



EUROPEAN CENTRAL BANK  
EUROSYSTEM

# T2-T2S CONSOLIDATION

## BUSINESS DESCRIPTION DOCUMENT

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## 1 INTRODUCTION

In spring 2016, the Eurosystem consulted the market on its vision for evolving the Eurosystem market infrastructure services with regards to the Real-time Gross Settlement (RTGS) as well as exploring synergies between TARGET2 and T2S<sup>1</sup>. The vision was placed in the context of the capital markets union, which the European Commission was pursuing in parallel. On the basis of the feedback on the consultative report<sup>2</sup> and other Eurosystem considerations, the Governing Council approved the start of the investigation phase for the T2-T2S Consolidation project in September 2016 together with the approval of the investigation phase for TARGET Instant Payment Settlement (TIPS) and for Eurosystem Collateral Management System (ECMS) projects.

The aim of the T2-T2S Consolidation project is to consolidate and optimise the provision of the TARGET2 and T2S services and to address the increasing demand for having an effective facility for the provision of liquidity to existing and future Eurosystem payment and settlement services. For this purpose, the T2-T2S Consolidation project assessed four different work streams during the investigation phase:

- **Technical consolidation of the Eurosystem market infrastructures**, which will form the basis of the modernisation of the Eurosystem market infrastructures. A key objective is to be compliant with the latest cyber resilience directives, thus ensuring protection against cyber-attack.
- **Consolidated and Harmonised Connectivity Solution**, creating a single gateway for Eurosystem market infrastructure services based on the consolidation of connectivity and security components.
- **Functional convergence** into a single platform, which will allow the sharing of common components as well as the removal of unused or little used functionality. It is important to highlight that the RTGS and T2S services will remain separate. In addition, it will also allow the extension of the Eurosystem RTGS services to other Central Banks in Europe that have not yet adopted the Euro, through the introduction of a multi-currency capability.
- **New RTGS services**. The “Task Force on Future RTGS Services”, comprising of Central Bank representatives and market participants, analysed the current scope of the RTGS services and identified new potential features as well as opportunities to adapt, streamline and improve the existing services to the changing needs of the payment business.

In May 2017, the ECB submitted a full set of the draft User Requirements Documents (URD) to the market for consultation; the documents were subsequently updated based on the feedback received.

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<sup>1</sup> [http://www.ecb.europa.eu/paym/t2/shared/pdf/professionals/RTGS\\_services\\_consultative\\_report.pdf](http://www.ecb.europa.eu/paym/t2/shared/pdf/professionals/RTGS_services_consultative_report.pdf)

<sup>2</sup> [http://www.ecb.europa.eu/paym/t2/shared/pdf/professionals/Feedback\\_RTGS\\_services\\_consultation.pdf](http://www.ecb.europa.eu/paym/t2/shared/pdf/professionals/Feedback_RTGS_services_consultation.pdf)

On 06 December 2017, the ECB Governing Council approved the start of the realisation phase of the T2-T2S Consolidation project as well as the T2-T2S Consolidation URDs v1.0.

## 1.1 PURPOSE OF THE DOCUMENT

The purpose of the Business Description Document is to introduce the functions and features of the future Eurosystem Market Infrastructure services for real-time interbank and customer payments and for the liquidity management to the final users. Its aim is to support the banking community in starting their internal preparation for the migration in November 2021. While this document provides a high-level overview of the new services, detailed information that is required by users for adapting their internal systems is provided in functional and technical specifications (e.g. User Detailed Functional Specification, User Handbook, documentation on Connectivity).

## 1.2 STRUCTURE OF THE DOCUMENT

The Business Description Document is divided into following chapters:

- **Chapter 1: Introduction** specifies the purpose and the structure of the document. In addition, this chapter provides a short overview of the current TARGET2/SSP functions that are not provided any longer by the future Eurosystem services for real-time interbank and customer payments and the liquidity management.
- **Chapter 2: High level overview of the future landscape** provides the global overview of the future services – their key aspects and expected benefits.
- **Chapter 3: Treasury perspective** elaborates on the functions and features that shall support the treasury departments of the credit institutions to manage liquidity for their institution as well as for other users. This chapter gives also an overview of the possible account structures and explains the characteristics of different accounts and the interaction with Central Banks and ancillary systems.
- **Chapter 4: Transaction processing perspective** details the functions and features that are crucial for transaction processing by the credit institutions. This chapter clarifies the core features of the settlement processing engine – liquidity saving mechanisms and scheduling. In addition, the chapter elaborates on general principles for messaging and for contingency measures for participants.
- **Chapter 5: Ancillary system perspective** describes all functions and features in the future RTGS service that an ancillary system shall be aware of.
- **Chapter 6: Connectivity perspective** paves the way for the users to connect to the future Eurosystem Market Infrastructure services. The chapter provides the conceptual view of the roles and access rights and explains the migration approach.

The Business Description Document provides references to functional and technical specifications (once available) where detailed information can be found. In addition, cross-references are made also across different chapters in this document.

### 1.3 LIST OF REFERENCES<sup>3</sup>

The reader can find additional as well as more detailed information in the following project documentation:

- T2-T2S Consolidation User Requirements Document (URD) v1.1.1
  - URD on Central Liquidity Management (CLM) <http://www.ecb.europa.eu/paym/initiatives/shared/docs/8d677-t2-t2s-consolidation-user-requirements-document-central-liquidity-management-clm-v1.1.1.pdf>
  - URD on Future RTGS (RTGS) <http://www.ecb.europa.eu/paym/initiatives/shared/docs/bfa2d-t2-t2s-consolidation-user-requirements-document-future-rtgs-rtgs-v1.1.1.pdf>
  - URD on Shared Services (SHRD) <http://www.ecb.europa.eu/paym/initiatives/shared/docs/a21ce-t2-t2s-consolidation-user-requirements-document-shared-services-shrd-v1.1.1.pdf>
  - Glossary <http://www.ecb.europa.eu/paym/initiatives/shared/docs/28f0d-t2-t2s-consolidation-glossary-v1.1.1.pdf>
- User Detailed Functional Specifications (UDFS) for CLM
- User Detailed Functional Specifications (UDFS) for RTGS
- User Handbook (UHB)
- Testing and Migration Documentation
- Big Bang Strategy
- Training Documentation

### 1.4 SUCCESSOR OF TARGET2

Today, the Eurosystem owns and operates TARGET2 as the RTGS system for euro settlement in Central Bank Money. The legal context of the future RTGS services will rely on the existing legal framework to the largest extent and several functions continue like in TARGET2/SSP (Single Shared Platform). Nevertheless there are a number of TARGET2 features and functions that are not provided in the new service due to change in message and communication standards, their very limited usage and the associated operational costs, system security or because the same result can be achieved with other functions.

Following current features and functions are discontinued in the future RTGS services:

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<sup>3</sup> The list of references as well as their versions and links will be modified once an updated version is available

- Communication based on FIN messages (*will be switched to ISO 20022*)
- SWIFT Y-copy mode (*will be switched to V-shape mode*)
- Liquidity pooling/ virtual account and the related functionality (e.g. single payment queue, End of Day “levelling out” of balances)
- Home Accounting Module (HAM) (interface for Proprietary Home Accounting (PHA) applications)
- Services supporting “CB customer’s accounts”
- ICM access via Internet in U2A mode
- AS procedure 1 “Liquidity transfer”, AS procedure 2 “Real-time settlement” and AS procedure 3 “Bilateral settlement” (*can be handled with liquidity transfers and individual payments/payment files to/from the AS*)

## 2 HIGH LEVEL OVERVIEW OF THE FUTURE LANDSCAPE

The Eurosystem provides market infrastructure services for real-time interbank and customer payments as well as for settlement of securities and will provide also instant payment settlement services. The landscape and requirements toward the future Eurosystem payment and settlement services have changed significantly and will continue to change, requiring especially an adequate and efficient features/facility for the provision of liquidity. Furthermore, in order to enable the consolidation across several services and to achieve the expected cost savings, functions that are required in various services will be provided once, centrally on a modular basis as far as possible and reasonable. This chapter provides a global overview of the future Eurosystem market infrastructure services and related common components – its main aspects and benefits.

