BANQUE CENTRALE DU LUXEMBOURG

EUROSYSTÈME

20 ans

‘Target Consolidation’ project
Information session

19 Sep 2019

Banque Centrale du Luxembourg

AGENDA

AGENDA

08h30 - 09h00 : Registration & coffee

09h00 - 09h30 : Introduction to Target Consolidation

09h30 - 11h00 : Presentation of the new T2 (CLM, RTGS and the Common Components)

11h00 - 11h30 : Coffee Break

11h30 - 12h00 : The Co-management in CLM

12h00 - 13h00 : Project milestones and the readiness framework imposed by ECB

13h00 - 14h00 : Lunch

14h00 - 15h30 : Connectivity aspects - in the presence of SWIFT and SIA COLT

15h30 - 16h00 : Vision 2020 (TIPS, ECMS)

16h00 - 16h30 : End of the Infosession.

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AGENDA

1.	Introduction	*Pierre Thissen & Yves Wagner*
2.	The new T2	*Michael Schoenmakers & Jerome Ramelli*
3.	The co-management	*Alexandre Briand*
4.	Readiness, timeline, testing and migration	*Alexandre Briand*
5.	The Network Service Providers	*SWIFT & SIA-COLT*
6.	TIPS & ECMS	*Pierre Thissen & Annabel Chevalier*

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1. Introduction
2. The new T2
3. The co-management
4. Readiness, timeline, testing and migration
5. The Network Service Providers
6. TIPS & ECMS

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1. Introduction
VISION 2020

Target Consolidation is part of the wider Vision 2020 initiative whereby the Eurosystem initiated three distinct projects pursuing specific objectives:

TIPS (Target Instant Payments Settlement)	**TARGET Consolidation**	**ECMS** (Eurosystem Collateral Management System)
• **November 2018**	• **November 2021**	• **November 2022**
• New market service giving commercial banks the means to offer instant payments to their clients across the Eurozone markets	• Replacement of the 'Target2' platform • New 'Real Time Gross Settlement' (RTGS) payment system • New tool to centralize the liquidity management (CLM) across the Target Services (T2S, TIPS and the new RTGS)	• New collateral management system for the Eurosystem credit activities

1. Introduction
What is TARGET consolidation?

The Eurosystem has launched a project to consolidate TARGET2 and T2S, in terms of both technical and functional aspects.

Objective: to replace the existing TARGET2 infrastructure with a new real-time gross settlement (RTGS) system complemented by a new Central Liquidity Management (CLM) system that optimises liquidity management across all TARGET Services.

November 2021: Launch of the new consolidated platform

https://www.ecb.europa.eu/paym/target/consolidation/html/index.en.html

1. Introduction
Key benefits of TARGET consolidation

- ✓ **Harmonized processes across ESCB countries**
  standardization of the Target operations tools and processes across Europe

- ✓ **Centralized liquidity management**
  via CLM, 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

- ✓ **Unique interface to access all TARGET Services**
  new single gateway making it possible to operate the Target services through ISO 20022 compliant messages (or manually through the graphical user interfaces)

- ✓ **Common reference data management**
  reduces the effort of creating and maintaining multiple copies of reference data

- ✓ **New data warehouse**
  allows participants to access historic information across T2 (i.e. RTGS and CLM) and T2S

- ✓ **Extended opening hours for payments**
  allows participants active around the world to better service customers in different time zones for their euro settlement

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The new T2-RTGS
What will change?

To the largest extent, the legal context of the future T2 will rely on the existing legal framework.

Most of the business functions offered by the TARGET2/SSP will be continued, but will be serviced by a new infrastructure that will require significant adaptations to the existing operating models

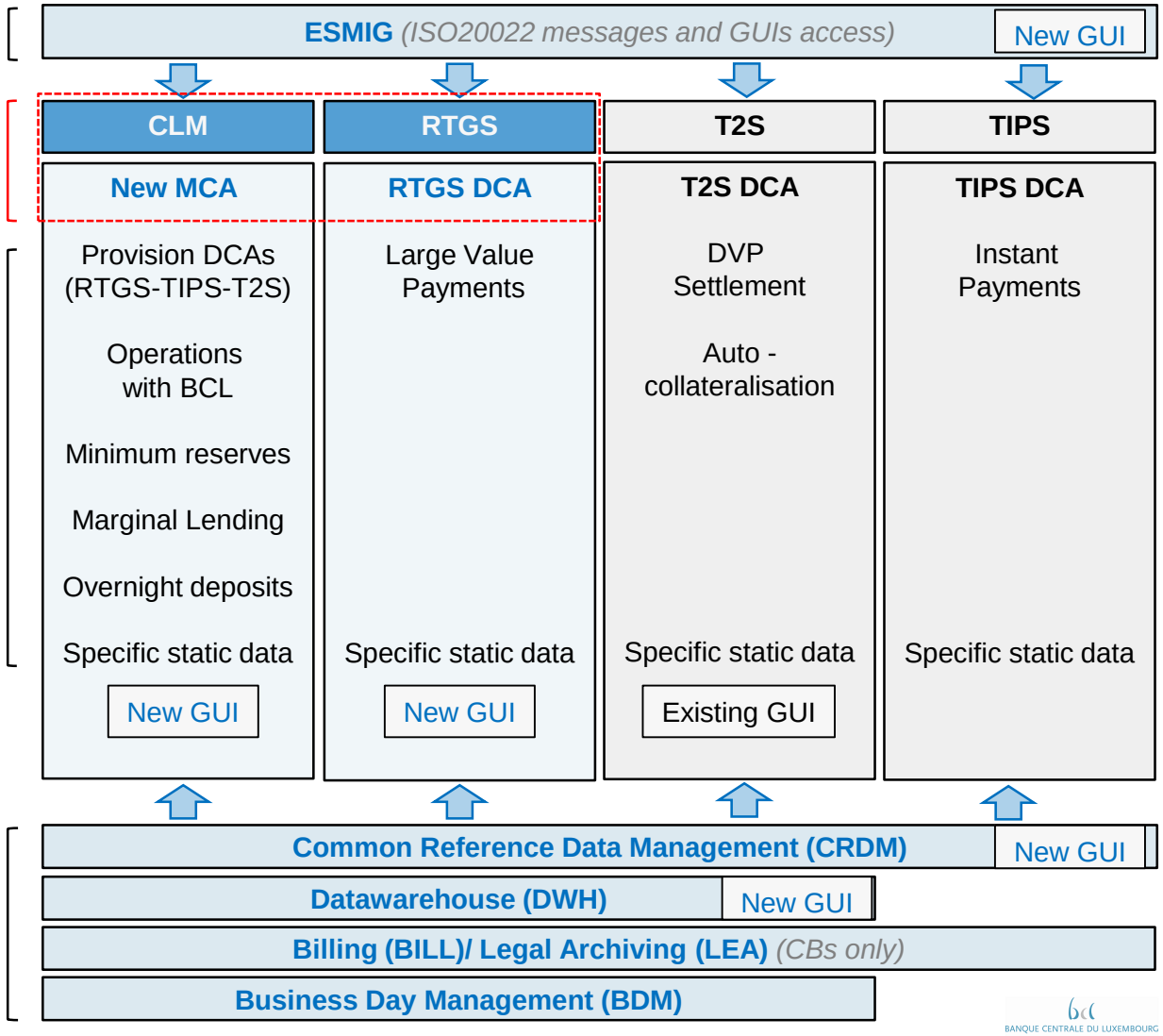
target2	target services | T2
➢ Access to Target2 via SWIFT	➢ Access to T2 and to other Target Services (TIPS, T2S**, ECMS**) via SWIFT or SIA COLT
➢ ISO15022	➢ ISO20022
➢ 1 core system (SSP)	➢ 2 core systems (CLM & RTGS) plus common components
➢ 1 Target2 account *	➢ 2 T2 accounts : CLM Main Cash Account & RTGS Dedicated Cash Account
➢ 1 GUI (ICM)	➢ Multiple Graphical User Interfaces
➢ Central Bank Operations (*e.g. minimum reserves, standing facilities*) in Target2 and/or in local central banks systems	➢ Central Bank Operations in CLM

