandum Balance processing
Requirement	TIPS shall track the utilisation and remaining headroom of CMB limits in case payment transactions or recalls are addressing CMBs. In case a payment transaction addresses a CMB on the originator side the CMB headroom shall be decreased by the transaction amount (the utilisation shall be increased). In case a payment transaction addresses a CMB on the beneficiary side the CMB headroom shall be increased (the limit utilisation decreased).

The limit of a CMB is reference data and adjustable by the Participant who owns the account underlying the CMB. The headroom specifies the current cash amount available to the user of the CMB for settlement of instant payment transactions. The sum of limit utilisation (U) and headroom (H) equals the CMB limit (L) at all times, $U+H=L$. The limit L is always greater or equal zero; in case payments are received via a CMB the headroom could grow larger than the actual limit, which results in a negative limit utilisation (which just translates to a payment capacity higher than the originally envisaged limit due to received payments).

In order to give an explicit example for the behaviour of CMB limit utilisation and headroom: Suppose the Participant BICBANKA owns the TIPS account ACC1 with a balance of 8 as well as the CMBs CMB1 and CMB2 with initial limits of 3 and 2 respectively, linked to the account ACC1. Furthermore BICBANKA provides instant payment capacity to the Reachable Parties BICBANKX (via CMB1) and BICBANKY (via CMB2). Suppose further that TIPS receives an instant payment transaction from

BICBANKX (addressing CMB1) with an amount of 2. The two business level checks that TIPS performs prior settlement are then: (i) Is the available headroom on the addressed CMB greater or equal to the transaction amount (i.e. $2 \leq 3$) and (ii) is the current balance of the underlying account greater or equal to the transaction amount (i.e. $2 \leq 8$). If the transaction passes this validation TIPS can settle on account ACC1 and decrease the headroom of CMB1 to $3-2=1$ and simultaneously reduce the cash balance of ACC1 to $8-2=6$. CMB2 is not adjusted at all (see Figure 11 below).

Figure 11
Example for CMB headroom/limit utilisation adjustment



ID	TIPS.UR.05.130
Name	Addressing of CMBs
Requirement	TIPS shall allow Participants or Instructing Parties to directly address CMBs instead of accounts using messages.

TIPS determines the accounts used for debiting and crediting from the Originator and Beneficiary Participant's or Reachable Party's BICs. The same approach applies also for recall processing. TIPS allows the same addressing for CMBs as well, i.e. from the Participant's or Instructing Party's point of view there is no difference between addressing an account or CMB.

ID	TIPS.UR.05.140
Name	Number of CMBs per account
Requirement	Each TIPS account shall be able to be linked to more than one CMB.

The relation between a TIPS account and the CMBs is a zero-to-many relation, i.e. each TIPS account can be linked to none or multiple CMBs. Each CMB, however, is linked to exactly one TIPS account, in order to allow TIPS to uniquely determine the account to debit or credit from the addressed CMB.

ID	TIPS.UR.05.150
Name	CMB limits
Requirement	TIPS should allow Participants to set limits greater or equal to zero on their CMBs.

The sum of limits configured via CMBs for a particular account does not need to coincide with the currently available cash on this account. This allows Participants to dedicate less liquidity to their accounts than the sum of all limits would imply. However, if the linked account does not provide sufficient liquidity TIPS rejects the payment transaction.

In the previous example (see diagram above), a Participant owns the TIPS account ACC1 as well as CMB2 and CMB3, linked to the account ACC1. The sum of the limits of CMB2 and CMB3 could be greater than the amount of cash available on account ACC1.

ID	TIPS.UR.05.160
Name	CMB identifiers
Requirement	CMB identifiers shall be ISO-like, unique and not coincide with account identifiers.

Participants are able to choose their CMB identifiers in compliance with restrictions to be defined in the UDFS (e.g. 34 characters long and composed of a country code and 32 characters). By addressing a CMB via its identifier the linked TIPS account is automatically addressed as well.

ID	TIPS.UR.05.170
Name	CMB level reference data
Requirement	<p>TIPS shall maintain at least the following data for a CMB:</p> <ul style="list-style-type: none"> • <i>Identifier</i>: The ISO compliant CMB identifier. • <i>Linked Account</i>: The account to which the CMB is linked to. • <i>User</i>: A BIC of an entity (Participant or Reachable Party) which is allowed to use that CMB for instant payments (on the originator and beneficiary side). • <i>Opening date</i>: The date as of which a CMB is legally opened. • <i>Closing date</i>: The date as of which a CMB is legally closed. • <i>Status</i>: Current blocking status of the CMB; TIPS differentiates between unblocked, blocked for decreases, blocked for increases or both. • <i>Floor</i>: A lower threshold amount which triggers the sending of a notification message if it is undercut from above. Used for receiving warnings if the CMB is running low. • <i>Ceiling</i>: An upper threshold amount which triggers the sending of a notification message if it is exceeded from below; • <i>Limit</i>: The payment capacity amount provided by the CMB.

The currency and the owner of a CMB are derived from the linked account; the status could be inherited from the linked account. Only one BIC is linked with a CMB as user. The limit of a CMB equals utilised limit plus headroom.

5.4 REFERENCE DATA

5.4.1 General Requirements

ID	TIPS.UR.05.180
Name	Account management actions
Requirement	TIPS shall provide functionalities to create update or delete accounts and CMBs according to the actors' permissions as given in section 5.2.

Used reference data for an account or CMB can be found in the relevant requirements in section 5.3.

Not all the reference data changes are in effect immediately. Some data like, e.g. new accounts, have to be created prior their opening date. However, other changes, e.g. account blockings, have to be effective immediately.

5.4.2 Account/CMB Creation, Update and Deletion

ID	TIPS.UR.05.190
Name	Account/CMB creation action
Requirement	TIPS shall allow an actor with suitable permissions to create accounts or CMBs and set up their reference data.

This requirement refers to regular Participant accounts and CMBs; transit accounts are set up by the TIPS operator. Central Banks can create accounts for their Participants; Participants can create CMBs linked to their accounts. In contingency situations Central Banks can support their Participants by creating CMBs on the Participant's behalf.

ID	TIPS.UR.05.191
Name	Account/CMB update action
Requirement	TIPS shall allow an actor with suitable permissions to update the reference data of accounts and CMBs.

Details regarding the updateable reference data will be specified in the UDFS.

ID	TIPS.UR.05.200
Name	Account/CMB deletion action
Requirement	TIPS shall allow an actor with suitable permissions to delete accounts and CMBs; an account shall be erasable as long as its balance is zero and after its closing date has been reached.

This requirement refers to regular Participant accounts. In order to ensure that accounts/CMBs to be deleted cannot be used anymore they should be blocked for crediting/increases and debiting/decreases prior deletion.

ID	TIPS.UR.05.210
Name	Account/CMB creation/update/deletion effect timeframe
Requirement	TIPS shall ensure that newly created accounts or CMBs are available on their opening date. Account or CMB updates and deletions shall be effective on the next RTGS business day.

These reference data updates are effective, i.e. usable from a business point of view, on the next RTGS business day; additional reference data changes, which are described in the following subsections, might be effective after a shorter timeframe (e.g. immediately).

5.4.3 Account/CMB and Participant Blocking and Unblocking

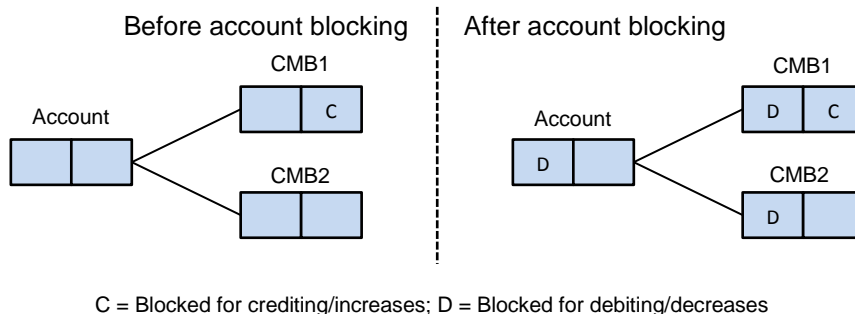
ID	TIPS.UR.05.220
Name	Account blocking action
Requirement	TIPS shall allow Central Banks to block an account for debiting or crediting (separately) or both. This blocking shall apply down to all linked CMBs and prevents their headroom from being decreased (blocked for debiting) and/or increased (blocked for crediting). This shall be applied to CMBs which have been created after the blocking was in effect as well. The account blocking shall override but not overwrite the CMB blocking states.

Blocking of an account for debiting, crediting (can be chosen separately) or both entails blocking of the same kind (i.e. decreases, increases or both) of the headroom of all linked CMBs (even those created after the account blocking is in effect). Blocking ensures that an account cannot be debited and/or credited. Central Banks can override this blocking in, e.g. contingency¹² situations or prior closing of an account.

However, the individual blocking states of the CMBs should not be overwritten in order to preserve their status. E.g. account blocking for debiting results in blocking of all CMBs headroom for decreases; if some CMB is already blocked for headroom increases this CMB is, effectively, blocked for both, decreases and increases (see CMB1 in Figure 12 below).

Reserved amounts on an account blocked for debiting can still be settled, since the blocking check has already been performed at this stage.

Figure 12
Example for Account/CMB blocking



¹² Potential contingency scenarios are, e.g. insolvency of a Participant and subsequent repatriation of funds.

ID	TIPS.UR.05.230
Name	Account unblocking action
Requirement	TIPS shall allow Central Banks to unblock an account which has been previously blocked (separately for debiting and crediting). This unblocking shall be applied down to all linked CMBs and revert their blocking status to whatever was in effect prior to the account blocking.

Unblocking of an account restores the linked CMB blocking states which were in effect prior account blocking. E.g. a CMB which was blocked for crediting prior blocking the underlying account for debiting is still blocked for crediting after the account has been unblocked.

ID	TIPS.UR.05.240
Name	CMB blocking action
Requirement	TIPS shall allow a Participant to block its CMBs for headroom decreases or increases (separately) or both.