### 2.1 KEY ASPECTS

The T2-T2S Consolidation project will technically modularise the currently provided services and consolidate the respective functionalities where reasonable and possible. Depending on their nature, the functionalities are clustered into Eurosystem market infrastructure services or common components.

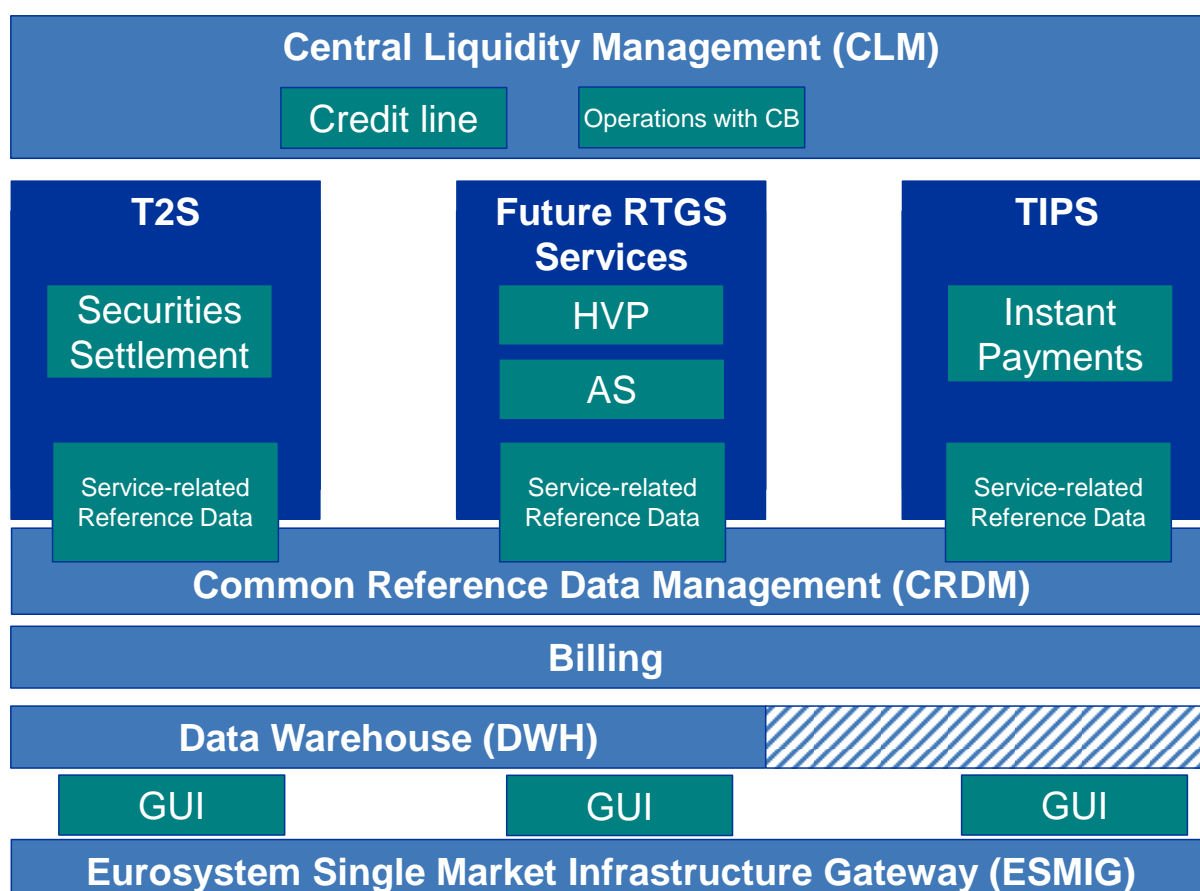


Figure 1: High level functional domains



### 2.1.1 Eurosystem market infrastructure services

The family of the Eurosystem market infrastructure services will consist of (1) Central Liquidity Management (incl. Central Bank Services); (2) RTGS (3) TARGET2-Securities; and (4) TARGET Instant Payment Settlement (TIPS).

Adequate liquidity provisioning and clear allocation of liquidity across the different services will be ensured through the new **Central Liquidity Management (CLM)** service. This new service will also segregate all interactions of the credit institutions with their Central Bank in its role as Central Bank of Issue from the real-time interbank/customer payments as well as the ancillary system transactions. All credit institution's transactions with its Central Bank will be managed in CLM including the ones related to the **Central Bank Services**, such as Reserve Management and Standing Facilities. CLM will hold the Main Cash Accounts (MCA) of the credit institutions (see section [3.1.1 MAIN CASH ACCOUNT IN CENTRAL LIQUIDITY MANAGEMENT](#)), where they settle all Central Bank operations (e.g. open market operations, cash withdrawals, standing facilities, etc.). These accounts can also be used to fulfil the minimum reserve obligations. In CLM, the participants steer, manage and monitor the liquidity across all services and accounts in a currency. The credit line assigned to a credit institution is linked to an MCA, where it can be transferred in cash to the dedicated cash accounts (DCA) of the RTGS, T2S or TIPS services. Such liquidity transfers can be instructed or automatically triggered based on an event (e.g. a queued payment, breaching of floor/ceiling amount). With these functionalities the users of the current HAM module should find all their needs addressed in CLM without the need to open an additional RTGS DCA. The current "co-management" functionality for HAM accounts can be reflected via access rights and message subscription in a flexible way (see section [3.6 LIQUIDITY MANAGEMENT SERVICES TOWARD OTHER USERS](#)).

The **RTGS** service provides the settlement for real-time interbank and customer payments and ancillary system transactions. A participant may open more than one RTGS DCA for a dedicated purpose, depending on its business needs (e.g. for AS transactions, for the payment business of a branch/entity). The settlement of payments and AS transactions will remain almost unchanged or is enhanced compared to the execution and service levels in TARGET2 (e.g. reservations for purpose, priorities and optimisation algorithms).

The **TARGET2-Securities (T2S)** service is a single, pan-European platform for securities settlement in Central Bank Money. The settlement of the cash leg of the Delivery versus Payment (DvP) transactions takes place on the dedicated cash accounts in euro Central Bank Money. T2S went live in June 2015.

The **TARGET Instant Payment Settlement (TIPS)** service will facilitate the immediate settlement of instant payments in euro Central Bank Money on the dedicated cash accounts of the payer and the payee. It will operate 24 hours on each day of a calendar year. TIPS supports the participants to be compliant with the SEPA Instant Credit Transfer (SCT Inst) scheme which the European Payment

Council (EPC) has developed for instant payments in euro. TIPS is planned to go live in November 2018.

### 2.1.2 Common components

The Eurosystem market infrastructure services will be supported by common components: (1) Eurosystem Single Market Infrastructure Gateway; (2) Common Reference Data Management; (3) Billing; and (4) Legal Archiving. In addition, some market infrastructure services will have a common Data Warehouse and contingency component.