*in some markets: also HAM accounts.

** As from 2022

1. Introduction
Overview of the future TARGET SERVICES

New gateway for all Target Services



Note: GUI = Graphical User Interface

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   - The common components
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   - RTGS (Real Time Gross Settlement)
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2. The new T2: COMMON COMPONENTS
System specialization

Target Consolidation categorizes the participants activities and assigns them to a specialized system or component:

✓ Exchange instructions ✓ Open a GUI	ESMIG	**COMMON COMPONENTS**
✓ Manage static data and users	CRDM	
✓ Access historic data	DWH & LEA	
✓ Invoice Target Services	BILL	
✓ Run business day	BDM	
✓ Manage Liquidity ✓ Central Banks Operations (CBO)	CLM	**CORE SYSTEMS**
✓ Settle Target payments	RTGS	

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2. The new T2 – COMMON COMPONENTS
ESMIG, the Eurosystem Single Market Gateway

ESMIG will be the new gateway to access any Target Service (T2, TIPS, ECMS & T2S later on).

ESMIG guidelines:

- Needed for both A2A & U2A* access
- Enabled by Network Services Providers (SWIFT and SIA COLT)
- ISO20022 messages only
- From 'Y copy' to 'V shape' model
- Performs users authentication

Securing a connection to ESMIG is a mandatory pre-requisite to access the new T2.
Any entity requiring an access to T2 shall consider the following steps:

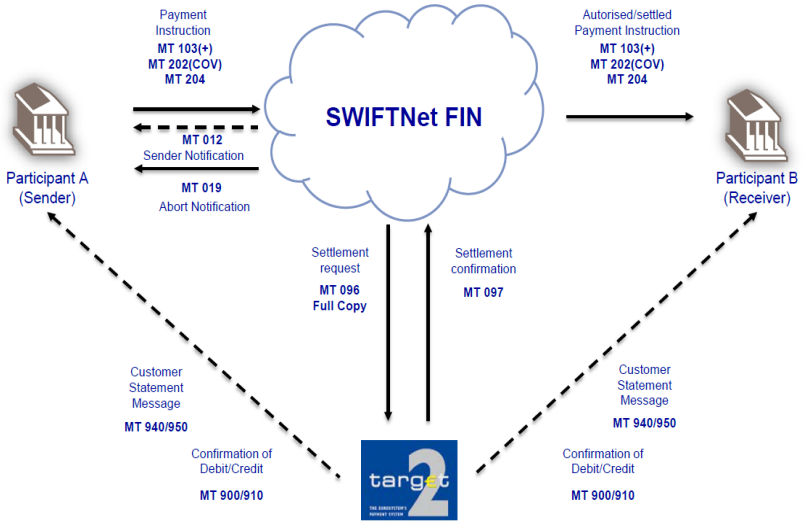
- Contact SWIFT and/or SIA COLT
- For A2A usage, prepare ISO20022 conversion:
  i- check T2 MyStandards,
  ii- promote changes in your infrastructure,
  iii- test your new messages via the MyStandards Readiness tool **

** Application To Application = STP mode vs. User to Application = usage of the Graphical User Interface*
*** https://www.ecb.europa.eu/paym/pdf/consultations/2019-07-05_MyStandards_Readiness_Portals.pdf*

2. The new T2 – COMMON COMPONENTS
ESMIG, the Eurosystem Single Market Gateway

Y-copy model:

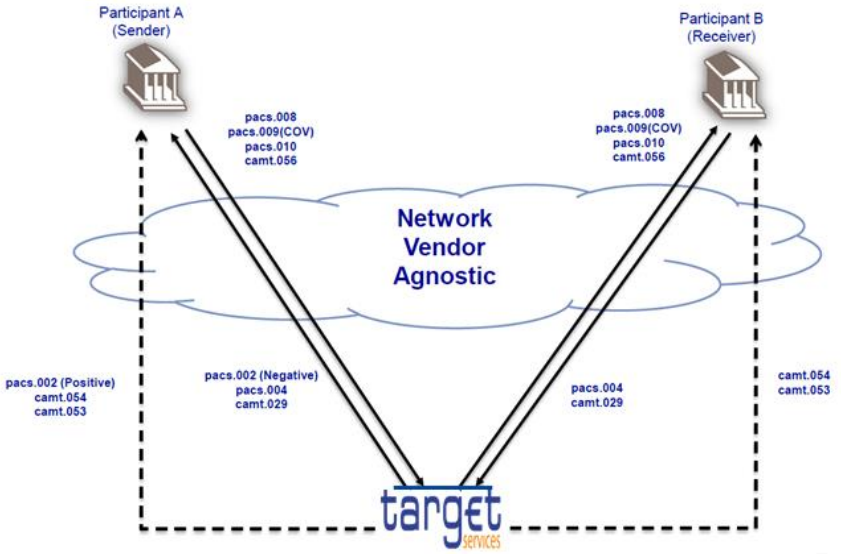
the sending participant addresses the receiving participant, SWIFT intercepts the communication, provides a (partial) copy of the message to TARGET2 and only after confirmation of TARGET2 settlement, the original message is forwarded to the recipient.



V-shape model:

each participant communicates with the central platform and the central platform provides all relevant information to each participant.