The CMB can be blocked for being decreased (linked account would be debited) or increased (linked account would be credited) separately.

ID	TIPS.UR.05.250
Name	CMB unblocking action
Requirement	TIPS shall allow a Participant to unblock its CMBs which have been previously blocked (separately for headroom decreases or increases).

Unblocking of a CMB restores the CMB blocking state which was in effect prior blocking of the CMB; it is then again available for headroom decreases or increases or both.

ID	TIPS.UR.05.260
Name	Participant blocking action
Requirement	TIPS shall allow a Central Bank to block a TIPS Participant of its national community for crediting, debiting or both. This Participant blocking shall result in blocking of all accounts and CMBs owned by that Participant. The Participant blocking shall override but not overwrite the account blocking states.

Central Banks are allowed to block Participants of their national community in case of, e.g. insolvency. Similar to the account blocking which does not overwrite the CMB blocking states Participant blocking does not overwrite the account blocking state in order to restore them if the blocking is undone. Currently only Participant blocking is foreseen; there is no similar functionality for Reachable Parties since those can be linked with only one single account or CMB, which could be blocked individually.

ID	TIPS.UR.05.270
Name	Participant unblocking action
Requirement	TIPS shall allow a Central Bank to unblock a TIPS Participant of its national community for crediting, debiting or both. This unblocking shall restore the account blocking states to whatever they were prior to the Participant blocking.

Unblocking of a Participant restores the account blocking states which were in effect prior blocking of the Participant. E.g. an account which was blocked for crediting prior blocking the Participant for debiting is still blocked for crediting after the Participant has been unblocked.

ID	TIPS.UR.05.280
Name	Account/CMB blocking/unblocking effect timeframe
Requirement	TIPS shall ensure that account/CMB blocking and unblocking are in effect immediately; this shall encompass account blocking due to participant blocking.

Blocking and unblocking of Participants, accounts or CMBs should be effective immediately for, e.g. insolvency. It does not matter how the blocking is triggered (i.e. by blocking a Participant, account or CMB directly).

ID	TIPS.UR.05.290
Name	Liquidity transfers for blocked accounts
Requirement	TIPS shall allow Central Banks to transfer liquidity from/to any account in their books to/from the RTGS, regardless of the account's blocking status.

After an insolvency or closing of an account Central Banks should be able to transfer liquidity from/to blocked TIPS accounts in their books to/from the RTGS.

5.4.4 CMB Limits

ID	TIPS.UR.05.330
Name	CMB limit change action
Requirement	TIPS shall allow an actor with suitable permissions to change the limit of a CMB. This limit change shall increase the headroom by the difference between the new limit and the old limit.

CMB limit changes can be done by Participants owning the underlying account or Instructing Parties (given they have sufficient permissions). Change of a CMB limit results in a change of the headroom (from H_{old} to H_{new}) by the difference between the new (L_{new}) and old limit (L_{old}): $H_{new} = H_{old} + (L_{new} - L_{old})$. In case $L_{new} > L_{old}$ the headroom is increased; in case $L_{new} < L_{old}$ the headroom is decreased. Due to a CMB limit decrease the headroom could become negative (if $L_{old} < L_{new}$), which is similar to blocking of a CMB for headroom decreases (payment transactions are then rejected).

ID	TIPS.UR.05.340
Name	CMB limit change effect timeframe
Requirement	TIPS shall ensure that changes done to CMB limits are in effect immediately.

Changes done to CMBs should be taken into account immediately.

5.4.5 Entity Identifiers and Routing Table

ID	TIPS.UR.05.350
Name	Distinguished names
Requirement	TIPS shall allow Participants and Instructing Parties to use multiple distinguished names to communicate with the service.

Each entity bound to a digital certificate is assigned a unique distinguished name (DN). This applies both to individuals and applications. Each Instructing Party (and therefore also each Participant and Reachable Party acting as Instructing Party) may use multiple DNs to send payment transactions (and liquidity transfers) to TIPS.

ID	TIPS.UR.05.360
Name	Eleven digit BIC
Requirement	TIPS shall use an eleven digit BIC (BIC11) whenever a BIC is required as identifying characteristic. If a BIC8 is used in a SCT Inst scheme message it shall be treated as an eleven digit BIC with "XXX" appended.

TIPS should use eleven digit BIC codes in order to, e.g. identify account/CMBs to be used or identify distinguished names of allowed Instructing Parties.

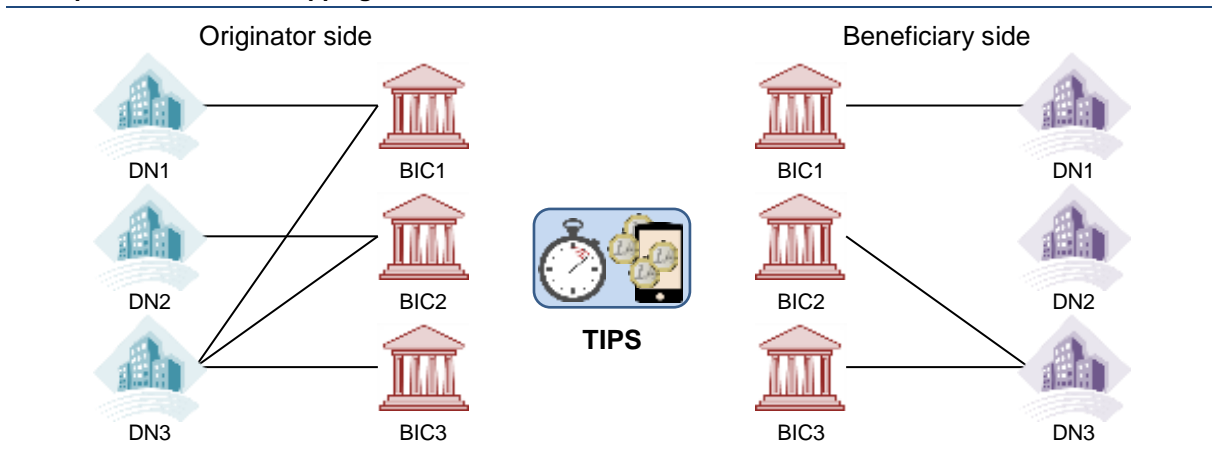
ID	TIPS.UR.05.370
Name	Distinguished name to BIC routing table change action
Requirement	TIPS shall allow an actor with suitable permissions to create links between a Participant or Reachable Party's BICs and a distinguished name for whitelisting and routing purposes. Two cases are to be differentiated: <ul style="list-style-type: none"> Inbound messages: TIPS shall allow a many to many relation between sender distinguished names and Originator Participant or Reachable Party BICs. Outbound messages: TIPS shall ensure that there is a many to one relation between Beneficiary Participant or Reachable Party BICs and receiver distinguished names.

TIPS uses the routing table for checking whether a particular sender is authorised to send, e.g. payment transactions for the Originator Participant or Reachable Party BIC (field AT-06 in DS-02 of the payment transaction). Furthermore TIPS uses it for, e.g. looking up the correct receiver on the beneficiary side of the forwarded payment transaction, determined from the Beneficiary Participant or Reachable Party BIC (field AT-23 in DS-02).

Entities which are labelled as DNx in the example in Figure 13 below could be:

- the Participants themselves if they are instructing on their own;
- reachable parties if they are also acting as Instructing Parties;
- purely Instructing Parties (on the originator and beneficiary side, even if in the latter case they do not instruct but rather reply with a Beneficiary Participant reply message).

Figure 13
Example for DN to BIC mapping



ID	TIPS.UR.05.380
Name	Routing table change effect timeframe
Requirement	TIPS shall ensure that changes done to the routing table are in effect on the next RTGS business day.

Routing table changes should be effective on the next business day.

ID	TIPS.UR.05.381
Name	Uniqueness of user BIC
Requirement	TIPS shall ensure that each BIC configured in the system is set up as a user of either one TIPS account or one CMB per currency.

TIPS has to be able to uniquely identify the account or CMB to be used from the BICs and currency's provided in the payment transaction message.

5.4.6 System Settings

ID	TIPS.UR.05.390
Name	System settings change actions
Requirement	<p>TIPS shall provide functionalities for the creation, update and deletion of system settings. Included system settings shall be (non-exhaustive list):</p> <ul style="list-style-type: none"> • configurable parameters explicitly mentioned in user requirements: <ul style="list-style-type: none"> ○ duplicate transaction detection timeframe (TIPS.UR.03.090); ○ SCT Inst timestamp timeouts (TIPS.UR.03.120, TIPS.UR.03.210); ○ transaction amount (TIPS.UR.03.133 and TIPS.UR.03.721); ○ data retention period for status inquiry (TIPS.UR.03.930); ○ RTGS alert (TIPS.UR.04.110). • the transit account for each currency.

These system settings changes are expected to occur on very rare occasions.

ID	TIPS.UR.05.400
Name	System settings change effect timeframe
Requirement	TIPS shall ensure that changes done to system settings are in effect on the next RTGS business day.

System setting changes should be in effect during the next business day.

ID	TIPS.UR.05.401
Name	Maintenance of the RTGS status for liquidity management
Requirement	TIPS shall maintain the opening and closing status of each connected RTGS.

TIPS uses the information on the RTGS status to reject outbound liquidity transfers when the RTGS is not available. On the basis of the triggers sent by the RTGS (e.g. via a camt.019 message), TIPS updates the opening/closing status of the corresponding RTGS.

Possible events of the operating day of the RTGS which require a status change are:

- start of the RTGS Maintenance Window (e.g. status change to closed);
- end of the RTGS Maintenance Window (e.g. status changed to open);
- start of RTGS End-of-Day Processing (e.g. status changed to closed);
- start of RTGS Night-Time phase (e.g. status changed to open).

A different status for liquidity management has to be maintained for each RTGS connected to TIPS.

5.4.7 ISO Compliance

ID	TIPS.UR.05.410
Name	Currency codes
Requirement	TIPS shall store currencies as defined by the ISO standard.