The access to the Eurosystem services and components will take place via **Eurosystem Single Market Infrastructure Gateway (ESMIG)** component. It will be network provider agnostic (i.e. will not rely on network specific features) and thus allows participants to connect through a single network service providers to access all Eurosystem market infrastructures both via A2A and U2A. Furthermore, ISO 20022 compliant messaging will be adopted as the standard format for communication with all Eurosystem market infrastructures. ESMIG shall provide central authentication, authorisation and user management features to protect the connected systems/platforms against intrusion and unauthorised access and to ensure that a trusted party transmitted the inbound communication through a secure channel.

Any reference data object (or function) that is used by more than one service shall be set up and managed (or implemented) in **Common Reference Data Management (CRDM)** component. Service-specific reference data objects (or functions) are set up and managed (or implemented) in the respective service. The aim of CRDM is to (1) achieve consistency and integrity of all reference data, (2) ensure consistent processing and relationships between reference data across services, and (3) avoid duplication of reference data and redundant implementation of the same functions in multiple services.

Common component for **Billing** will facilitate the Eurosystem to prepare and process invoices for different market infrastructure services and common components.

**Legal Archiving** component will collect all information which is subject to legal archiving requirements: i.e. all incoming and outgoing business transactions from and to participants as well as relevant reports such as account statements. The information will be stored in its original content and format and will be accessible within its retention period.

Data from the previous business day is available in **Data Warehouse (DWH)** component as of the next business day. DWH provides data for historical, statistical and regulatory reporting. Participants can access the DWH via U2A and A2A. They can subscribe for predefined reports or query the database by using predefined templates.

### 2.1.3 Other aspects

- **Multi-currency**

Similarly to T2S, the Eurosystem market infrastructure services for RTGS, CLM and TIPS and the relevant common components will become multi-currency enabled, i.e. the settlement services will support settlement in different currencies and according to their own calendars. However, the business day will be changed at the same time for all currencies. Furthermore, none of the Eurosystem market infrastructure services will offer conversion between currencies.

- **Daily scheduling**

Each market infrastructure service (CLM, RTGS, T2S and TIPS) will have its own opening times, while the Change of Business Day is synchronised across all services<sup>4</sup>. The T2-T2S Consolidation project aims at synchronising also the timing of the maintenance windows in all services and common components.

- **Calendar**

With exception of TIPS, all Eurosystem market infrastructure services and common components will operate from Monday to Friday on TARGET opening days. The Eurosystem is ready to consider opening CLM and RTGS services during a pre-agreed period also on TARGET closing days, provided that there is a valid business case and depending on the associated costs and other constraints.

The T2-T2S Consolidation project will be implemented in phases.

- Phase I will provide the necessary parts of the common components that are required for the support of TIPS: part of the CRDM and ESMIG. These changes will be implemented in November 2018 and will have no impact on TARGET2 and T2S participants.
- Phase II will provide further changes that affect, amongst other things, the services for liquidity management, network connectivity, messaging and billing:
  - ▶ The segregation of Central Bank transactions from the real-time interbank/customer payments as well as the ancillary system transactions in RTGS;
  - ▶ Concentration of Central Bank transactions together with other Central Bank Services, such as Reserve Management and Standing Facilities, in CLM;

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<sup>4</sup> As TIPS processes instant payments continuously, then the Change of Business Day occurs in TIPS at the time when CLM, RTGS and T2S start their End of Day procedures, i.e. at 18:00. The Change of Business Day in CLM, RTGS and T2S and in common components takes place at 18:45.

- ▶ The harmonised provisioning of support functionalities, such as Common Reference Data Management (CRDM), Data Warehouse (DWH) and Billing for the future RTGS, T2S and TIPS;
- ▶ The implementation of ISO 20022 for communication with RTGS and CLM services and CRDM component.

## 2.2 KEY BENEFITS

The Eurosystem aims at further decreasing the running costs of the existing market infrastructure services, which in addition to the below functional benefits is aimed to be passed on to the users.

- Centralised management and control over the payment capacity – clear allocation of liquidity for the different settlement purposes, while providing a central liquidity overview in a single screen with easy access to more detailed information
- Segregation of interaction with Central Banks from RTGS participation – no RTGS DCA needed for monetary policy purposes
- Minimum reserve calculation and automated standing facilities – technical capability to take all balances on relevant accounts (MCA, DCAs) into account
- Multi-vendor approach for connectivity – encourages competition among network service providers as the service is not relying on proprietary features of a specific network provider
- Introduction of ISO 20022 compliant messaging – allows the participants to communicate to all Eurosystem market infrastructure services and common components with the ISO 20022 compliant messages
- Common reference data management – reduces the effort of creating and maintaining multiple copies of reference data as well as centralised management of user access rights
- Shared data warehouse – central place for participants to access historic information across RTGS, CLM and T2S services
- Longer opening hours for real-time interbank and customer payments settlement (under consideration) – allows participants active around the world to better service customers in different time zones for their euro settlement

### 3 TREASURY PERSPECTIVE

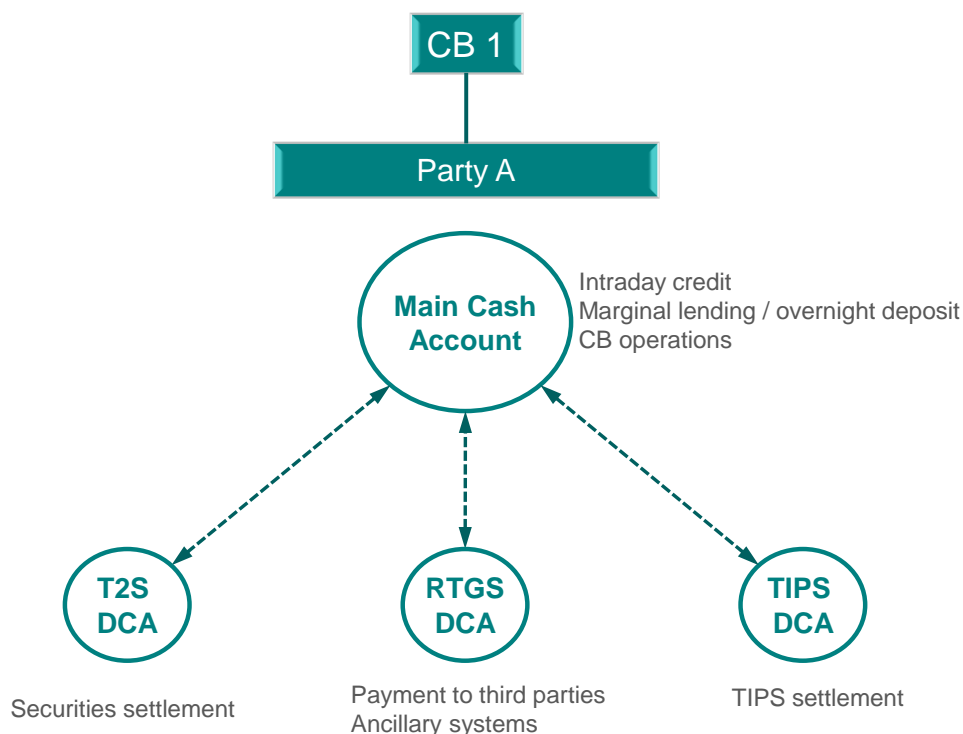
This chapter elaborates on the functions and features that shall support the treasury departments at banks to manage liquidity for their institution as well as for other users. The chapter consists of following sections:

- **Section 1: Account structure** aims at helping the reader to identify which type of account(s) an institution needs. It explains the characteristics of different accounts and the main principles for segregating the payment transactions.
- **Section 2: Liquidity management** elaborates on the tools and features that support the treasurer in managing and monitoring liquidity.
- **Section 3: Principles for drawing of liquidity** explains the interplay between MCA in CLM and the DCA in RTGS and reservations.
- **Section 4: Interaction with Central Bank** presents the main principles on how different CB operations and services (e.g. usage of standing facilities, update in credit line, calculation of minimum reserve) will take place.
- **Section 5: Interaction with ancillary systems** clarifies what treasurers shall keep in mind in terms of liquidity management for AS transactions.
- **Section 6: Liquidity management services toward other users** elaborates on possibilities for monitoring balances and managing liquidity across different entities and how to set it up.
- **Section 7: Other aspects** addresses, inter alia, how to subscribe for reports required from treasury perspective.