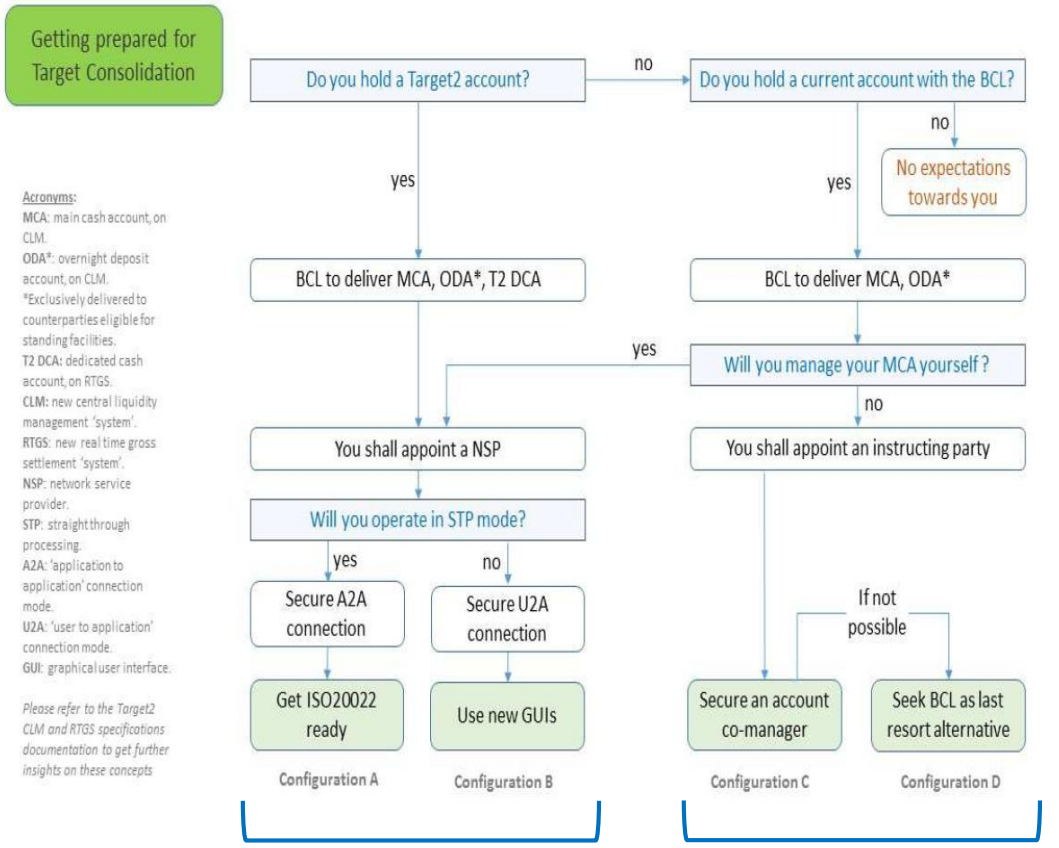
This model allows participants to have different network service providers.



2. The new T2 – COMMON COMPONENTS
ESMIG, the Eurosystem Single Market Gateway

In its earlier communications, the BCL envisaged four options to operate T2 accounts:

Two options do not involve a NSP / an ESMIG connection:



- For RTGS Direct participants
- For other entities

~~- For RTGS Direct participants~~
- For other entities

A. Management via ISO20022 messages

B. Management via the CLM GUI

C. Delegation of the account management to a « co-manager »

D. Delegation of the account management to the BCL

Options C and D are not appropriate for RTGS Direct participants that need an ESMIG access to instruct RTGS payments

2. The new T2 – COMMON COMPONENTS
CRDM - principles

The 'Common Reference Data Management' component is used to configure, maintain and query a series of static data.

CRDM supports data made available to several Target Services (T2,T2S, TIPS), preventing redundant implementation of data management functionality in multiple services.

CRDM automatically propagates to each Target Service the data relevant for its specific needs.

CRDM can be operated in both:

- A2A mode, by sending/receiving ISO20022 messages,
- U2A mode, by using a specific CRDM Graphical User Interface,

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2. The new T2 - RTGS
CRDM - Access rights

The participants, and their users, accesses will be defined in CRDM, in three steps:

1st Accounts holders send REGISTRATION FORMS to their Central Bank

Central Banks set up and maintain static data in the new T2 for their community.

✓ 2nd Central Banks set up Static Data:

Party *(i.e. legal entity interacting with a Target Service)*

Accounts *(unique across all Target Services)*

Administrators Users *(i.e. users acting as administrator within each participant)*

✓ 3rd Bank Administrators set up Static Data

Certificates *(delivered by the NSP)*

Users

Link users and certificates

Grants appropriate privileges to the users

2. The new T2 – COMMON COMPONENTS
Datawarehouse, Billing and Legal Archiving

Datawarehouse (DWH)

- ✓ The DWH component allows participants to retrieve 'historical information'
- ✓ Transactions having reached a final state are stored in DWH where they are accessible as from next business day.

Legal Archiving (LEA)

- ✓ Stores information subject to legal archiving requirements (incoming/outgoing business transactions from/to participants)
- ✓ 10 years retention period
- ✓ Only available to Central Banks

Billing (BILL)

- ✓ Calculates fees incurred by the utilization of the Target Services
- ✓ Prepares invoices templates
- ✓ Generates payments instructions
- ✓ Only available to Central Banks but will impact participants: new invoices layout, new payment instructions (pacs.010 on MCA)

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2. The new T2 – COMMON COMPONENTS
Business day management

Technical component setting the pace of the Target Services processes (CLM, RTGS, T2S).

	CLM	RTGS	CRDM/DWH
Change of business day	18:45		
Start of Day procedures	18:45-19:00	18:45-19:30	18:45-19:00
Availability for users until the maintenance window	19:00-00:30 *(no LTOs allowed between 19:00-19:30)*	19:30-00:30 *(only for settlement of AS transactions and LTOs)*	19:00-00:30
Maintenance window[21]	00:30-02:30		
Availability for users after the maintenance window	02:30-18:00	02:30-03:00 *(only for maintenance of warehoused payments)*	02:30-18:00
		03:00-18:00 *(continuous processing of payment orders, AS transactions and LTOs)*	
Cut-off for Customer Payments	NA	17:00	NA
Cut-off for Interbank Payments / CB Operations	18:00	18:00	NA
End of Day procedures	18:00-18:45		
Cut-off for Standing Facilities	18:15 *(15 min after the start of End of Day procedures; + 15 min on the last business day of the reserve maintenance period)*	NA	NA

Visible impact for the participants: revised T2 opening hours *

BCL support hours unchanged: from 06:30a.m. to 07:00 pm

** As per the latest published information*

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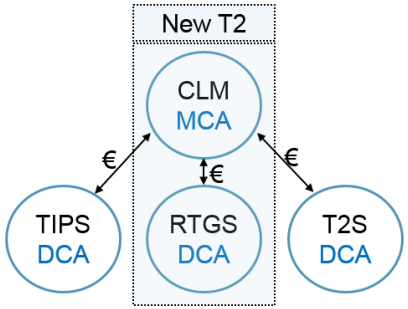
2. The new T2 - CLM
New account structure: two key accounts

T2 participants will use two accounts types*:

- ✓ A CLM Main Cash Account (MCA) for liquidity management and '*central bank operations*'
- ✓ A RTGS Dedicated Cash Account (DCA) for payments

Any DCA must be linked to an MCA, which will be its main source of funding .