Currencies are, e.g. used as a parameter of accounts, which have to match on the originator and beneficiary side.

ID	TIPS.UR.05.420
Name	Timestamps
Requirement	TIPS shall use timestamp formats compliant with ISO for reporting and querying.

TIPS shall use a timestamp format which is ISO compliant. The timestamps are used in reports and queries to identify specific events, e.g. entry timestamp, settlement timestamp, rejection timestamp.

6 REPORTS

The chapter describes report requirements in the context of TIPS. A report may contain information on individual accounts or transactions which can be made available to the TIPS actors.

6.1 OVERVIEW

Based on the TIPS actors' needs in terms of time, scope or nature of data (detailed or aggregated), several reports are available in TIPS to support business monitoring and reconciliation. They contain information which is based on the data available for a specific actor according to their roles.

TIPS actors subscribe to reports they want to receive from a pre-defined list according to the roles as described in Table 11 below. TIPS provides the reports only to those actors. The report subscription as described in section 6.3 is essential and needs to be configured prior to the report generation.

6.2 GENERAL REQUIREMENTS

ID	TIPS.UR.06.010
Name	Application-to-application communication
Requirement	All reports shall be available in application-to-application mode only.

TIPS is able to produce and send reports only via an application-to-application interface.

ID	TIPS.UR.06.020
Name	Report generation
Requirement	TIPS shall initiate the generation of reports using the data available at the time scheduled in the report subscription (Table 12) or at the end-of-day of the corresponding RTGS.

TIPS relies on a trigger provided by the RTGS to signal the end-of-day, at which point the report generation can be started.

ID	TIPS.UR.06.030
Name	Report addressee and data scope
Requirement	TIPS shall provide to TIPS actors reports on their accounts based on the permissions listed in the following Table 11.

If a Reachable Party requests information to fulfil their reconciliation or regulatory needs for an account or CMB set up for this Reachable Party, the data has to be provided by the TIPS Participant responsible for the account or CMB outside of TIPS.

Table 11: Report addressee and data scope

Actor	Statement of Account Turnover	Statement of Accounts
Central Bank	No	No
Participant	Own accounts	Own accounts ¹³
Reachable party	No	No
Instructing party on behalf of a Participant	Accounts for which their Participant's BIC is set as user	Accounts for which their Participant's BIC is set as user
Instructing party on behalf of a Reachable Party	No	No

An RTGS system actor has access to all transactions that have been settled on accounts denominated in its currency.

ID	TIPS.UR.06.040
Name	Data compression for reports
Requirement	TIPS shall compress reports whenever possible.

The compression is done using industry standard algorithms (e.g. zip), which will be further detailed in the UDFS.

ID	TIPS.UR.06.050
Name	Report timestamp
Requirement	TIPS shall provide timestamps in an ISO compliant format.

TIPS uses the timestamp format YYYY-MM-DDThh:mm:ss.sssZ. The date is displayed with a four-digit year and two digits for both month and day. The time is displayed with two digits for each of the hour, minute, second and three digits for millisecond. The letter T is used as a delimiter between date and time. The letter Z is used as a zone designator for the zero UTC offset.

ID	TIPS.UR.06.060
Name	Delta mode
Requirement	TIPS shall be able to send in delta mode the following reports: <ul style="list-style-type: none"> Statement of Accounts (see TIPS.UR.06.110).

A delta report covers the time between the last report trigger and the current one.

¹³ The Statement of Accounts contains settled transactions on CMBs linked to the Participant's accounts as well.

ID	TIPS.UR.06.061
Name	Full mode
Requirement	TIPS shall be able to send in full mode the following reports: <ul style="list-style-type: none"> • Statement of Account Turnover (see TIPS.UR.06.100); • Statement of Accounts (see TIPS.UR.06.110).

The Statement of Account Turnover is only available in “full” mode and covers the time since the last RTGS end-of-day and the trigger time. The Statement of Accounts contains either data generated within the last 24 hours or since the last RTGS end-of-day, depending on the trigger type:

- Within the last 24 hours in case of frequency trigger; and
- since the last RTGS end-of-day in case of RTGS date change trigger.

ID	TIPS.UR.06.070
Name	Reports communication
Requirement	TIPS shall allow sending the same report to different technical addressees.

TIPS is able to send reports to multiple authorised addressees.

6.3 REPORT SUBSCRIPTION

ID	TIPS.UR.06.080
Name	Report subscription
Requirement	TIPS shall offer TIPS actors the flexibility to subscribe to the following reports: <ul style="list-style-type: none"> • Statement of Account Turnover (see TIPS.UR.06.100); • Statement of Accounts (see TIPS.UR.06.110).

TIPS actors are able to configure their report subscription via the GUI. TIPS Participants may select the reports from a defined list.

Table 12: Report Subscription Attributes

Attribute	Description
Report Subscription Identifier	This attribute shall specify the unique user-defined identifier of a report subscription.
Report	This attribute shall contain the report subscribed by the TIPS actor.
Recipient	This attribute shall specify the party identifier of the receiver(s), subscribing to the reports.
Mode	This attribute shall specify whether the TIPS actor receives the relevant report in full mode and/or in delta mode.
Scheduled Time	This attribute shall define the time slots, from a predefined list, when the report is provided to the TIPS actor. The trigger could be an RTGS business day change.

Attribute	Description
Subscription Valid From	This attribute shall specify the business day from which the subscription is valid.
Subscription Valid To	This attribute shall specify the business day to which the subscription is valid.

These report subscription attributes allow e.g. sending of the same report to multiple addressees or triggering of the same report at different times during the day in delta mode.

ID	TIPS.UR.06.090
Name	Maintenance of the report subscription
Requirement	TIPS shall allow Participants to maintain their report subscription.

TIPS provides authorised TIPS actors with functionalities via the GUI to create, update or delete report subscriptions for accounts they are responsible for. Authorised TIPS actors are able to unsubscribe from a report by setting the Subscription Valid To date of the corresponding report subscription to the last day they want to receive the report. Report subscription changes are in effect as of the next business day.

6.4 TYPE OF REPORTS

ID	TIPS.UR.06.100
Name	Statement of Account Turnover
Requirement	TIPS shall generate a <i>Statement of Account Turnover</i> report for all accounts a Participant is responsible for, in accordance with TIPS.UR.06.030.

The Statement of Account Turnover report should contain at least the following information:

- the RTGS business date (the business day that is about to close);
- TIPS Participant owner BIC identifier;
- TIPS account identifier;
- currency;
- opening balance (since the last report generation);
- closing balance (based on the latest data available);
- sum of debits;
- sum of credits.

In case the report is triggered at the end-of-day of an RTGS, the opening balance corresponds to the start-of-day balance and the closing balance to the end-of-day balance of the RTGS. Reserved amounts are taken into account in the calculation of the start-of-day and end-of-day balances.

ID	TIPS.UR.06.110
Name	Statement of Accounts
Requirement	TIPS shall generate a <i>Statement of Accounts</i> report for all accounts a Participant is responsible for, in accordance with TIPS.UR.06.030.

The Statement of Accounts report lists all settled transactions of a Participant's account; these transactions are payment transactions or liquidity transfers. The report should contain at least the following information:

- the RTGS business date (the business day that is about to close);
- TIPS Participant owner BIC identifier;
- TIPS account identifier;
- currency;
- amount of each transaction;
- initial balance prior each transaction;
- final balance after each transaction;
- transaction references;
- settlement timestamp.

6.5 NOTIFICATION SUBSCRIPTION

In addition to reports TIPS foresees real-time notifications in case defined trigger events occurred. Possible triggers are the undercut of a floor value, the excess of a ceiling value or an inbound liquidity transfer from an RTGS system (for accounts only).

ID	TIPS.UR.06.210
Name	Notification subscription
Requirement	<p>TIPS shall allow Participants and Instructing Parties acting on behalf of Participants to enable and maintain the following notifications for accounts or CMBs linked to accounts owned by the Participant:</p> <ul style="list-style-type: none"> • Account floor notification (accounts/CMBs) • Account ceiling notification (accounts/CMBs) • CMB headroom floor notification (accounts/CMBs) • CMB headroom ceiling notification (accounts/CMBs) • Inbound liquidity transfer (accounts only) <p>These notifications shall be configurable on an account/CMB level.</p>

Notifications can be configured via a GUI and they are in effect as of the next business day.

ID	TIPS.UR.06.220
Name	Floor and ceiling notification addressees
Requirement	TIPS shall send floor and ceiling notifications to the Participant responsible for the account or CMB.

All notifications are sent to the owner of the account or CMB in order to allow it to trigger further actions such as liquidity transfers from/to the RTGS or adjustment of the CMB limit.

6.6 NOTIFICATIONS

ID	TIPS.UR.06.230
Name	Account floor notification
Requirement	TIPS shall notify the configured entity/entities if the balance of an account decreases below the configured floor value.

A notification is sent out every time the account balance goes below a floor value. Multiple notifications could be sent out in short order if the account balance varies around the floor value.

ID	TIPS.UR.06.240
Name	Account ceiling notification
Requirement	TIPS shall notify the configured entity/entities if the balance of an account increases above the configured ceiling value.

A notification is sent out every time the account balance goes above a ceiling value. Multiple notifications could be sent out in short order if the account balance varies around the ceiling value.

ID	TIPS.UR.06.250
Name	CMB headroom floor notification
Requirement	TIPS shall notify the configured entity/entities if the headroom of a CMB decreases below the configured floor value.

A notification is sent out every time the CMB headroom goes above a floor value. Multiple notifications could be sent out in short order if the CMB headroom varies around the floor value.

ID	TIPS.UR.06.260
Name	CMB headroom ceiling notification
Requirement	TIPS shall notify the configured entity/entities if the headroom of a CMB increases above the configured ceiling value.

A notification is sent out every time the CMB headroom goes above a ceiling value. Multiple notifications could be sent out in short order if the CMB headroom varies around the ceiling value.