#### 3.1 ACCOUNT STRUCTURE

The Eurosystem market infrastructure services CLM, RTGS, TIPS and T2S will each operate with its own set of accounts. While CLM is the central service for liquidity management and, thus, holds the Main Cash Accounts (MCA), the services for RTGS, TIPS and T2S hold Dedicated Cash Accounts (DCA).

The future account structure facilitates the requirements of the users in different size and with different business needs. It will allow the treasurers to dedicate and monitor the liquidity allocated to a specific settlement service for their institution as well as provide the services to other users. At the same time the account structure concentrates specific operations and transactions on a single account, which facilitates, inter alia, for users to identify which accounts they in reality need.



**Figure 2: Basic account structure model**

There is no obligation to hold a Main Cash Account or a Dedicated Cash Account. If a Party wants to use one of the dedicated services, then it needs a corresponding DCA. A DCA must be connected with at least one MCA to receive liquidity and with one MCA for billing purposes, while these MCA(s) may belong to a different Party than the owner of the DCA.

An entity eligible to participate and settle in the Eurosystem market infrastructure services will be defined only once in the system as a Party (see section [4.1 POSSIBLE WAYS FOR BEING REACHABLE IN RTGS SERVICE](#)). It can then be assigned with access rights that are required to become a Participant in one or the other service.

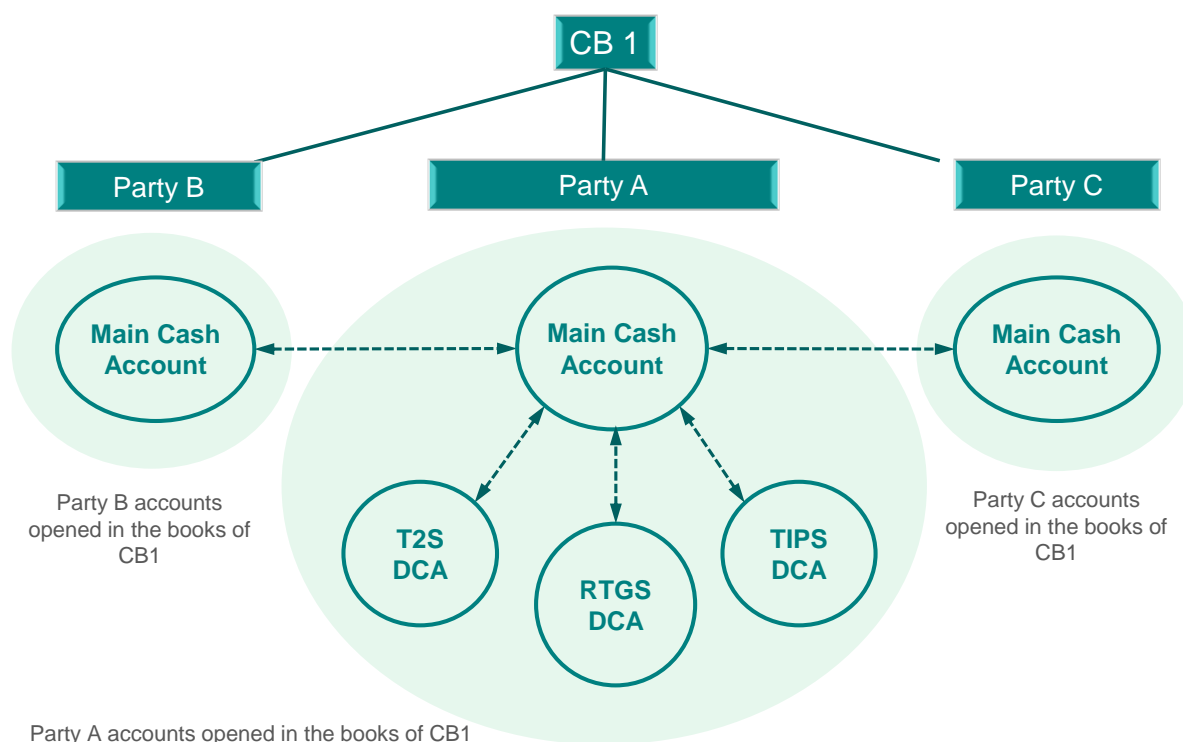
### 3.1.1 Main Cash Account in Central Liquidity Management

The Main Cash Account (MCA) is opened in Central Liquidity Management (CLM). It is identified by a BIC11. On this account the Central Banks settle any kind of interaction with their participants, inter alia

- Update of the credit line (cash side);
- Standing Facilities for counterparties on their own initiative (i.e. marginal lending on request and overnight deposits) as well as automatic marginal lending;
- Cash withdrawals;
- Open market operations;
- Any other monetary policy operation;
- Debit of billing amounts;

- Interest payment orders linked to marginal lending, overnight deposits, minimum reserves and excess of reserve;
- Any other activity carried out by Central Banks in their capacity as Central Bank of Issue.

No payments between market participants are allowed on MCA. However, the account can receive or transfer liquidity from/to other MCAs within the same group. Furthermore, the collateral management system manages any update in the credit line amount assigned to a Party, by settling the securities/collateral side in T2S and transmitting the credit line information to CLM.



**Figure 3: CLM for a group of banks**

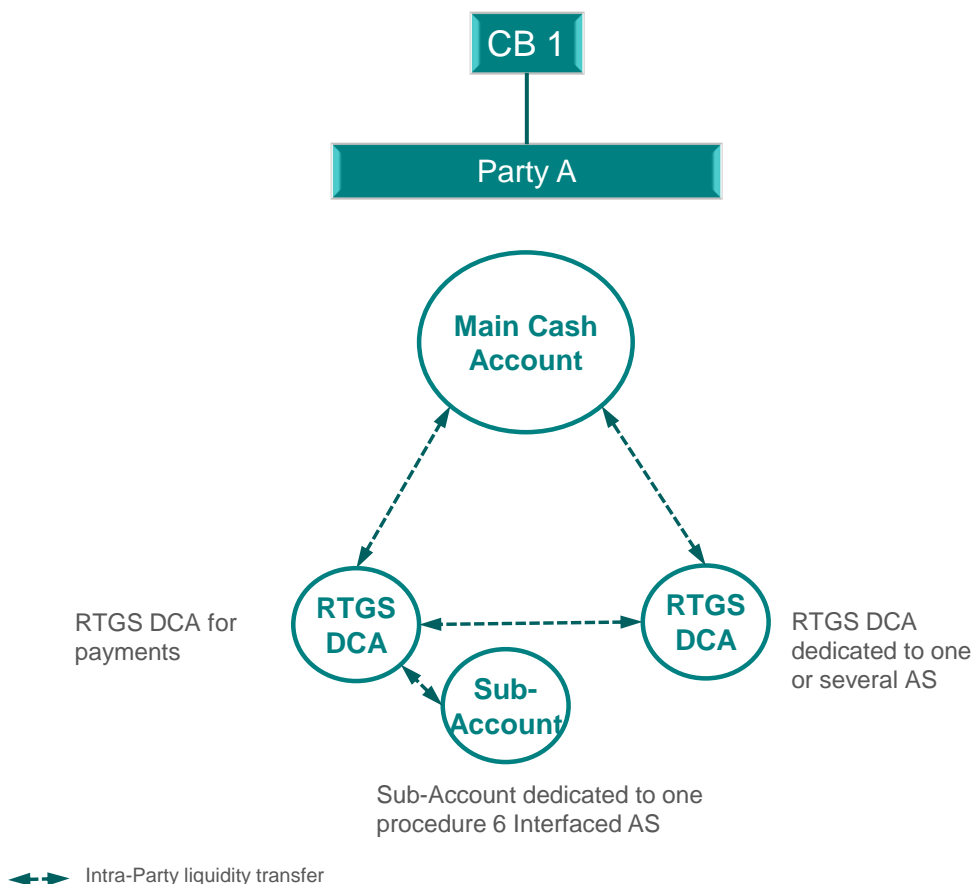
A Party may have several MCAs, however the credit line linked to the Party can only be assigned to one of them.