<u>The current Target2 direct participants will hold both a CLM MCA **and** a RTGS DCA.</u>
The other entities will only hold a MCA.

** Parties eligible to monetary policy operations will additionally hold a Marginal Lending Account and an Overnight Deposit Account (see next slides)*

2. The new T2 - CLM
New account structure: MCA vs. DCA

	MCA	RTGS DCA
Holders	- All Luxembourg Banking institutions	- Entities with a 'Target2 Direct Participants' status
Number	- At least one MCA is mandatory	- At least one DCA if 'Target2 Direct Participants'
MCA-DCA link	- DCA must be linked to an MCA - This MCA can belong to the DCA holder or to another entity - DCA and MCA can be in different Central Banks	
Usage	- Liquidity transfers to/from DCAs - Central Banks Operations (CBO) - No payments between participants (however liquidity transfers between MCAs possible – see LT groups)	- Settlement of real-time payments - Ancillary Systems activities
Credit line	- Assigned only to one MCA (even if the Party has several MCAs)	- N/A
Balances	- Goes negative in case of intraday credit	- Cannot be negative - Remain on the DCAs at change of day
Identification	Each account (DCA & MCA) is identified by: • a BIC11 (must be unique in the respective settlement service) • an account ID (must be unique across all settlement services)	

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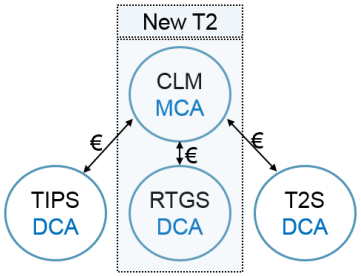
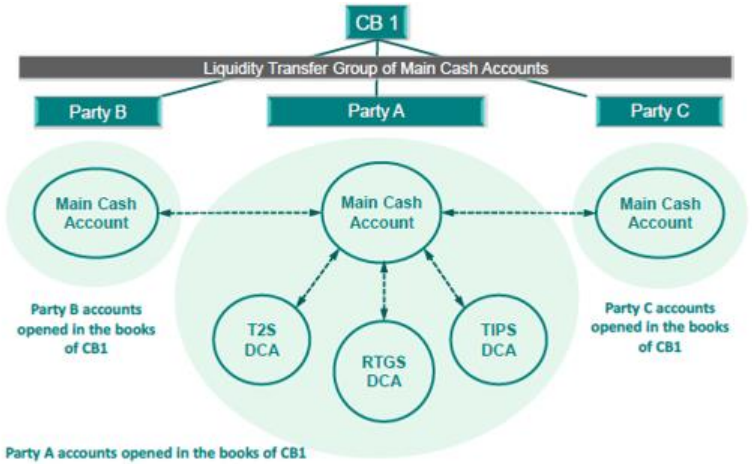
2. The new T2 - CLM

New account structure: accounts set up (e.g.)

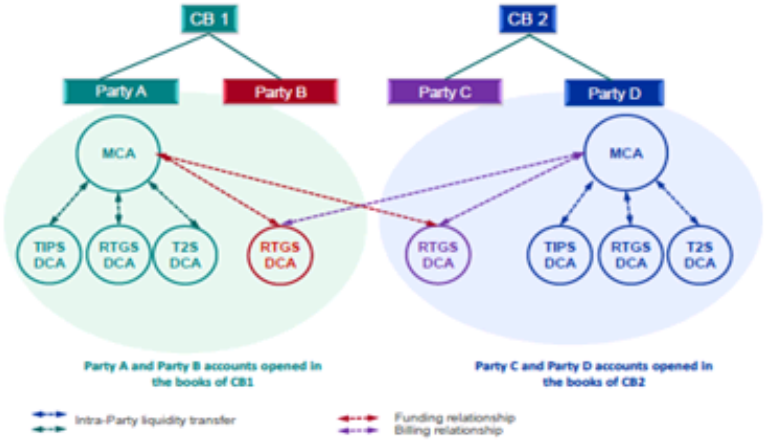
MCA Standard configuration



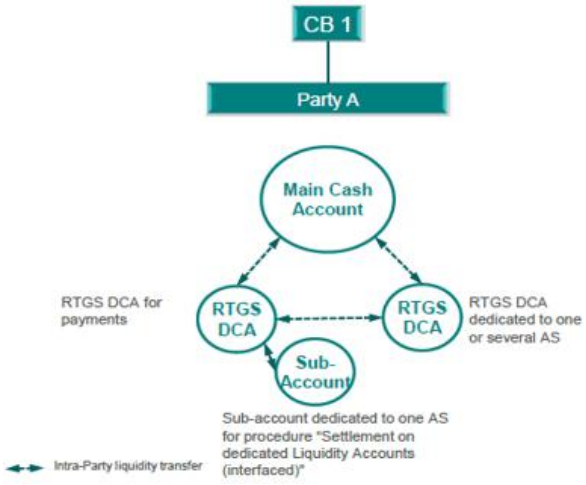
MCA Liquidity Transfer Group



MCA Cross border configuration



Multiple DCAs configuration



Note - another configuration type will be depicted in the Co-management part

2. The new T2 - CLM
Overview of liquidity management aspects

Liquidity management tools

1. Liquidity Transfer
2. Liquidity Transfer Group
3. Cash Rebalancing
4. Liquidity Reservation

Liquidity monitoring tools

1. Graphical User Interface
2. Alerts and Notifications
3. Reports and Queries
4. Account Monitoring Group

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2. The new T2 - CLM
Liquidity management tools

1 - Liquidity transfer

- Participants can have liquidity transferred:

  - ✓ **Immediately** - immediate liquidity transfers sent in A2A or entered manually via the GUI

  - ✓ **Automatically** - preconfigured standing order liquidity transfers triggered by events, or rule-based liquidity transfers triggered by conditions (floor/ceiling breaching…)

  - ✓ **Inter-service** or **Intra-service** - depending on the rules and conditions of each specific settlement service *(note: intra service LT restricted in CLM)*

- For **central bank operations** the system additionally triggers automatic liquidity transfers:

  - ✓ in case of a lack of payment capacity (credit line included) on the MCA to settle a central bank operation, an automated liquidity transfer is triggered from the default RTGS DCA* to the MCA. *(*N/A for TIPS/T2S DCAs)*

  - ✓ This is a mandatory process, i.e. participants do not need to make any configuration and cannot opt out.