ID	TIPS.UR.06.270
Name	Liquidity transfer credit notification
Requirement	TIPS shall notify the configured entity if an inbound liquidity transfer has been settled.

The ISO message for this notification could be, e.g. a camt.054.

7 QUERIES

TIPS provides real time queries which allow Participants and Instructing Parties to retrieve data based on the most recent situation known to TIPS. This chapter describes the different queries available.

7.1 OVERVIEW

TIPS provides queries to TIPS actors which allow them to monitor the current cash balance of accounts or settlement states of payments. These queries are either available in application-to-application (A2A) or user-to-application (U2A) mode. The reply to a query is transmitted via the same channel as the query itself.

TIPS restricts access to data based on the permissions outlined in Table 13. While Central Banks have access to all accounts in their books (and subsequently to all transactions on these accounts) Participants can only access their own accounts. Access for Instructing Parties is even further restricted to those accounts which they are permitted to instruct on or to transactions they submitted.

The technical actors RTGS System and TIPS Operator have full access to all data for a particular currency or all currencies.

7.2 GENERAL REQUIREMENTS

ID	TIPS.UR.07.010
Name	Availability for queries in application-to-application mode
Requirement	TIPS shall process the following queries 24/7/365: <ul style="list-style-type: none"> Account Balance and Status Query (see TIPS.UR.07.060); CMB Limit and Status Query (see TIPS.UR.07.070); Payment Transaction Status Query (see TIPS.UR.07.080).

All queries accessible via A2A are available during the operating hours of the TIPS service, i.e. 24/7/365. Query messages are based on XML technology and should comply with ISO 20022 whenever applicable.

ID	TIPS.UR.07.020
Name	Availability for queries in user-to-application mode
Requirement	TIPS shall accept the following queries from the Graphical User Interface on a 24/7/365 basis: <ul style="list-style-type: none"> Account Balance and Status Query (see TIPS.UR.07.060); CMB Limit and Status Query (see TIPS.UR.07.070); Payment Transaction Status Query (see TIPS.UR.07.080).

All queries accessible via U2A are available during the operating hours of the TIPS service, i.e. 24/7/365.

ID	TIPS.UR.07.030
Name	Availability of data
Requirement	TIPS shall process all queries in real time, based on the latest available data.

Queries sent in A2A mode or in U2A mode are not queued and processed immediately, using the most recent data available in the system.

ID	TIPS.UR.07.040
Name	Processing of queries
Requirement	TIPS shall take into account all access rights while processing queries and only return results if the querying party has access to the underlying data according to Table 13.

If party does not have access to the underlying data the query should return an error code. The following Table 13 summarises the different access that TIPS actors have.

Table 13: Query permissions

Actor	Account Balance and Status Query	CMB Limit and Status Query	Payment Transaction Status Query
Central Bank	All accounts in their books	All CMBs linked to accounts in their books	All transactions affecting accounts in their books
Participant	Own accounts	Own CMBs	All transactions affecting their accounts or CMBs
Reachable party	No	No	No
Instructing party on behalf of a Participant	Participant's accounts for which their Participant's BIC is set as user	CMBs linked to Participant's accounts for which their Participant's BIC is set as user	On transactions they submitted
Instructing party on behalf of a Reachable Party	No	CMBs linked to Reachable Party's accounts for which their Reachable Party's BIC is set as users	On transactions they submitted
RTGS System	Yes, on all accounts denominated in their currency	Yes, on all CMBs denominated in their currency	Yes, on all accounts and CMBs denominated in their currency

ID	TIPS.UR.07.050
Name	Query timestamp
Requirement	TIPS shall provide timestamps in an ISO compliant format.

TIPS uses the timestamp format YYYY-MM-DDThh:mm:ss.sssZ. This requirement is identical to TIPS.UR.06.050, which covers reports.

7.3 TYPE OF QUERIES

ID	TIPS.UR.07.060
Name	Account Balance and Status Query
Requirement	TIPS shall provide an <i>Account Balance and Status Query</i> to TIPS actors, which returns the current balance and status of one account.

The query should support the following selection criterion:

- TIPS account identifier.

The query should return at least the following information for one account:

- TIPS Participant identifier;
- TIPS account identifier;
- current balance, which is the sum of unreserved and reserved balances;
- currency;
- account status;
- timestamp of the query.

Table 13 lists actors' permissions regarding access to the underlying data.

ID	TIPS.UR.07.070
Name	CMB Limit and Status Query
Requirement	TIPS shall provide a <i>CMB Limit and Status Query</i> to TIPS actors, which returns the current limit and status of one CMB.

The query should support the following selection criterion:

- TIPS CMB identifier.

The query should return at least the following information for one CMB:

- TIPS Participant identifier;
- TIPS account identifier;
- TIPS CMB identifier;
- CMB limit (original value setup in the system);
- CMB headroom (current value of CMB headroom);
- currency;
- CMB status;
- timestamp of the query.

Table 13 lists actors' permissions regarding access to the underlying data.

ID	TIPS.UR.07.080
Name	Payment Transaction Status Query
Requirement	TIPS shall provide a <i>Payment Transaction Status Query</i> to TIPS actors, which returns the current status of one payment transaction.

The query should support the following selection criteria:

- the Originator Participant or Reachable Party BIC (field AT-06 in DS-02);
- the message reference (field AT-43 in DS-02).

The query should return at least the following information for one payment transaction:

- the Participant who submitted the payment transaction;
- the originator BIC of the payment transaction;
- the beneficiary BIC of the payment transaction;
- the payment transaction reference;
- the payment transaction status (i.e. settled or rejected with rejection reason);
- the amount of the payment transaction;
- the settlement timestamp (if available).

TIPS allows actors to query payment transactions which are still available in memory. The data retention specified in TIPS.UR.03.930 applies to payment transaction queries as well and is initially set to five calendar days. In case the payment transaction reference given is not unique only the most recent set of data should be returned.

Table 13 lists actors' permissions regarding access to the underlying data.

8 INTERFACES

Communication with TIPS is done either via user-to-application (U2A) mode or application-to-application (A2A) mode. U2A requires the provision of a GUI while A2A relies on XML messages.

8.1 GENERAL REQUIREMENTS

ID	TIPS.UR.08.010
Name	User authentication
Requirement	TIPS shall perform authentication of users.

TIPS adopts a strong two-factor authentication technique to guarantee secure identification and authentication in all the interactions between users and TIPS. Strong authentication is adopted also for privileged accounts (administrators, service desk operators, auditors, etc.). All users must have a unique identifier for their personal use only and it cannot be reassigned to a different user neither in a different timeframe.

A strong authentication technique (not necessarily two factors) shall also be applied to connect applications to TIPS in application-to-application mode.

Formally documented and approved user provisioning procedures are in place to assign and revoke user identifiers.

ID	TIPS.UR.08.020
Name	User authorisation
Requirement	TIPS shall perform authorisation of users.

TIPS ensures that Participants are allowed to perform only actions on data within the scope of their roles and responsibilities. Access rights must be granted according to the security principles of separation of duties and least privilege. Furthermore, access rights are subject to periodical review by their asset/system owner.

Formally documented and approved user provisioning procedures are in place to assign and revoke access rights to users.

8.2 U2A INTERFACE

TIPS Participants granted with the appropriate privileges can communicate with TIPS in U2A mode via a web-based graphical user interface (GUI).

8.2.1 General requirements

ID	TIPS.UR.08.030
Name	User-to-application communication
Requirement	TIPS shall provide to TIPS actors a user-to-application interface with the functionality and availability as given in Table 14.

TIPS provides TIPS actors with a Graphical User Interface offering basic functionalities to access information and controls (e.g. U2A queries, reference data maintenance).

Table 14: Interface – Overview (non-exhaustive list)

Type	Description	Section	U2A	A2A
Report	Statement of Account Turnover	6.4	N/A	24/7/365
Report	Statement of Accounts	6.4	N/A	24/7/365
Notification	Floor/ceiling notification	6.6	N/A	24/7/365
Query	Account Balance and Status Query	7.3	24/7/365	24/7/365
Query	CMB Limit and Status Query	7.3	24/7/365	24/7/365
Query	Payment Transaction Status Query	7.3	24/7/365	24/7/365
Reference Data	Report subscription	6.3	Limited time ¹⁴	N/A
Reference Data	Floor/ceiling subscription	6.5	Limited time ¹⁴	N/A
Reference Data	List of Participants subscription	9.2	Limited time ¹⁴	N/A
Reference Data	Management of accounts/CMBs	5.4.2	Limited time ¹⁴	Limited time ¹⁴
Reference Data	Management of Participants and their reference data	5.2	Limited time ¹⁴	Limited time ¹⁴
Reference Data	Blocking/unblocking functionalities	5.4.3	24/7/365	24/7/365
Reference Data	Increase/decrease of a CMB limit	5.4.4	24/7/365	24/7/365
Reference Data	Routing table change	5.4.5	Limited time ¹⁴	N/A
Reference Data	System settings change	5.4.6	Limited time ¹⁴	N/A
Message	Liquidity transfer order	4.2	RTGS opening hours ¹⁵	RTGS opening hours ¹⁵
Message	SCT Inst scheme messages	3	N/A	24/7/365
Other	General Ledger	9.3	N/A	24/7/365

¹⁴ Limited time refers to the opening hours of the common reference data module.

¹⁵ TIPS checks the status of the corresponding RTGS and rejects liquidity transfers submitted during its closing hours.

8.2.2 U2A Queries

TIPS queries available in A2A mode are also available in U2A mode.

ID	TIPS.UR.08.040
Name	Query functions available in user-to-application mode at any point in time
Requirement	TIPS shall provide the following queries in U2A mode: <ul style="list-style-type: none"> • CMB Limits query and Status Query; • Account Balance and Status Query; • Payment Transaction Status Query.

The detailed requirements related to those queries are documented in chapter 7.

8.2.3 Availability of U2A Functionalities

The following reference data maintenance functionalities are available in U2A mode with two different service levels, i.e. (i) around-the-clock or (ii) during a limited timeframe.