The scope of the MCA is defined keeping in mind the needs of a credit institution that interacts with the Eurosystem for the above listed operations only. For example, it addresses the needs of the users of today's TARGET Home Accounting Module (HAM).

### 3.1.2 Dedicated Cash Account in RTGS service

The Dedicated Cash Account (DCA) in RTGS service is for settlement of real-time interbank and customer payments and transactions with ancillary systems.

A Party may have several RTGS DCAs for a dedicated purpose. For example, an RTGS DCA for settlement of his own payments, an RTGS DCA for settlement with one or several ancillary systems, an RTGS DCA for settlement of payments on behalf of indirect participants, addressable BICs or multi-addressees. Furthermore, a participant may open an RTGS DCA sub-account dedicated to one ancillary system that uses the AS procedure currently known as procedure 6 Interfaced. Each BIC11 can address only one RTGS DCA in order to ensure that proper addressing of payments. For AS procedure 6 the same BIC11 will address the sub-account.



**Figure 4: Model for RTGS accounts**

Like all other DCAs, the RTGS DCA operates on cash-only-basis, i.e. the credit line that is on the MCA can be used to increase the liquidity on the DCA by transferring liquidity from MCA to DCA. An RTGS DCA balance cannot be negative; however, the balance needs not to be transferred to the MCA at the End of Day to be taken into account for the minimum reserve and standing facilities, but can remain on RTGS DCA for the next business day.

### 3.1.3 Dedicated Cash Account in TIPS service

The Dedicated Cash Account (DCA) in TIPS service is for settlement of instant payments. The TIPS DCAs operate on a cash-only-basis and can be funded with liquidity from the MCA. The TIPS DCA balance needs not to be transferred to MCA at End of Day to be taken into account for the minimum



reserve and standing facilities, but can remain on TIPS DCA in order to support the settlement in 24/7/365. Please refer to TIPS documentation<sup>5</sup> for further information.

### 3.1.4 Dedicated Cash Account in TARGET2-Securities service

The Dedicated Cash Account (DCA) in the T2S service settles the cash leg of securities transactions. Similarly to other DCAs, the T2S DCA operates on a cash-only-basis, but T2S provides in addition also an auto-collateralisation function for generating liquidity. However, the participants cannot use the T2S auto-collateralisation mechanism to allocate liquidity from T2S to another service. Furthermore, contrary to the principles of the RTGS and TIPS DCAs, the balance of T2S DCA must be transferred to the linked MCA at End of Day for the respective processes and cannot remain on T2S DCA. Please refer to T2S documentation<sup>6</sup> for further information. Although the T2-T2S Consolidation project will prepare the ground for abandoning the cash sweep from T2S, it is up to the T2S community to decide on whether this behaviour should be changed.

## 3.2 LIQUIDITY MANAGEMENT

The future structure of the Eurosystem Market Infrastructure Services requires a clear allocation of liquidity for different settlement purposes. This requires that the treasurers have means and tools to monitor and manage the liquidity manually as well as to automate the liquidity management to the required extent (e.g. without the need to initiate manual liquidity transfers).

### 3.2.1 Tool box for monitoring liquidity

The future service will provide information tools and functions to facilitate the monitoring of liquidity by the Parties.

#### 3.2.1.1 GRAPHICAL USER INTERFACE

The Graphical User Interface (GUI) allows the Party to access the services via a desktop (User-to-Application (U2A) mode) (see further information in section [6.3 ACCESS TO EUROSYSTEM MARKET INFRASTRUCTURES](#)). While in the GUI for CLM, the user can see information on all MCA and DCAs linked to his Party or Account Monitoring Group (see section xxx), the GUI for a dedicated settlement service (i.e. RTGS, TIPS and T2S) presents information on the Party's accounts in this service only.

Via the **CLM GUI** the user can either (1) at the level of each single MCA or DCA or (2) at the level of a Party (i.e. aggregated view of all MCAs and DCAs belonging to the Party) or (3) at the level of an Account Monitoring Group (i.e. aggregated view if all MCAs and DCAs belonging to the Parties in the Account Monitoring Group), inter alia,

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<sup>5</sup> <http://www.ecb.europa.eu/paym/initiatives/html/index.en.html>

<sup>6</sup> <http://www.ecb.europa.eu/paym/t2s/about/keydocs/html/index.en.html>

- Monitor balances
- Monitor credit line usage
- Monitor T2S auto-collateralisation usage
- Monitor the payment orders queued in the respective service
- Monitor warehoused payments with future value date
- Amend the payment orders queued in CLM for MCA
- Set up and modify parameters for automated liquidity management tools in CLM for the MCA (see section [3.2.2 TOOL BOX FOR MANAGING LIQUIDITY](#))

In addition, the user can via the **RTGS GUI**, inter alia,

- Monitor the balances on RTGS DCA
- Amend the payment orders queued on RTGS DCA
- Set up and modify the parameters for automated liquidity management tools in RTGS for the RTGS DCA

The scope and functions for the **TIPS GUI** and the **T2S GUI** in terms of liquidity monitoring are defined in the respective service documentation.

#### 3.2.1.2 API ACCESS

*Placeholder*

#### 3.2.1.3 ALERTS AND NOTIFICATIONS

For more concrete and specific monitoring, the user can subscribe for alerts and notifications that the system pushes out to the GUI or in A2A mode when an event takes place. Such triggers can be

- Breaching a defined floor or ceiling amount on an MCA or RTGS DCA (see section [3.2.2.3 FLOOR AND CEILING](#))
- Queued Highly Urgent payments or Urgent payments (see section [3.2.2.5 PAYMENT PRIORITY](#))
- Start of Day, End of Day or other scheduled business events (see section [4.6 SCHEDULE](#))

### 3.2.2 Tool box for managing liquidity

As explained in section [3.1 ACCOUNT STRUCTURE](#), MCA in CLM is the central source of liquidity for the different settlement services. While the credit line assigned to a Party is linked to one of its MCAs, the dedicated settlement services settle on cash-only basis. The following liquidity management tools are implemented in CLM and RTGS. Provided that the communities of TIPS and T2S agree on having the same tools in their systems, the features can be introduced following the change management procedure of the respective service.

The users will have the following tools for managing liquidity on CLM and RTGS.

### 3.2.2.1 IMMEDIATE AND STANDING LIQUIDITY TRANSFER ORDER

The Parties can transfer liquidity either manually (based on immediate liquidity transfers) or automatically (based on regular standing orders or event-based standing orders).