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2 - Liquidity Transfer Group

Participants cannot instruct CLM intra service liquidity transfers (i.e. MCA to MCA)

unless the MCAs belong to the same Liquidity Transfer Group.

The configuration of a liquidity transfer group is:

- optional
- made by Central Banks upon request
- possible on a cross – border basis

3 - Cash Rebalancing

Participants can define in CRDM **floors** and **ceilings** amounts.

Two system behaviors can be defined:

- Breach notification
- Automatic inter-services liquidity transfer to bring back / push out additional liquidity on / to the MCA to re-install the predefined targeted amount.

4 - Liquidity reservation

Participants can reserve liquidity on the MCA for central bank operations.

Reservations can be:

- Maintained using A2A or U2A
- Booked with immediate effect (current reservation), or
- Configured as a Standing Order Reservation (set up in CRDM), valid at start of day.

2. The new T2 - CLM
Liquidity monitoring tools

1 - Graphical User Interface (GUI)

A GUI allows participants to access the Target balances information in U2A mode:

- In CLM GUI: participants can see information on MCAs as well as on the DCAs linked to its Party (its own accounts or the accounts it has been granted access to)
- The RTGS/TIPS/T2S GUIs show information on the participant's accounts in this service only.

2 - Alerts and Notifications

Participants can subscribe to alerts and notifications

- Either displayed on a GUI or sent in A2A mode
- Event based (e.g. floor / ceiling) or at a specific schedule (Start of Day, End of Day...)

3 - Reports and Queries

- A report is automatically generated at a pre-defined time, upon subscription by the participant. Participants can subscribe to the End of Day statement of account (camt.053)
- A query is a specific demand made by the participant in A2A mode or in the GUI.

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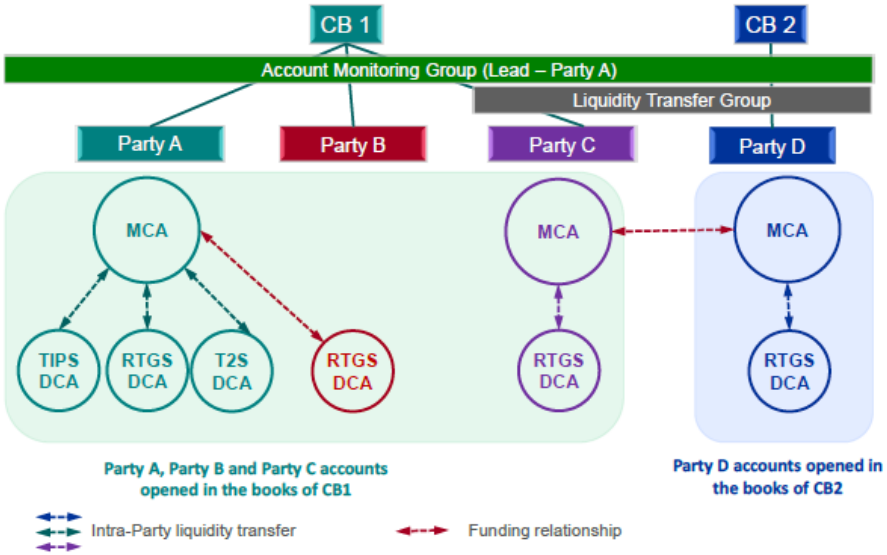
4 - Account Monitoring Group

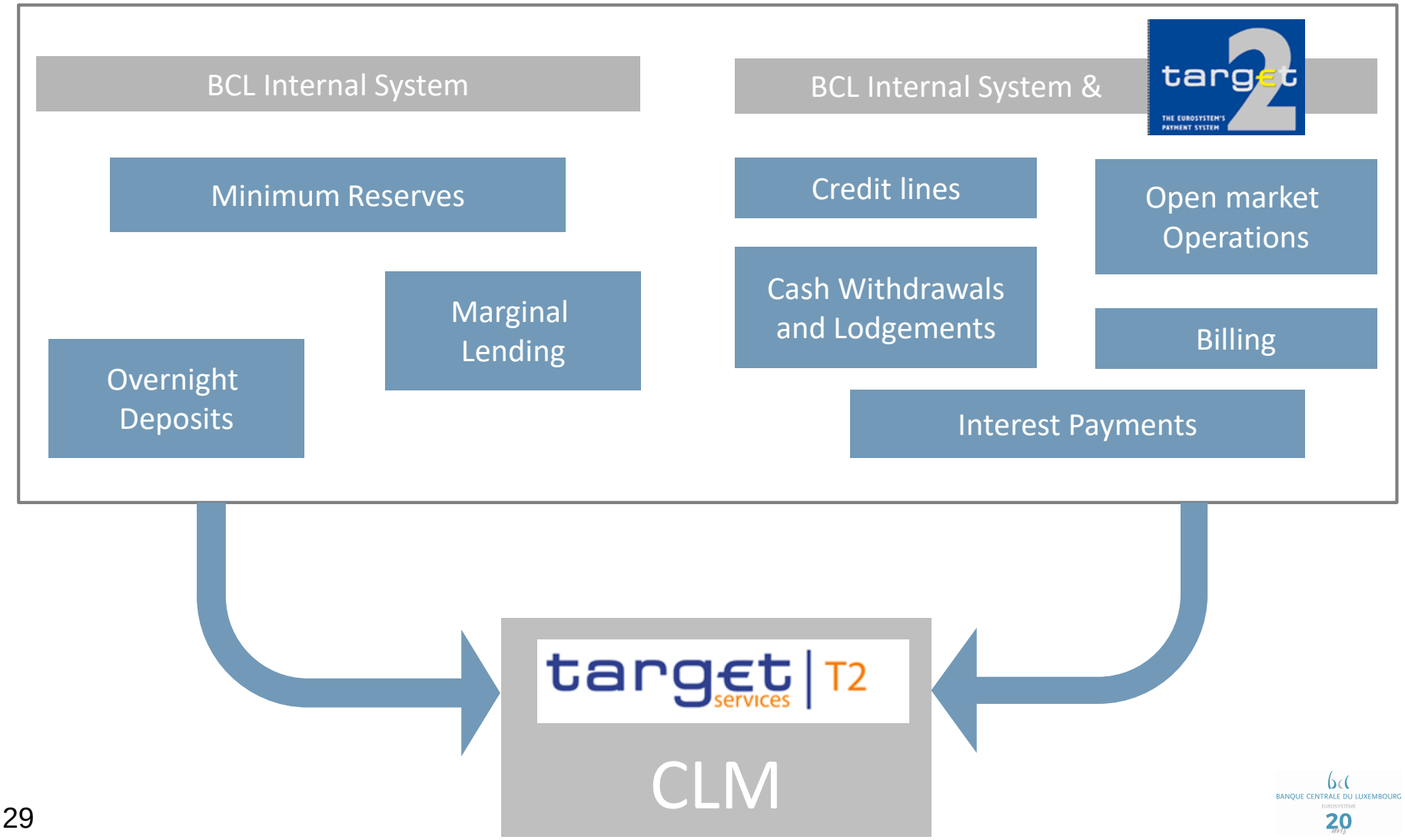
Participants may configure an *Account Monitoring Group* to monitor the liquidity outstanding on a set of grouped accounts, which can be:

- its MCAs and RTGS/TIPS/T2S DCAs
- the MCAs/ DCAs of other Parties (if access rights granted)
- accounts belonging to multiple central banks

This is purely for monitoring purposes (no processing of payments or LTs)



2. The new T2 - CLM
Overview on Central Bank Operations (CBO)



2. The new T2 - CLM
CBO - Mandatory Minimum Reserves

TODAY: BCL Internal System	NOV 2021: CLM
Minimum reserve constitution Balances transferred from current account (041/042) to reserve account (030): • Automatically at EOD • On demand before or after EOD	**Minimum reserve constitution** No balances transfer anymore, aggregation of all End of Day balances (based on CRDM set up): • MCA, RTGS DCA, T2S DCA, TIPS DCA
Interest payment • Debit/credit of T2 account (MT204/MT202)	**Interest payment** • Debit /credit of MCA (system triggered payment order, confirmed via camt.054)
Query fulfillment of reserve • Periodically made by BCL upon request	**Query fulfillment of reserve** • Self monitoring in CLM ('*Minimum reserve fulfilment'* query in A2A and U2A)

2. The new T2 -CLM
CBO - Overnight Deposit (OD)

TODAY: BCL Internal System	NOV 2021: CLM
OD Constitution Upon c/p request (phone call / MT320 to BCL): • BCL sets up deposit contract, liquidity transferred from current account 041/042 to a technical deposit account	**OD Constitution** Initiated by c/p directly in CLM: • Liquidity transfer order (LTO) (camt.050) Flow: from MCA to ODA*
OD Reimbursement • Deposited balances return on current account 041/042	**OD Reimbursement** • Automatic flow, from ODA to MCA (system initiated LTO, confirmed via camt.054)
Interest calculation • Debit/credit on T2 account (MT204/MT202)	**Interest calculation** • Debit/credit on MCA (system triggered payment order, confirmed via camt.054)

* Overnight Deposit Account

2. The new T2 - CLM
CBO -Marginal Lending on request (MLOR)

TODAY: BCL Internal System

MLOR Opening

C/p requests MLOR to BCL (via MT202)

- BCL books ML in its systems (from current account 041/042 to reserve account 030*) – if enough collateral

MLOR Reimbursement

- Automatic reverse transaction (from reserve account 030 to current account 041/042)

Interest payment

- Debit of T2 account (MT204)

*MLOR today makes sense in the context of minimum reserve

NOV 2021: CLM

MLOR Opening

C/p requests MLOR to BCL (communication channel to be confirmed)

- BCL books ML in CLM (Flow: from MLA* to MCA)

MLOR Reimbursement

- Automatic flow: from MCA to MLA (system initiated LTO, confirmed via camt.054)

Interest payment

- Debit on MCA (system initiated payment order, confirmed via camt.054)

* Marginal Lending Account

2. The new T2 - CLM
CBO - Automatic Marginal Lending (AML)

TODAY: BCL Internal System	NOV 2021: CLM
AML Opening Automatic process • Negative Target 2 balances at EOD* are swept in the BCL's internal system (on current account 041/042)	**AML Opening** Automatic process • If aggregated balance of all accounts is negative at EOD, CLM creates payment order (Flow: from MLA to MCA)
AML Reimbursement • AML in BCL internal system re-transformed to Target 2 intraday credit	**AML Reimbursement** • Automatic flow: from MCA to MLA (system initiated payment order, confirmed via camt.054)
Interest payment • Debit of T2 account (MT204)	**Interest payment** • Debit on MCA (system initiated payment order, confirmed via camt.054)

*before EOD the negative balance constitutes intraday credit

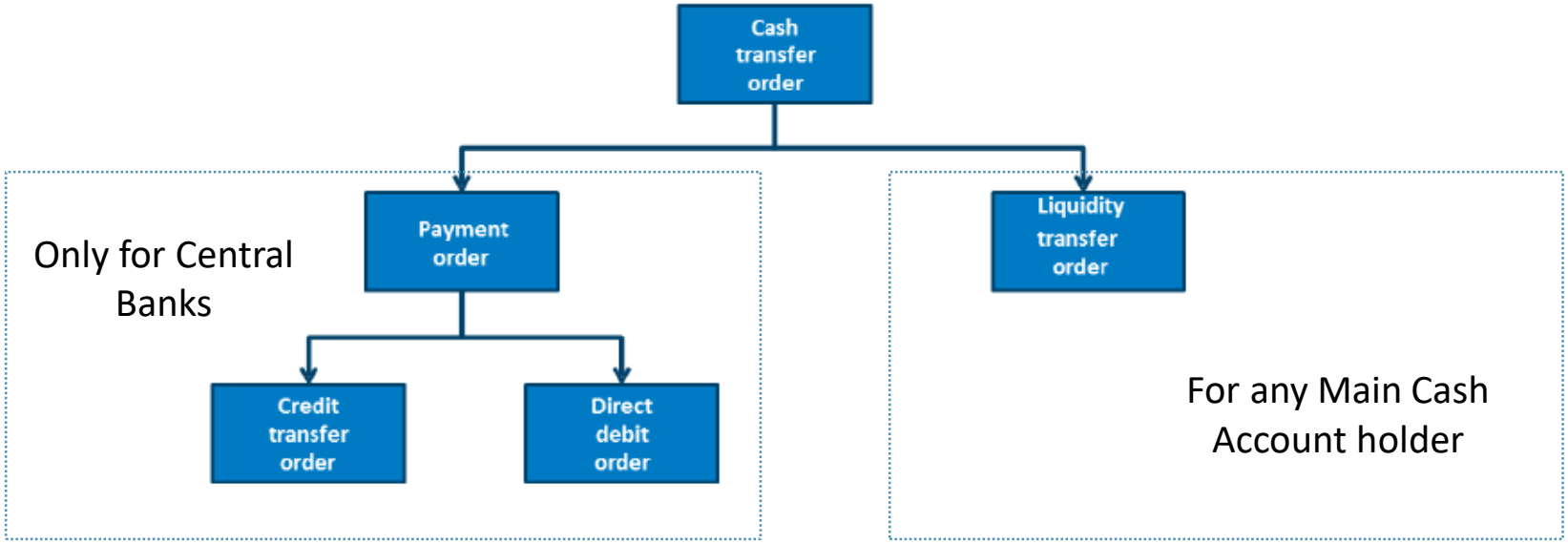
* Marginal Lending Account

2. The new T2 - CLM
Other CBOs

TODAY: BCL Internal System	NOV 2021: CLM
Credit line	**Credit line**
Provided on the Target 2 account	Provided on the MCA
Open Market Operations	**Open Market Operations**
Initiated in BCL internal system Settlement of flows in Target 2 account	Initiated in BCL internal system Settlement of flows in MCA
Cash withdrawals and lodgements	**Cash withdrawals and lodgements**
Settlement of flows on Target 2 accounts	Settlement of flows in MCA *(detailed process still under discussion)*
Billing	**Billing**
Debit of BCL invoices on Target 2 account	Debit of BCL invoices on MCA (pacs.010)