ID	TIPS.UR.08.050
Name	U2A functionality around the clock
Requirement	TIPS shall provide the following functionalities in U2A mode around the clock: <ul style="list-style-type: none"> • Blocking/unblocking of a Participant; • Blocking/unblocking of an account; • Blocking/unblocking of a CMB; • Increase/decrease of a CMB limit.

Crucial actions such as blocking of participants, accounts or CMBs have to be possible 24/7/365.

ID	TIPS.UR.08.060
Name	U2A functionality during the opening hours of the common reference data module
Requirement	TIPS shall provide the following functionalities in U2A mode during the opening hours of the common reference data module: <ul style="list-style-type: none"> • Management (creation/update/deletion) of an account or CMB; • Management (creation/update/deletion) of a Participant and its reference data (incl. Reachable Parties and Instructing Parties); • Report subscription; • Floor/Ceiling subscription; • List of Participants subscription; • System settings change; • Routing table change; • Liquidity transfers (accepted only during the opening hours of the RTGS).

Access to less crucial functionality pertaining to reference data setup is limited to the opening hours of the common reference data module.

8.3 A2A MESSAGES

This section covers user requirements related A2A messages which have to be processed by TIPS. After some general requirements valid for all messages more detailed requirements for all messages mentioned in the process flow diagrams of preceding chapters are listed.

8.3.1 General requirements

ID	TIPS.UR.08.070
Name	Application-to-application (A2A) communication
Requirement	TIPS shall provide an application-to-application (A2A) interface.

TIPS shall allow connectivity of TIPS Participants by using messages in application-to-application (A2A) mode.

ID	TIPS.UR.08.080
Name	ISO 20022 compliance for SCT Inst scheme messages
Requirement	TIPS shall use the 2009 version of the ISO 20022 XML message standard for inbound and outbound messages required by the SCT Inst scheme.

For the initial implementation TIPS should use the 2009 version of the ISO 20022 XML message standard as defined by the EPC SCT Inst scheme. However, succeeding versions are not excluded and might be adopted in the future, if deemed necessary. This message version requirement does not impact the ISO version used for liquidity transfer messages.

ID	TIPS.UR.08.090
Name	Overall ISO 20022 compliance
Requirement	TIPS shall use ISO 20022 compliant XML for all the messages not included in the SCT Inst scheme, if applicable.

Other formats should be used in case there is no available ISO 20022 message for the data to be transferred, or when the data to be transferred are specific to TIPS (e.g. raw data files), or when the volume of data to be transferred does not allow the usage of XML technology, from a resource consumption or performance viewpoint.

ID	TIPS.UR.08.100
Name	Technical validation for inbound messages
Requirement	TIPS shall perform technical validations on received messages, which encompass at least the following checks: Existence and ISO compliance of all mandatory fields as well as optional fields, if they are used.

TIPS has to execute additional business validations as well; those depend on the actual message type and are listed together with the message in separate user requirements in chapters 3 and 4.

ID	TIPS.UR.08.101
Name	SCT Inst scheme validation of scheme messages
Requirement	TIPS shall validate all message fields used by TIPS of all messages defined by the SCT Inst scheme for their compliance with the scheme. This validation shall include: (i) check for presence of mandatory fields and (ii) check for defined values for fields which contain status codes defined by the scheme.

This SCT Inst scheme compliance validation is only performed for messages which have been defined in the scheme, e.g. payment transactions, Beneficiary Participant replies, recalls or recall answers. Fields which TIPS does not use (e.g. the IBANs in the payment transaction message) are not validated.

ID	TIPS.UR.08.110
Name	Stop of technical validation for inbound messages
Requirement	TIPS shall terminate the technical validation of a message as soon as the first validation error is encountered.

As soon as the first validation error is encountered the validation process shall be stopped and a rejection code generated indicating which validation was erroneous. This rejection code has to be returned to the message sender.

8.3.2 Payment Process Messages

This section lists user requirements for all messages used during the payment process as detailed in section 3.2. The exact content of these messages is not always explicitly given but references to the used SCT Inst datasets (DS-X) from the SCT Inst scheme rulebook (see ref. [1]) are included; fields which are optional or mandatory for these datasets are also optional/mandatory for TIPS. Furthermore used ISO messages are mentioned in the clarifications, taken from the SCT Inst interbank implementation guidelines (see ref. [2]).

ID	TIPS.UR.08.120
Name	<i>Payment Transaction</i> message
Requirement	TIPS shall accept payment transaction messages for the purpose of instant payments settlement. These messages shall contain at least the <i>interbank payment dataset</i> (DS-02). The SCT Inst timestamp (provided by the Originator Participant or Instructing Party), which is part of DS-02, AT-50, shall be measured in UTC.

This message is called *SCT Inst transaction* in the SCT Inst rulebook from ref. [1]. According to the SCT Inst implementation guidelines the used ISO message for DS-02 is pacs.008.001.02. The *Time Stamp of the SCT Inst Transaction* (AT-50 in DS-02) is measured in UTC. It is the Participant's or Instructing Party's responsibility to ensure that their clocks are calibrated correctly.

ID	TIPS.UR.08.130
Name	<i>Rejection message</i>
Requirement	TIPS shall reply with rejection messages which contain at least the <i>negative confirmation message</i> dataset DS-03 (with RJCT code) to the Originator Participant or Instructing Party in case an instant payment transaction cannot be settled.

This message is called *negative confirmation* in the SCT Inst rulebook from ref. [1]. These negative confirmation messages contain a reason code for the rejection. Potential reasons for a rejection are, e.g. validation errors, timeouts or refusal of the Beneficiary Participant or Instructing Party to accept the funds. According to the SCT Inst implementation guidelines the used ISO message for DS-03 is pacs.002.001.03.

ID	TIPS.UR.08.140
Name	<i>Beneficiary Participant Reply message</i>
Requirement	TIPS shall process reply messages from Beneficiary Participants or Instructing Parties which contain at least the <i>confirmation message</i> dataset DS-03 (positive or negative). These messages inform TIPS about acceptance or decline of the payment.

This message is called *negative/positive confirmation* in the SCT Inst rulebook from ref. [1]. According to the SCT Inst implementation guidelines the used ISO message for DS-03 is pacs.002.001.03.

ID	TIPS.UR.08.150
Name	<i>Beneficiary Participant Status message</i>
Requirement	TIPS shall inform the Beneficiary Participant in case its reply cannot be validated or times out. This message shall contain at least the <i>negative confirmation message</i> dataset DS-03 (with RJCT code).

According to the SCT Inst implementation guidelines the used ISO message for DS-03 is pacs.002.001.03.

ID	TIPS.UR.08.160
Name	<i>Confirmation message</i>
Requirement	TIPS shall inform both, the Originator and Beneficiary Participant or Instructing Party after the payment transaction has been settled successfully. This confirmation message shall contain at least the <i>positive confirmation message</i> dataset DS-03 (with ACCP code).

This message is called *positive confirmation* in the SCT Inst rulebook from ref. [1]. According to the SCT Inst implementation guidelines the used ISO message for DS-03 is pacs.002.001.03.

8.3.3 Recall Process Messages

This section lists user requirements for all messages used during the recall process as detailed in section 3.3. The exact content of these messages is not always explicitly given but references to the used SCT Inst datasets (DS-X) from the scheme rulebook (see ref. [1]) are included; fields which are optional or mandatory for these datasets are also optional/mandatory for TIPS. Furthermore used ISO messages are mentioned in the clarifications, taken from the SCT Inst interbank implementation guidelines (see ref. [2]).

ID	TIPS.UR.08.170
Name	<i>Recall message</i>
Requirement	TIPS shall process inbound recall messages which contain at least the <i>recall of an SCT Inst dataset DS-05 or request for recall by the originator dataset DS-08</i> .

The request for recall dataset contains the original payment transaction dataset DS-02 as a subset. According to the SCT Inst implementation guidelines the used ISO message for DS-05 is camt.056.001.01. *It is currently assumed that the ISO message for DS-08 is the same.*

ID	TIPS.UR.08.180
Name	<i>Recall Rejection message</i>
Requirement	TIPS shall send recall rejection messages in case a recall cannot be validated. This message shall contain at least the message id of the payment transaction message which is recalled, a clear indication that the recall is rejected and a rejection reason code. The message id shall be taken from AT-43 of DS-02, which is part of the recall datasets DS-05 and DS-8.

This message is not defined in the SCT Inst scheme rulebook. The ISO message used for this recall rejection could be pacs.002, but will be defined in the UDFS.

ID	TIPS.UR.08.190
Name	<i>Recall Answer message</i>
Requirement	TIPS shall process inbound recall answer messages which contain at least the <i>answer to a recall of an SCT Inst dataset DS-06 (positive or negative) or the response to the request for recall by the originator dataset DS-09 (positive or negative)</i> .

Recall answer messages can contain a different set of information, depending on their characteristics, i.e. if they are positive (recall accepted) or negative (recall rejected). In case a positive recall answer is given by the Beneficiary Participant or Instructing Party of the original payment transaction to be recalled additional processing has to be done by TIPS. According to the SCT Inst implementation guidelines the used ISO message for DS-06 is camt.029.001.03 (negative) or pacs.004.001.02 (positive). *It is currently assumed that the ISO messages for DS-09 are the same.*

ID	TIPS.UR.08.200
Name	<i>Recall Answer Rejection</i> message
Requirement	TIPS shall send recall answer rejection messages in case a recall answer cannot be validated or settling of the recalled amount fails. This message shall contain a rejection reason code.

This message is not defined in the SCT Inst scheme rulebook. The ISO message used for this recall answer rejection could be pacs.002, but will be defined in the UDFS.

ID	TIPS.UR.08.201
Name	<i>Recall Answer Confirmation</i> message
Requirement	TIPS shall send recall answer confirmation messages in case a recall answer is settled successfully.

This message is not defined in the SCT Inst scheme rulebook. The ISO message used for this recall answer confirmation could be pacs.002, but will be defined in the UDFS.