- 1) **Immediate liquidity transfer orders** can be sent in A2A or entered in U2A. They are settled immediately, provided that there is sufficient liquidity on the debited account.
- 2) **Standing liquidity transfer orders** are configured in CRDM in advance and are triggered upon an event. The predefined standing order specifies the amount to be transferred and can, optionally, be limited in time (Valid To).
  - a. Events that can trigger **regular standing orders** are events defined in the daily schedule, e.g. Start of Day.
  - b. Events that trigger **event-based standing orders** are, for example, breaching of predefined floor or ceiling amount, a pending operation on the MCA or a pending Urgent or Highly Urgent payment on the RTGS DCA.

Liquidity transfer orders (LTO) are attempted to settle immediately once submitted or triggered. Liquidity can be transferred between different settlement services (inter-service liquidity transfer) and within a settlement service (intra-service liquidity transfer).

In terms of processing, any liquidity transfer initiated by an ancillary system (i.e. someone who has no view on the account balance) or by the system itself based on a standing order can settle partially, while any immediate liquidity transfer entered by the owner or manager of the account shall settle based on an all-or-nothing principle. In case a LTO initiated by an ancillary system or by a standing order settles partially, no new LTO is generated to settle the remaining part of the initial liquidity transfer order.

The Parties can send immediate LTOs or configure standing LTOs with triggers taking place during the opening time of the respective service (see section [4.6 SCHEDULE](#)).

### 3.2.2.2 AUTOMATIC LIQUIDITY TRANSFER ORDERS

Due to the highest priority given to settlement of CB operations, in case of a lack of payment capacity (i.e. sum of cash and available credit line) on the MCA to settle the CB operation, the system triggers an automatic liquidity transfer and tries to pull the amount of liquidity missing to settle the CB operation from the associated liquidity transfer RTGS DCA (see section [3.3 PRINCIPLES FOR DRAWING OF LIQUIDITY](#)). In case there is not sufficient liquidity on the RTGS DCA, the system settles the automatic LTO partially and generates and queues a LTO for the remaining part. Any additional liquidity that arrives on the RTGS DCA will then automatically be transferred to the MCA until the CB operation is settled.

These automatic liquidity transfers are mandatory and do not require any prior configuration by the participant.

*EXAMPLE: the Central Bank sends a payment order to settle an open market operation with an amount of 90 on the Party's MCA. At that moment, the amount of available liquidity on the MCA (i.e. amount of MCA Operations reservation and the non-reserved amount, incl. credit line) is 40. CLM generates an automatic inter-service LTO for the missing 50 to be transferred from the associated RTGS DCA. On that RTGS DCA, the amount of non-reserved balance is 30, the amount of U-reservation is 10 and HU-reservation is empty. The system taps the liquidity from non-reserved balance (30) and from the U-reservation (10) and transfers the liquidity to the MCA. In addition, it generates a new automatic inter-service LTO for the remaining amount of 10 (i.e. original LTO with 50 minus 30 of non-reserved balance minus 10 of U-reservation already transferred). Any incoming liquidity on the RTGS DCA will be transferred immediately to the MCA until the CB operation settles.*

### 3.2.2.3 FLOOR AND CEILING

For each MCA and RTGS DCA, a Party can define in CRDM a minimum ("floor") and maximum ("ceiling") amount that shall remain on the respective account at any moment in time. When calculating the available liquidity on an MCA, this function does not count the available credit line as part of this amount.

The Party can choose between the following behaviours that the system shall apply in the event the floor or ceiling on an account is breached:

- 1) CLM/RTGS generates a notification that is sent to the Party informing about the floor/ceiling breach (upon which the Party can take action); or
- 2) CLM/RTGS generates automatically an inter-service liquidity transfer to pull cash from the other service (in the event the floor is breached) or push cash to the other service (in the event the ceiling is breached). Such automatic liquidity transfers can only involve the Party's RTGS DCA dedicated for payments (default DCA).

Shall the Party opt for the behaviour 2, it shall also predefine the target amount to be reached if the floor or ceiling is breached.

*EXAMPLE: the Party prefers to keep liquidity on its RTGS DCA in order to ensure as smooth settlement of payments (including payments with no priority/Normal) as possible. He defines a ceiling of 10 and target amount of 8 on his MCA and chooses the behaviour of automatic liquidity transfer. A CB operation settles on MCA and the available liquidity on MCA reaches 12. Upon the settlement CLM checks whether any floor/ceiling is defined for MCA and automatically generates and settles a LTO that transfers an amount of 4 (i.e. 12 on MCA minus 8 as target amount) from MCA to RTGS*

*DCA dedicated for payments.*

#### 3.2.2.4 LIQUIDITY RESERVATION

The Party can reserve liquidity for payments having a defined priority or for a specific business purpose.

- 1) On MCA, there is one type of reservation for all CB operations and cash withdrawals.
- 2) On RTGS DCA, there are two types of reservation
  - a. Urgent-reservation (U-reservation) is for payment orders sent by the Party with the priority Urgent
  - b. Highly Urgent reservation (HU-reservation) is for payment orders sent by the eligible ancillary systems

The Party can allocate liquidity for the reservations by submitting a liquidity reservation order either in U2A or A2A. In such case the system attempts to fill the order immediately and only for that business day. The Party can also configure a Standing Order for reservation for a specific amount and with a specific trigger (e.g. Start of Day). Such reservations are generated automatically upon the trigger on every business day.

In terms of processing, the system checks whether the non-reserved amount of liquidity on that account is sufficient to fulfil the reservation. Where the requested reservation amount exceeds the available liquidity on the account, the reservation remains pending. Any incoming liquidity is then automatically added to the reservation until the requested amount of the reservation is reached and thus the reservation is considered as successfully executed. Each payment drawing on the reservation will reduce the reservation amount accordingly.

There is no automatic re-fill of the reservation during a business day. However, shall the Party modify the reservation amount during the day then the system will align the reserved amount accordingly. In case the original (standing) order for liquidity reservation is not yet completed (i.e. targeted reservation amount reached), then the system stops processing of the original order and processes only the modification request. The Party can

- 1) "Reset" the amount of liquidity to be reserved to zero, upon which the system releases all remaining amount of the reservation for that business day.
- 2) Change the amount on demand during the business day with immediate effect, upon which the system either releases the exceeding amount or attempts to reserve additional liquidity to reach the new target amount.

During the End of Day procedure, all pending liquidity reservation orders are stopped and the remaining reserved amounts are released.

EXAMPLE: The Party has configured a Standing Order to reserve liquidity of 100 for Urgent payments on daily basis at the Start of Day. The system generates successfully the reservation. During the day, the Party has submitted U-payments with a total amount of 80, which have all settled using the U-reservation. Currently, the U-reservation remaining amount is 20 and the treasurer is made aware of a U-payment with an amount of 50 that shall be paid out today. The treasurer modifies the U-reservation amount to 50 and the system attempts immediately to fill the amount by tapping liquidity from non-reserved amount on the RTGS DCA. In case the non-reserved amount is lower than 30 (i.e. target reservation amount 50 minus 20 of the remaining reservation amount), then the system reserves the available liquidity and queues an immediate liquidity reservation order for the remaining part.

### 3.2.2.5 PAYMENT PRIORITY

On RTGS, a payment can either be with priority Highly Urgent (HU), Urgent (U) or Normal (N).

Highly Urgent payments (HU-payments) are settled with utmost priority. This priority class is exclusively allowed for payment orders sent by ancillary systems (incl. CLS). An incoming HU-payment is added to the end of the dedicated queue for HU-payments, which shall all settle before any other payment with lower priority (i.e. U-payment and N-payment) can settle on that RTGS DCA. If the HU-reservation is not sufficient for settlement of an HU-payment, the missing liquidity is tapped from the non-reserved liquidity and, subsequently, from U-reservation on the same RTGS DCA.