2. The new T2 - CLM
Cash flows – the CLM cash transfers

CLM supports three types of cash transfers orders



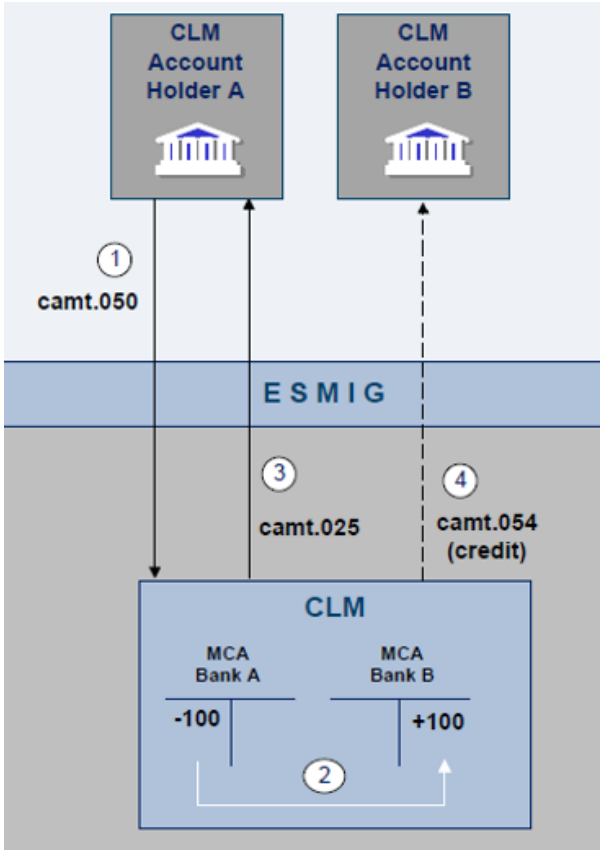
Cash transfer order	Message Identifier	Message Name
Credit transfer order for an interbank payment	pacs.009 [626]	FinancialInstitutionCreditTransfer [626]
Direct debit order for an interbank payment	pacs.010 [630]	FinancialInstitutionDirectDebit [630]
Liquidity transfer order	camt.050 [496]	LiquidityCreditTransfer [496]

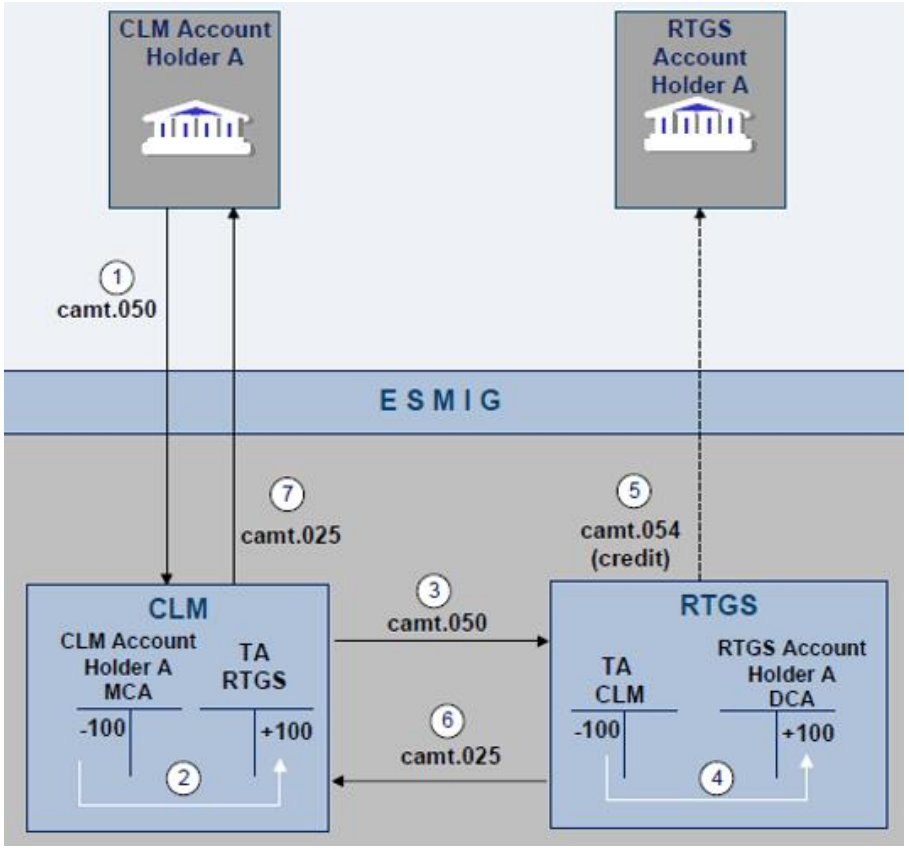
2. The new T2 - CLM
Cash flows illustration - immediate liquidity transfer

Immediate Intra-Service* Liquidity Transfer

Immediate Inter-Service Liquidity Transfer

Liquidity transfer order: camt.050





** Only between MCAs of a same Liquidity Transfer Group*

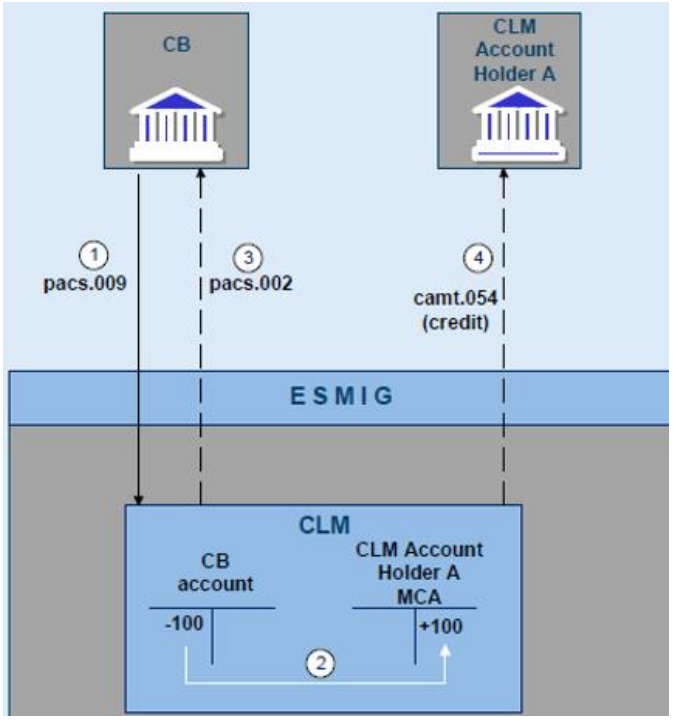
Mandatory message
Optional message
Booking transaction