8.3.4 Status Inquiry Process Messages

This section lists user requirements for all messages used during the status inquiry process as detailed in section 3.4. The exact content of these messages is not always explicitly given but references to the used SCT Inst datasets (DS-X) from the SCT Inst scheme rulebook (see ref. [1]) are included. Furthermore used ISO messages are mentioned in the clarifications, taken from the SCT Inst interbank implementation guidelines (see ref. [2]).

ID	TIPS.UR.08.205
Name	<i>Status Inquiry</i> message
Requirement	TIPS shall process <i>status inquiry</i> messages; these messages shall contain at least the <i>SCT Inst Transaction status investigation message dataset</i> (DS-07).

According to the SCT Inst implementation guidelines the used ISO message for DS-07 is pacs.028.001.01 (which is currently a candidate ISO 20022 message and as such it is still under review).

ID	TIPS.UR.08.206
Name	<i>Status Inquiry Rejection</i> message
Requirement	TIPS shall reply with <i>status inquiry rejection</i> messages in case a status inquiry cannot be validated. This reply message shall contain a rejection reason code.

The ISO message used for this status inquiry rejection will be defined in the UDFS.

ID	TIPS.UR.08.207
Name	<i>Status Inquiry Reply</i> message
Requirement	TIPS shall reply with <i>status inquiry reply</i> messages which are copies of the original payment transaction rejection or confirmation message, which was sent to the Originator Participant or Instructing Party.

These status inquiry reply messages contain the dataset DS-03, for which the ISO message pacs.002.001.03 is used.

8.3.5 Liquidity Transfer Messages

The TIPS service processes three different ISO compliant messages which are related to liquidity transfers, camt.025, camt.050 and camt.054. These messages are mandatory for communication with TIPS for all RTGS systems; however, in case of TARGET2 a more efficient solution for message processing might be feasible.

ID	TIPS.UR.08.210
Name	<i>Liquidity Transfer</i> message
Requirement	TIPS shall process <i>liquidity transfer</i> messages which are ISO 20022 compliant.

The used ISO message could be a camt.050 and will be further detailed in the UDFS. These messages are used as liquidity transfer orders sent from Participants or Instructing Parties or the RTGS to TIPS triggering an inbound or outbound liquidity transfer.

ID	TIPS.UR.08.220
Name	<i>RTGS Reply</i> message
Requirement	TIPS shall process <i>RTGS reply</i> messages which are ISO 20022 compliant, accepting or rejecting the liquidity transfer.

The used ISO message could be a camt.025 and will be further detailed in the UDFS. These messages are used as liquidity transfer confirmation messages sent from the RTGS informing TIPS about successful or failed settlement on the RTGS side.

ID	TIPS.UR.08.230
Name	<i>Liquidity Transfer Negative Receipt</i> message
Requirement	TIPS shall send <i>liquidity transfer negative receipt</i> messages which are ISO 20022 compliant and reject the liquidity transfer.

The used ISO message could be a camt.025 and will be further detailed in the UDFS. These messages are used as liquidity transfer rejection messages sent to the Participant or Instructing Party or the RTGS after either validation of the liquidity transfer message failed or settlement of the liquidity transfer order failed (e.g. due to a rejection by the RTGS).

ID	TIPS.UR.08.240
Name	<i>Liquidity Transfer Positive Receipt</i> message
Requirement	TIPS shall send <i>liquidity transfer positive receipt</i> messages which are ISO 20022 compliant and accept the liquidity transfer.

The used ISO message could be a camt.025 and will be further detailed in the UDFS. These messages are used as liquidity transfer acceptance messages sent to the Participant or Instructing Party or the RTGS after settlement of the liquidity transfer was successful.

ID	TIPS.UR.08.250
Name	<i>Liquidity Transfer Credit Confirmation</i> message
Requirement	TIPS shall send liquidity transfer confirmation messages which are ISO 20022 compliant and confirm the successful credit of a TIPS account.

The used ISO message could be a camt.054 and will be further detailed in the UDFS. These messages are used as liquidity transfer credit confirmations sent to the owner of the credited TIPS account after successful transfer of funds from the transit account to the TIPS account.

9 OTHER FUNCTIONS

9.1 RAW DATA

TIPS provides raw data on a daily basis for additional services such as archiving or billing.

ID	TIPS.UR.09.010
Name	Application-to-application communication for raw data
Requirement	All raw data files shall be available in application-to-application mode only.

TIPS is able to produce and send raw data only via an A2A interface.

ID	TIPS.UR.09.020
Name	Raw data generation
Requirement	TIPS shall initiate the generation of the raw data at the end of day of the corresponding RTGS.

TIPS relies on a trigger provided by the RTGS (e.g. a camt.019 message) to signal the end of day, at which point the raw data generation is started. Raw data could be generated and sent during a period of low system demand, e.g. during night time; however, the underlying raw data has to be as of the time of trigger, i.e. the RTGS end of day.

ID	TIPS.UR.09.050
Name	Raw data timestamp
Requirement	TIPS shall use UTC for the raw data timestamp.

Timestamps are provided in an ISO compliant format. This requirement is identical to TIPS.UR.06.050, which covers reports.

ID	TIPS.UR.09.090
Name	Raw data
Requirement	TIPS shall provide raw data on a daily basis (RTGS business day) that may be used by common Eurosystem and RTGS services for archiving and billing.

Billable items per Participant, which have to be calculable from the raw data, are (non-exhaustive list):

- Number of settled and rejected payment transactions;
- Number of settled and rejected outbound liquidity transfers;
- Number of timed out Beneficiary Participant replies (in the role of Beneficiary Participant);
- Number of sent recalls and status inquiries;
- Number of owned accounts;
- Number and type of queries executed and reports received;
- Number and type of reference data changes executed.

If an Instructing Party acts on behalf of a Participant or Reachable Party the billable items are attributed to the Participant who is responsible for the Instructing Party. Further details will be specified in the UDFS.

9.2 LIST OF PARTICIPANTS

ID	TIPS.UR.09.100
Name	List of Participants in TIPS
Requirement	TIPS shall provide a list of entities reachable through the service for each currency; this list shall include the BICs of Participants and Reachable Parties, for which one account/CMB is configured.

In order to provide Participants, Instructing Parties and Central Banks with a list of entities that can be reached through TIPS a table of all Participants and Reachable Parties, identified via their BIC, has to be maintained. This list should be made available to at least all Participants, Instructing Parties and Central Banks on a weekly basis.

ID	TIPS.UR.09.101
Name	List of Participants subscription
Requirement	TIPS shall offer all TIPS actors the flexibility to receive the list of Participants either as a full or as a delta version.

The subscription can be configured via a GUI.

9.3 GENERAL LEDGER

TIPS support monitoring of accounting requirements vis-à-vis the balance sheets, the calculation of the TARGET2 balances and the calculation of the Minimum Reserve by producing the General Ledger. More detailed requirements will be specified at a later stage in the UDFS.

ID	TIPS.UR.09.110
Name	General Ledger
Requirement	TIPS shall provide to the corresponding RTGS the General Ledger automatically without subscription after the end of the RTGS business day.

The General Ledger returns at least the following data:

- the RTGS business date (the business day that is about to close);
- TIPS Participant identifier;
- TIPS account identifier;
- currency;
- opening balance at start-of-day;
- closing balance at end-of-day;
- sum of debits;
- sum of credits.

In case of a TIPS account which reached its closing date and the balance has not been reduced to zero, the balance has to be reported in the General Ledger.

The change of business date in TIPS is completed immediately after the snapshot of the TIPS account balances is executed. A different RTGS business date is maintained in TIPS for each connected RTGS.

ID	TIPS.UR.09.120
Name	Operational contingency measures
Requirement	TIPS shall provide proper resilience and contingency measures to simulate any of the RTGS status messages in case the message is not received in TIPS. This avoids that the TIPS operation in terms of interaction with the RTGS is blocked in incident situations.

As a contingency measure in case the communication between the RTGS and TIPS is out of service due to an ongoing incident, TIPS is able to simulate the trigger for the production of the General Ledgers or for changing the status of the corresponding RTGS (i.e. open/closed).

10 NON-FUNCTIONAL REQUIREMENTS

10.1 AVAILABILITY

ID	TIPS.UR.10.010
Name	Availability
Requirement	TIPS shall be available for processing of instant payment transactions 24 hours every day of the year (24/7/365).

TIPS is open for settlement of instant payments around-the-clock, without the need for any maintenance window or daily interruption of the service.

ID	TIPS.UR.10.020
Name	Unplanned downtime
Requirement	Unplanned downtime, calculated on a quarterly basis, shall not exceed 2.16 hours, equivalent to an availability of 99.9%.

Even though technically capable of operating 24 hours per day each day of the year, as any other IT service TIPS may be subject to incidents or failures, which may cause a temporary and unforeseen interruption of the service. Regardless of the total number of such unplanned interruptions, the overall amount of service unavailability time calculated on a quarterly basis shall not be greater than 2.16 hours.

ID	TIPS.UR.10.030
Name	Planned downtime
Requirement	Planned downtime may be envisaged in order to manage some exceptional changes that require stopping temporarily the TIPS service.

Even though TIPS generally operates 24 hours every day of the year and is designed to handle change management without the need of any maintenance window, there may be cases that require stopping the TIPS service temporarily and according to a pre-agreed unavailability period.

Those cases relate to an exceptional change that cannot be managed without stopping the service or to a business decision of the relevant governance bodies.

An appropriate operational governance framework shall define the process to manage those cases (e.g. in terms of actions to be undertaken, timeframes to be respected for the agreement and the announcement of the service downtime and its maximum duration), the actors involved in the process and their individual responsibilities.