Urgent payments (U-payments) can be instructed by Parties in order to give them higher priority compared to their other payments. All pending U-payments shall settle before Normal payments on the same RTGS DCA. If the U-reservation is not sufficient for settlement of a U-payment, the missing liquidity is tapped from the non-reserved liquidity on the same RTGS DCA.

Normal payments (N-payments) are all payment orders sent to an RTGS DCA where no priority is set. N-payments are submitted to settlement when no HU-payment or U-payment is pending. The system aims at settling N-payments as optimally as possible (see section [4.3 LIQUIDITY SAVING MECHANISMS](#)).

### 3.2.2.6 TIMING OF EXECUTION

The Party can determine the execution time of the payment order by defining From Time and/or either Till Time or Reject Time in the message.

- From Time specifies the time only after which a payment order can be submitted to settlement
- Till Time specifies the time when a warning notification shall be triggered, if the payment order has not been settled by that time. When the time is reached and the payment order is not yet settled, then the payment order shall not be rejected and it may still be submitted for settlement beyond this time. If Till Time is specified, then Reject Time cannot be specified.

- Reject Time specifies the time only before which a payment order can be submitted to settlement. As soon as the Reject Time is reached and if the payment order has not been settled, the payment order will be rejected and a settlement failure notification will be sent out. If Reject Time is specified, then Till Time cannot be specified

### 3.2.2.7 QUEUE MANAGEMENT AND AMENDMENT AND CANCELLATION OF PAYMENT ORDERS

Once the Party has submitted a payment order to the system, it is immediately attempted for settlement on the value date provided that there is no further limitations on execution time within the order (see section [3.2.2.6 TIMING OF EXECUTION](#)). In the event the initial settlement attempt was unsuccessful, the payment order is queued for the specific payment priority (see section [3.2.2.5 PAYMENT PRIORITY](#)). At the time the payment order is queued, the Party can take following controls both in U2A and A2A mode:

- Re-order the payment queue by moving one or more payment orders to the top of the queue in which they are held.
- Re-order the payment queue by moving one or more payment orders to the bottom of the queue in which they are held.
- Change of the execution time (i.e. From Time, Till Time and Reject Time) provided it was present before.
- Change the priority of the payment (i.e. move a N-payment to U-payment queue or vice versa; it is not possible to change a payment priority of or to HU-payment).

Furthermore, a Party can cancel a payment order as long as the payment order is not yet in its end state (i.e. settled, rejected or cancelled).

### 3.2.2.8 WHITELIST

*Placeholder*

### 3.2.2.9 LIQUIDITY TRANSFER GROUP

*Placeholder*

## 3.3 PRINCIPLES FOR DRAWING OF LIQUIDITY

The operations on MCA and the payments and transactions on RTGS DCA are processed in predefined order following the FIFO principle. The following table indicates the different liquidity sources and the order in which the different sources will be tapped (1=first liquidity source, 2=second liquidity source, etc.). The order in the column "Business Purpose" indicates the priority of the payment/operation. The table should be read from left to right, e.g. for a credit line decrease (*business purpose*),

- 1) first, the non-reserved part of MCA will be debited;

- 2) if the non-reserved amount on MCA was not sufficient, then, second, the reservation for MCA Operations will be debited;
- 3) if with the previous steps the required amount is not achieved, then, third, the non-reserved part of RTGS DCA is used etc.

Order	Business Purpose	Main Cash Account (MCA)		RTGS Dedicated Cash Account (DCA)		
		MCA Operations	Non-reserved	Highly Urgent (HU)	Urgent (U)	Non-reserved
<b>Main Cash Account</b>						
1	Credit line decrease	2	1	5	4	3
2	Central Bank Operation	1	2	5	4	3
3	Cash Withdrawal	1	2	5	4	3
4	Inter-Service and Intra-Service Liquidity Transfer		1			
<b>RTGS Dedicated Cash Account</b>						
5	Inter-Service and Intra-Service Liquidity Transfer			*)	*)	*)
6	Ancillary System transaction / HU Payment		4**	1	3	2
7	U Payment		3**		1	2
8	N Payment					1

**Table 1: Predefined order of liquidity tapping**

\* subject to the priority of the payment that triggered the automatic liquidity transfer

\*\* subject to prior configuration by the Party

The one-to-one link between MCA and RTGS DCA for such automatic liquidity transfers in both ways must be defined in CRDM.

By default, all MCA operations have a higher priority than payments and transactions on the RTGS DCA. In the event that there is insufficient payment capacity on the MCA to settle a pending operation, CLM triggers an automatic liquidity transfer for the missing amount to transfer liquidity from the RTGS DCA to the MCA (see section [3.2.2.2 AUTOMATIC LIQUIDITY TRANSFER ORDERS](#)).

In all other cases, such automated liquidity transfers are subject to and based on standing LTOs that the participant sets up based on triggers defined either on the MCA or on the RTGS DCA. The automatic transfers of liquidity from the RTGS DCA to the MCA due to queued operations on the MCA are initiated automatically, do not require any prior configuration from the users and cannot be suppressed.



### 3.4 INTERACTION WITH CENTRAL BANK

The MCA is the place where all<sup>7</sup> interaction between the Party and its Central Bank takes place (see section [3.1.1 MAIN CASH ACCOUNT IN CENTRAL LIQUIDITY MANAGEMENT](#)).

In addition, while the T2-T2S Consolidation project is planned to go live in November 2021, the Eurosystem Collateral Management System (ECMS) will go live one year later in November 2022. Thus, the Parties shall keep in mind that during the first year of the future RTGS, the collateral management procedures of local Central Bank collateral systems apply. This document describes only the relevant interaction with ECMS.

#### 3.4.1 Update in credit line

The credit line is the maximum collateralised overdraft position of the balance on the MCA. A Party that is eligible for intraday credit will be provided with a credit line on one and only one of its MCAs. However, liquidity generated by using the credit line can be transferred to and used on any MCA or DCA.

ECMS is the central application that manages the credit line and sends respective orders to T2S (for settlement of collateral) and to CLM (for increasing or decreasing the credit line for operations and payments).

Modifications to the credit line are executed immediately and with highest possible priority. In case the request is to reduce the credit line and it requires a full or partial reimbursement of the intraday credit, the system immediately draws the necessary liquidity from the MCA and from the RTGS DCA non-reserved and reserved pools in a predefined order (see section [3.3 PRINCIPLES FOR DRAWING OF LIQUIDITY](#)). If the combined liquidity on the MCA and the RTGS DCA is insufficient for the reimbursement, any incoming liquidity to either of these accounts is immediately used for the reimbursement as well until the full amount is reimbursed.

#### 3.4.2 Usage of standing facilities

Standing facilities are Central Bank facilities available to counterparties on their own initiative. The Eurosystem offers two overnight standing facilities: the marginal lending on request facility and the deposit facility. Both facilities require the setup of dedicated accounts in CLM. Depending on the local regulation these dedicated accounts may be in the name of the Party or of the Central Bank.

In order to obtain overnight liquidity, the Party shall send a **marginal lending** request to its Central Bank, which will settle the request in CLM.

In the event that the Party's global End of Day balance on all its MCAs and DCAs after the deadline for standing facilities (see section [4.6 SCHEDULE](#)) is negative, the system automatically converts any outstanding amount into an automatic marginal lending.

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<sup>7</sup> Local specificities of some Central Banks might lead to some deviations especially in the beginning.

On the following business day, at the start of the provisioning of the liquidity phase, any amounts received by means of the marginal lending facility are automatically reimbursed and interest is charged.

The **deposit facility** requires the Party to transfer the amount to a dedicated overnight deposit account in CLM. The Party can change the deposited amount by either transferring additional liquidity or activating a reverse transaction until the deadline for standing facilities. The requests are attempted to settle immediately. If there is no sufficient liquidity on MCA, the orders linked to overnight deposits will be queued. The Party can also cancel them as long as they are not settled.