10.2 DISASTER RECOVERY

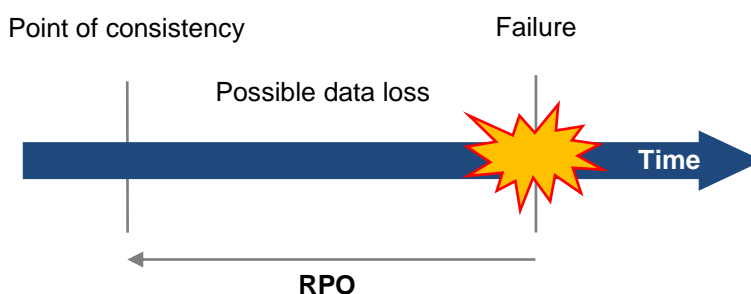
10.2.1 Recovery Point Objective

ID	TIPS.UR.10.040
Name	Recovery Point Objective (RPO)
Requirement	TIPS shall ensure a recovery point objective value of zero.

The recovery point objective (RPO) is a point of consistency to which a user wants to recover or re-start 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.

TIPS ensures synchronous point of consistency creations and, as a consequence, no data loss in case of failures.

Figure 14
Recovery Point Objective

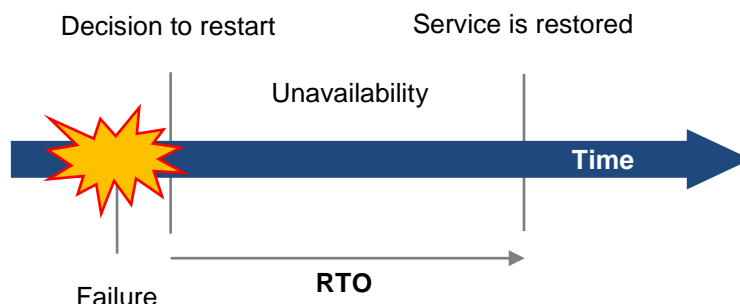


10.2.2 Recovery Time Objective

ID	TIPS.UR.10.050
Name	Recovery Time Objective (RTO)
Requirement	TIPS shall ensure a recovery time objective of 15 minutes.

The recovery time objective (RTO) is the maximum amount of time required for recovery or restart of the service to a specified point of consistency. In case of a major failure or a regional disaster, TIPS shall ensure maximum time of unavailability of 15 minutes starting from the time when the decision to restart the service is made up to the time the service is restored.

Figure 15
Recovery Time Objective



10.3 ARCHIVING

ID	TIPS.UR.10.060
Name	Archiving of transactional data
Requirement	TIPS service operator shall be able to retrieve payment transaction and status message data not older than ten years, upon request by Participants.

The TIPS operator shall be able to extract the archived payment transaction and status message data from the offline repository upon request. After the data extraction, the content shall be made available to the requestor, e.g. in a file format.

ID	TIPS.UR.10.070
Name	Archiving of reference data
Requirement	TIPS service operator shall be able to retrieve reference data not older than ten years, upon request by Participants.

The TIPS operator shall be able to extract the archived reference data from the offline repository upon request. After the data extraction, the content shall be made available to the requestor, e.g. in a file format.

ID	TIPS.UR.10.080
Name	Archiving of authentication and security data
Requirement	TIPS service operator shall be able to retrieve authentication and security data not older than three months, upon request by Participants.

The TIPS operator shall be able to extract the archived authentication and security data from the offline repository upon request. After the data extraction, the content shall be made available to the requestor, e.g. in a file format.

10.4 AUDIT TRAIL

ID	TIPS.UR.10.090
Name	Audit trail
Requirement	TIPS shall keep an audit trail of all the activities performed by the users while making use of the TIPS service.

TIPS must collect and store audit logs recording user activities, exceptions and information security events in order to assist in the access control monitoring performed by the system owner. Logging facilities and log information is protected against tampering and unauthorised access. Activities performed by privileged users (administrators, service desk operators, auditors, etc.) are also logged.

Audit trail information to be collected and stored includes the following data:

- payment transaction records;
- authentication successes and failures of normal and privileged users;
- security related messages (e.g. changes of access rights, alerts and exceptional events).

Audit trail records must contain registration timestamps and, when relevant, the identifier of the user who performed the recorded action.

10.5 INFORMATION SECURITY

ID	TIPS.UR.10.100
Name	Security requirements
Requirement	TIPS shall be compliant with the TARGET2/T2S Security Requirements and Controls.

TIPS must be compliant with the TARGET2/T2S Security Requirements and Controls, where applicable, in order to cover all the different aspects related to security, e.g.:

- security policies and procedures;
- users' authentication and authorisation;
- audit trail and access rights review;
- data integrity, confidentiality and non-repudiation;
- physical security;
- asset identification and classification;
- security incidents management.

10.6 CYBER RESILIENCE

ID	TIPS.UR.10.110
Name	Cyber resilience requirements and controls
Requirement	TIPS shall be compliant with the TARGET2/T2S Cyber Resilience Requirements and Controls.

TIPS shall be compliant with the TARGET2/T2S Cyber Resilience Requirements and Controls, where applicable, in order to cover all the different aspects related to cyber resilience, e.g.:

- definition and governance of the cyber resilience framework;
- identification and classification of processes and assets;
- protection of processes and assets;
- detection of cyber-attacks;
- incident response, resumption and recovery.

10.7 VOLUMETRIC ASSUMPTIONS

ID	TIPS.UR.10.120
Name	Instant payments processing throughput
Requirement	TIPS shall be able to process up to an average number of 500 incoming instant payment transactions per second, with a peak of up to 2,000 incoming instant payment transactions per second.

Assuming that the volume of incoming instant payment transactions does not reach its maximum value right from the start of operations, but it would rather increase over the first years of operations and reach its maximum value only at the end of this transition period, TIPS architecture and application shall be able to scale, in order to handle this increasing volume in a cost-effective manner.

On this basis, TIPS transactions processing capacity shall be scalable up to a maximum average number of 500 instant payment incoming transactions per second. This value equals the following hourly, daily and yearly volumes:

Hourly volume of payment transactions	1.8 millions/hour
Daily volume of payment transactions	43.2 millions/day
Yearly volume of payment transactions	15.77 billions/year

ID	TIPS.UR.10.130
Name	Instant payments execution time
Requirement	TIPS shall ensure completing all its processing tasks within 5 seconds for 99% of the processed instant payment transactions.

TIPS shall support the participants to achieve the target of a maximum of 10 seconds as execution time to process (i.e. either to settle or to reject) an instant payment transaction over the whole payment chain.

Such execution time shall be calculated starting from the time the Originator Participant has validated the instant payment transaction received from the Originator, to the time the Originator Participant has received either the confirmation the transferred funds are available to the Beneficiary or the rejection of the instant payment transaction.

Out of this overall execution time, TIPS shall ensure completing all its processing tasks within 5 seconds for 99% of the processed instant payment transactions. These processing tasks include:

- All the tasks performed by TIPS between the reception of the instant payment transaction from the Originator Participant and the forwarding of the same transaction to the Beneficiary Participant.
- All the tasks performed by TIPS between the reception of the reply from the Beneficiary Participant and the sending of the confirmations to the Originator Participant and the Beneficiary Participant.

ID	TIPS.UR.10.131
Name	Scalability
Requirement	TIPS shall scale up to handle, with the same execution time, a doubling of the instant payments peak throughput in one year.

TIPS is capable to scale up, in order to manage increasing volumes of instant payments, while ensuring the same execution time in the processing of each transaction (see TIPS.UR.10.130). Such increase of processing capacity should be based on a yearly forecast of the expected volumes and it may reach a maximum increase of two times the peak throughput in one year, till reaching the maximum throughput required by TIPS.UR.10.120.

10.8 CONNECTIVITY

ID	TIPS.UR.10.140
Name	Network connectivity
Requirement	TIPS shall be a network vendor agnostic service.

TIPS is a network vendor agnostic service. The intention of the Eurosystem is to let each TIPS Participant to decide on the network vendor they intend to use, as long as this network vendor complies with a set of requirements to be provided and published by the Eurosystem.

10.9 SERVICE DESK

ID	TIPS.UR.10.150
Name	Service Desk
Requirement	A Service Desk shall be available at the TIPS service provider to respond to any operational and technical issue concerning the TIPS service.

The TIPS Service Desk shall be the single point of contact for any kind of operational and technical issues concerning the TIPS service.

The TIPS Service Desk shall be responsible for providing direct support to Central Banks and TIPS Participants for managing the technical connection, also during the non-standard service hours.

Central Banks shall maintain vis-à-vis their own community of TIPS Participants the responsibility of the reference data setup and liquidity management during the standard service hours.

ID	TIPS.UR.10.160
Name	Service Desk availability
Requirement	The TIPS Service Desk shall be available both on-site during standard service hours and on-call during non-standard service hours with different service levels.

The TIPS Service Desk shall be available according to the following service hours:

- from 6:30 to 19:30: standard service hours;
- from 19:30 to 6:30 (and on TARGET2 closing days): non-standard service hours.

ID	TIPS.UR.10.170
Name	Trouble Management System
Requirement	The TIPS Service Desk shall be supported by a Trouble Management System (TMS).

The TIPS Service Desk shall be supported by a Trouble Management System (TMS). All activities of the TIPS service provider related to IT Service Management processes shall be supported by the TMS, which covers the workflow and serves as information base providing, e.g. the status of an incident/problem, the actors involved and details about reasons and solutions.

ID	TIPS.UR.10.180
Name	Access to the Trouble Management System
Requirement	Central Banks and TIPS Participant shall have read-only online access to the TMS.

Central Banks and TIPS Participants shall have online access to the TMS, with the possibility to view information related to broadcast incidents and problems, and their own incidents and problems.

ID	TIPS.UR.10.190
Name	Contacting the Service Desk
Requirement	TIPS Service Desk shall be reachable via telephone, fax and e-mail.

The communication between the TIPS Service Desk and Central Banks resp. TIPS Participants shall be based on the use of telephone, fax and e-mail.

10.10 CLOCK SYNCHRONISATION

ID	TIPS.UR.10.200
Name	Clock reference
Requirement	TIPS shall use atomic clock time as a reference.

The TIPS service clock has to be synchronised to an atomic clock time (in UTC).

11 ANNEX

11.1 LIST OF REFERENCES

	Title	Source
[1]	SEPA Instant Credit Transfer (SCT Inst) Scheme Rulebook, Version 1.0, 2016	EPC
[2]	SEPA Instant Credit Transfer Scheme Interbank Implementation Guidelines, Version 1.0, 2017	EPC

11.2 GLOSSARY

Item	Description	Source
A2A	See application-to-application	ECB
application-to-application	A technical mode of communication that permits the exchange of information between different software applications without a graphical user interface.	ECB
Beneficiary	A customer identified in the SCT Inst transaction to whom the funds are sent to.	EPC
Beneficiary Participant	A Beneficiary account servicing payment services provider.	EPC
Billable item	An event, transaction or a combination of both, that is used as a basis to calculate fees.	ECB
Business Identifier Code	An international standard for identification of institutions within the financial services industry. It consists of eight or eleven contiguous characters, comprising a financial institution code (four characters), a country code (two characters), a location code (two characters) and, optionally, a branch code (three characters).	ECB
camt	See Cash Management message	ECB
Cash Management message	(Camt) ISO 20022 standard for XML messages to be used to manage cash.	ECB
Ceiling	An upper threshold for notifying the account owner that a defined account balance or CMB limit has been reached.	ECB
Central Bank Money	Liabilities of a central bank, in the form of either banknotes or bank deposits held at a central bank, which can be used for settlement purposes.	ECB
Central Securities Depository	An entity that: 1) enables securities transactions to be processed and settled by book entry; 2) provides custodial services (e.g. the administration of corporate actions and redemptions); and 3) plays an active role in ensuring the integrity of securities issues. Securities can be held in a physical (but immobilised) form or in a dematerialised form (whereby they exist only as electronic records).	ECB
Clearing	The process of transmitting, reconciling and, in some cases, confirming transfer orders prior to settlement, potentially including the netting of orders and the establishment of final positions for settlement.	ECB

Item	Description	Source
Credit Memorandum Balance	A credit limit that is linked to a TIPS account.	ECB
Dataset	It specifies the full range of data to be provided in the relevant ISO 20022 XML message.	ECB
Delta report	A delta report is a report which only contains data for which the status/content has changed since the generation of the previous report.	ECB
Distinguished name	A name that uniquely identifies an entry in a directory or network. Usually it is a sequence of attribute-value assertions (e.g. "cn=smith") separated by commas, e.g. <cn=smith,ou=t2s-ops,o=bnkacctt,o=nsp-1>.	ECB
Euro Retail Payments Board	A high-level body chaired by the European Central Bank that brings together the supply and the demand side of the industry to address strategic retail payments issues	ECB
European Payments Council	An association representing payment service providers that supports and promotes payments integration and development in Europe. The primary task of the EPC is to manage the SEPA payment schemes.	EPC
Eurosystem	The central banking system of the euro area. It comprises the ECB and the national central banks of those EU Member States whose currency is the euro.	ECB
Extensible Mark-up Language	(XML) An open standard developed and maintained by World Wide Web Consortium (W3C), for describing and structuring data for the transmission and exchange of information between computer applications and organisations / humans.	ECB
First In/First Out	Processing sequence in which the payment orders are treated in the same sequence as they arrived (ie: the first payment arrived is treated first, the latest one is treated at the end).	ECB
Floor	A lower threshold for notifying the account owner that a defined account balance or CMB limit has been reached.	ECB
Headroom	The (remaining) headroom of a CMB specifies the current cash amount available to the user of the CMB for settlement of instant payment transactions. The headroom is the limit minus limit utilisation.	ECB
Instant Payment	A payment that can be executed 24 hours a day, each day of the year, and resulting in the immediate or close-to-immediate interbank clearing of the transaction and crediting of the payee's account with the confirmation to the payer within seconds of payment initiation. This is irrespective of the underlying payment instrument used and of the underlying arrangements for clearing and settlement that makes this possible.	ERPB
Instant Payment Transaction	A transaction or message requesting the transfer of funds from a debtor to a creditor by means of an instant payment.	ECB
Instructing Party	An entity acting on behalf of either a Participant or a Reachable Party and communicate with TIPS directly (i.e. send and receive messages). Participants and Reachable Parties can act as Instructing Parties and impersonate them.	ECB

Item	Description	Source
International Bank Account Number	An International Organization for Standardization (ISO) technical code that is an expanded version of the basic bank account number (BBAN). Intended for use internationally, the IBAN uniquely identifies an individual account at a specific financial institution in a particular country. The IBAN also includes the bank identifier of the financial institution servicing that account.	ECB
ISO 20022	The international standard for financial services messaging, maintained by the International Organization for Standardisation.	ECB
Limit	Quantitative limit on the funds transfer activity of participants in a system; limits may be set by each participant or imposed by the body managing the system.	ECB
Limit utilisation	The limit utilisation of a CMB specifies the amount by which its limit is already reduced by settlement of instant payments. The limit utilisation is the limit minus headroom.	ECB
Liquidity transfer	An instruction to transfer central bank money from an RTGS account to a TIPS account or vice versa from a TIPS account to an RTGS account.	ECB
National Central Bank	A Central Bank that provides cash account services to Participants for settlement of instant payments in central bank money	ECB
Netting	An agreed offsetting of mutual obligations by participants in a system. This process involves the calculation of net settlement positions and their legal reduction to a (bilateral or multilateral) net amount. Netting may take several legal forms.	ECB
Originator	A Customer who initiates directly or indirectly the SCT Inst by providing the Originator Participant with an instruction.	EPC
Originator Participant	An Originator account servicing payment services provider.	EPC
pacs	See Payments Clearing and Settlement message	ECB
Participant	An entity which has a BIC and own at least a TIPS (and/or linked CMBs); their accounts cannot have a negative balance. This entity is responsible for the setup and configuration of CMBs linked to their accounts.	ECB
Payment Transaction	See Instant Payment Transaction	
Payments Clearing and Settlement message	(Pacs) ISO 20022 standard for XML messages to be used to manage payments clearing and settlement.	ECB
Payments Module (of TARGET2)	In the context of TARGET2, it's a mandatory module which allows the settlement of payments in the RTGS account, held by all direct participants. In addition, it offers advanced services for liquidity management, for the communication with direct participants and ancillary systems.	ECB
PM	See Payments Module (of TARGET2)	ECB

Item	Description	Source
Reachable Party	An entity which does not have TIPS accounts and have to rely on a Participant to allow them to use an account (or CMB). Reachable parties can interact with TIPS directly (i.e. send payment transactions) if they assume the role of an Instructing Party; however, responsibility remains with the Participant.	ECB
Real-Time Gross Settlement system	A settlement system in which processing and settlement take place on a transaction-by-transaction basis (without netting) in real time.	ECB
Recall	A recall occurs when the Originator Participant requests to cancel an SCT Inst Transaction. The Recall procedure can be initiated only by the Originator Participant which may do it on behalf of the Originator.	EPC
Recovery Point Objective	The recovery point objective (RPO) is a point of consistency to which a user wants to recover or restart the service.	ECB
Recovery Time Objective	The recovery time objective (RTO) is the maximum amount of time required for recovery or restart of the service to a specified point of consistency.	ECB
Reservation of funds	A process of preventing the transfer of a specified amount of funds in a specific currency in one TIPS account to any other TIPS account except for the purpose for which the funds were reserved.	ECB
Scheme	A scheme can be considered as a set of procedures, rules and technical standards governing the execution of payment transactions.	ECB
Settlement	An act that discharges obligations in respect of funds or securities transfers between two or more parties.	ECB
Single Euro Payments Area	A process initiated by European banks and supported, inter alia, by the Eurosystem and the European Commission with a view to integrating retail payment systems and transforming the euro area into a true domestic market for the payment industry.	ECB
System User	An individual or a technical process/application that can log into the service with a login name and password.	ECB
T2S	See TARGET2-Securities	ECB
TARGET2	The Eurosystem's single shared platform enabling the settlement of payments in central bank money in Europe, supporting the implementation of the Eurosystem's monetary policy.	ECB
TARGET2-Securities	The Eurosystem's single technical platform enabling central securities depositories (CSDs) and national central banks to provide core, borderless and neutral securities settlement services in central bank money in Europe.	ECB
Timestamp	A timestamp is a sequence of characters, denoting the date and/or time at which a certain event occurred.	ECB
TIPS Operator	The Operator is the legal and/or organisational entity/entities that operates/operate the instant payment service.	ECB
Transit Account	A cash account in the RTGS system and in TIPS held and used by the responsible system operator to transfer funds between the two. The transit account opened within TIPS is referred as RTGS dedicated transit account and the transit account opened within the RTGS system is referred as TIPS dedicated transit account.	ECB

Item	Description	Source
U2A	See user-to-application	ECB
User Requirement	A condition or capability needed by a stakeholder to solve a problem or achieve an objective.	ECB
User Requirements Document	The document setting out the user requirements of a service.	ECB
user-to-application	A mode of technical communication that permits the exchange of information between software applications of TIPS and a TIPS system user through a graphical user interface.	ECB

11.3 LIST OF ACRONYMS

Item	Description
24/7/365	24-hour and seven-day around the year
A2A	application-to-application
BIC	Business Identifier Code
camt	Cash Management
CMB	Credit Memorandum Balance
CSD	Central Securities Depository
DN	Distinguished Name
DS	Dataset
ECB	European Central Bank
EPC	European Payments Council
ERPB	Euro Retail Payments Board
FIFO	First-In First-Out
GUI	Graphical User Interface (see U2A)
IBAN	International Bank Account Number
pacs	Payments Clearing and Settlement
PM	Payments Module (of TARGET2)
RPO	Recovery Point Objective
RTO	Recovery Time Objective
SEPA	Single Euro Payments Area
T2S	TARGET2-Securities
TIPS	TARGET Instant Payments Settlement Service
TMS	Trouble Management System
TR	Task Requirement
U2A	user-to-application
UDFS	User Detailed Functional Specifications
UR	User Requirement
URD	User Requirements Document
UTC	Coordinated Universal Time
XML	Extensible Mark-up Language