At the start of the next business day, the system automatically returns the deposited amount to the Party's MCA and calculates and settles the interest on the Party's MCA.

### 3.4.3 Central Bank operations

The payment orders linked to CB operations (e.g. cash withdrawals, open market operations, repayment of monetary policy operations and collection of fees) are submitted to the system by Central Banks. Depending on the type of operation, the Central Bank can either send a direct debit or a credit transfer toward the Party's MCA. The counterpart of these payments is a CB account. The payment order may indicate a timing of execution (see section [3.2.2.6 TIMING OF EXECUTION](#)) as well as may be submitted to the system prior to the value date (see section xxx).

The number and organisation of the dedicated accounts for a specific Central Bank operation (e.g. cash withdrawals) depends on the local regulations and/or the business needs of a Party and/or of a Central Bank. Such specificities are not covered by this document.

The Party can set up one type of reservation on MCA, which can be used for all CB operations.

### 3.4.4 Minimum reserve and excess reserve management

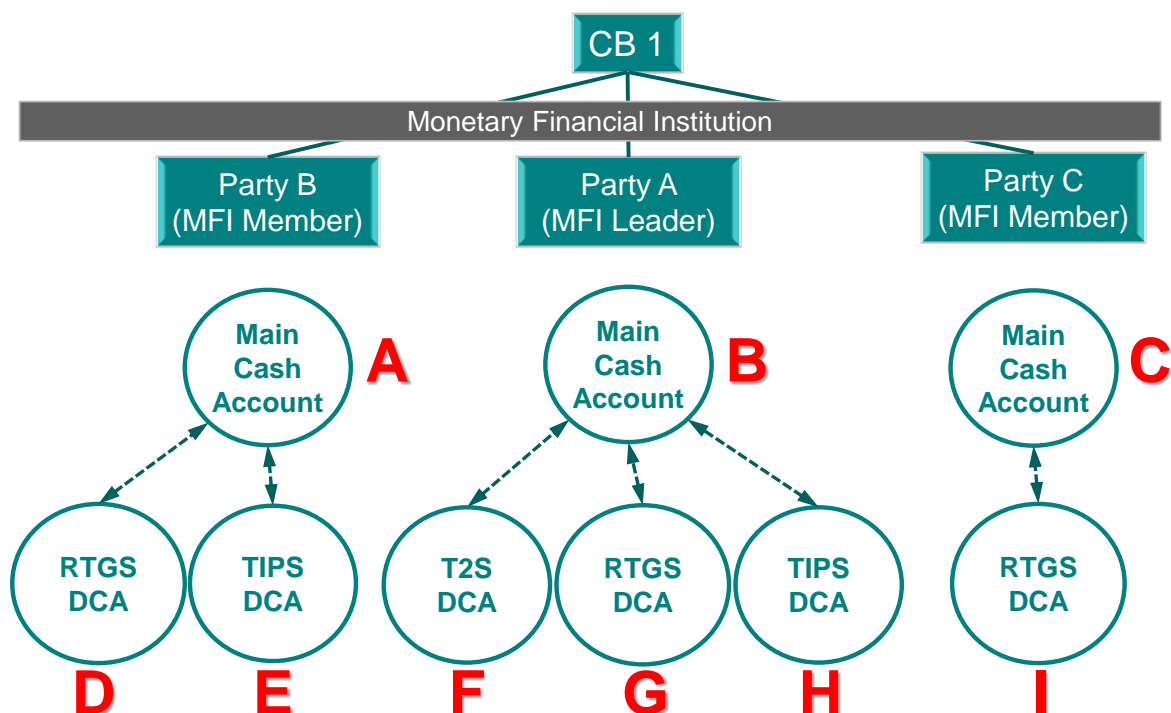
Once all standing facilities are processed, the system verifies the fulfilment of minimum reserves by the Monetary Financial Institutions (MFI).

The minimum reserve calculation of the respective MFI will automatically include the End of Day balances of all MCAs and DCAs of the linked Parties. All Parties belonging to a MFI must also belong to the same Central Bank.

At the End of Day, the system takes a snapshot of all balances in all settlement services (i.e. RTGS, TIPS and T2S) and, thus, there is no requirement for sweeping liquidity to a MCA<sup>8</sup>.

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<sup>8</sup> Currently, the cash sweep at End of Day from T2S toward TARGET2 is mandatory. The future solution facilitates the possibility to make such cash sweep optional. The respective decision remains with the T2S Governance.



Minimum Reserve fulfilment for MFI = Sum of cash balances in A, B, C, D, E, F, G, H and I

Figure 5: Minimum reserve fulfilment calculation

### 3.5 INTERACTION WITH ANCILLARY SYSTEMS

- What shall treasurers keep in mind from liquidity management perspective (e.g. notification rules)
- Operating on RTGS DCA sub-account for AS settlement
- Operating on RTGS DCA for AS settlement

### 3.6 LIQUIDITY MANAGEMENT SERVICES TOWARD OTHER USERS

- Account monitoring and liquidity management across different entities
- Co-management: how to set up the entities/accounts

### 3.7 OTHER ASPECTS

- Generation and subscription for reports required from treasury perspective (e.g. reporting on liquidity usage; from DWH)

## **4 TRANSACTION PROCESSING PERSPECTIVE**

### **4.1 POSSIBLE WAYS FOR BEING REACHABLE IN RTGS SERVICE**

- *Participant*
- *Indirect Participant*
- *Addressable BIC*
- *Multi-addressee*
- *Elaborate on the terms, the differences and relationship of Party, Account Holder and Participant.*

### **4.2 GENERAL PRINCIPLES FOR MESSAGING**

- *Message portfolio*
- *Fully-fledged approach; no coexistence of ISO 20022 and FIN*
- *Message versioning*

### **4.3 LIQUIDITY SAVING MECHANISMS**

- *Liquidity saving mechanisms (entry disposition with offsetting features; comprehensive queue management; settlement of queued payments with highly efficient optimisation algorithm)*

### **4.4 REPORTING**

- *Notifications*
- *Subscription for report from a transaction processing perspective*
- *Data warehouse*

### **4.5 CONTINGENCY MEASURES FOR PARTICIPANTS**

- *Incl. back-up/lump-sum payments*

### **4.6 SCHEDULE**

- *Daily schedule + Calendar: what do I need to keep in mind?*
- *End of Day procedures*

### **4.7 OTHER ASPECTS**

- *Directory services (i.e. T2 Directory, reach tables, etc.)*
- *Billing for usage of services (fees will be defined in pricing guide)*

Warehoused payments

## **5**                    **ANCILLARY SYSTEM PERSPECTIVE**

- *Overview of different AS procedures*
- *Contingency measures for ancillary systems*

## **6 CONNECTIVITY PERSPECTIVE**

### **6.1 GENERAL PRINCIPLES**

- *XML only*
- *V-shape communication flows*
- *Network vendor agnostic*

### **6.2 GENERAL ROLES AND ACCESS RIGHTS / CONCEPTUAL VIEW**

- *Hierarchical structure*
- *Tasks of amin users*
- *Where detailed roles will be defined?*
- *Whether a single certificate to access the services/GUIs?*
- *2-eyes/4-eyes roles*

### **6.3 ACCESS TO EUROSISTEM MARKET INFRASTRUCTURES**

- *Introduction to ESMIG approach*
- *Number of GUIs and main principles*
  - o *No tokens*
  - o *Download functionality*

### **6.4 MIGRATION**

- *Preparatory activities*
- *Big bang implementation and related risk mitigation*