2. The new T2 - CLM
Cash flows illustration - payment instructed by Central Bank

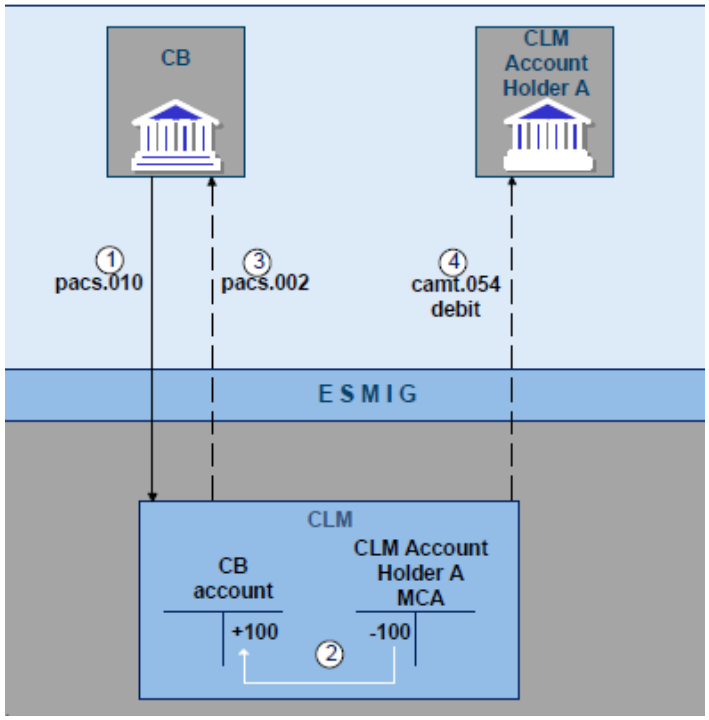
CBs may additionally send credit / debit transfers orders to CLM.

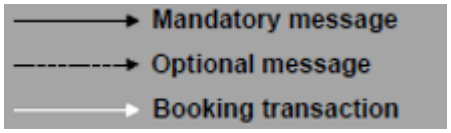
! Participants do not have the possibility to use these messages !

Credit transfer order: pacs.009

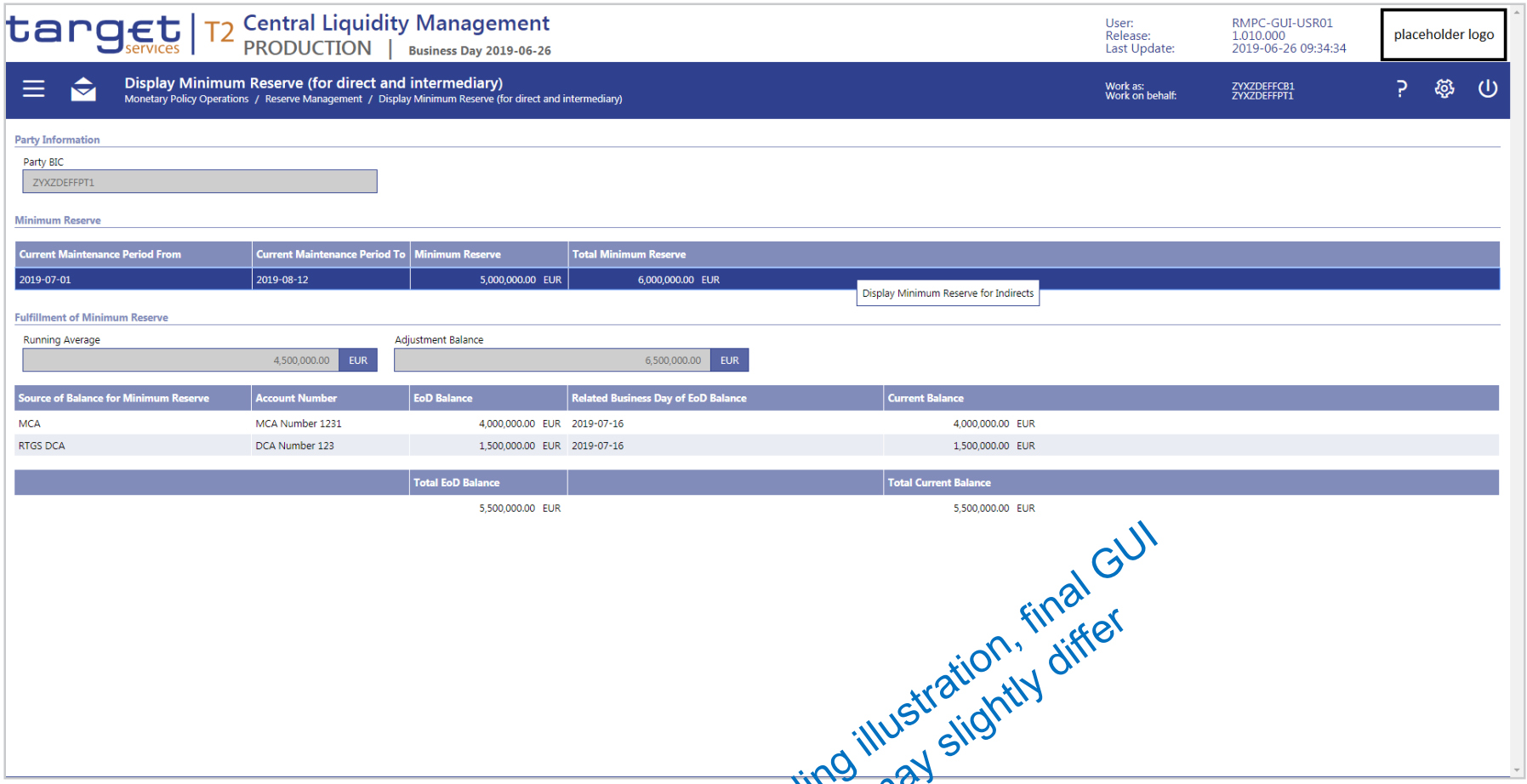


Direct debit order: pacs.010





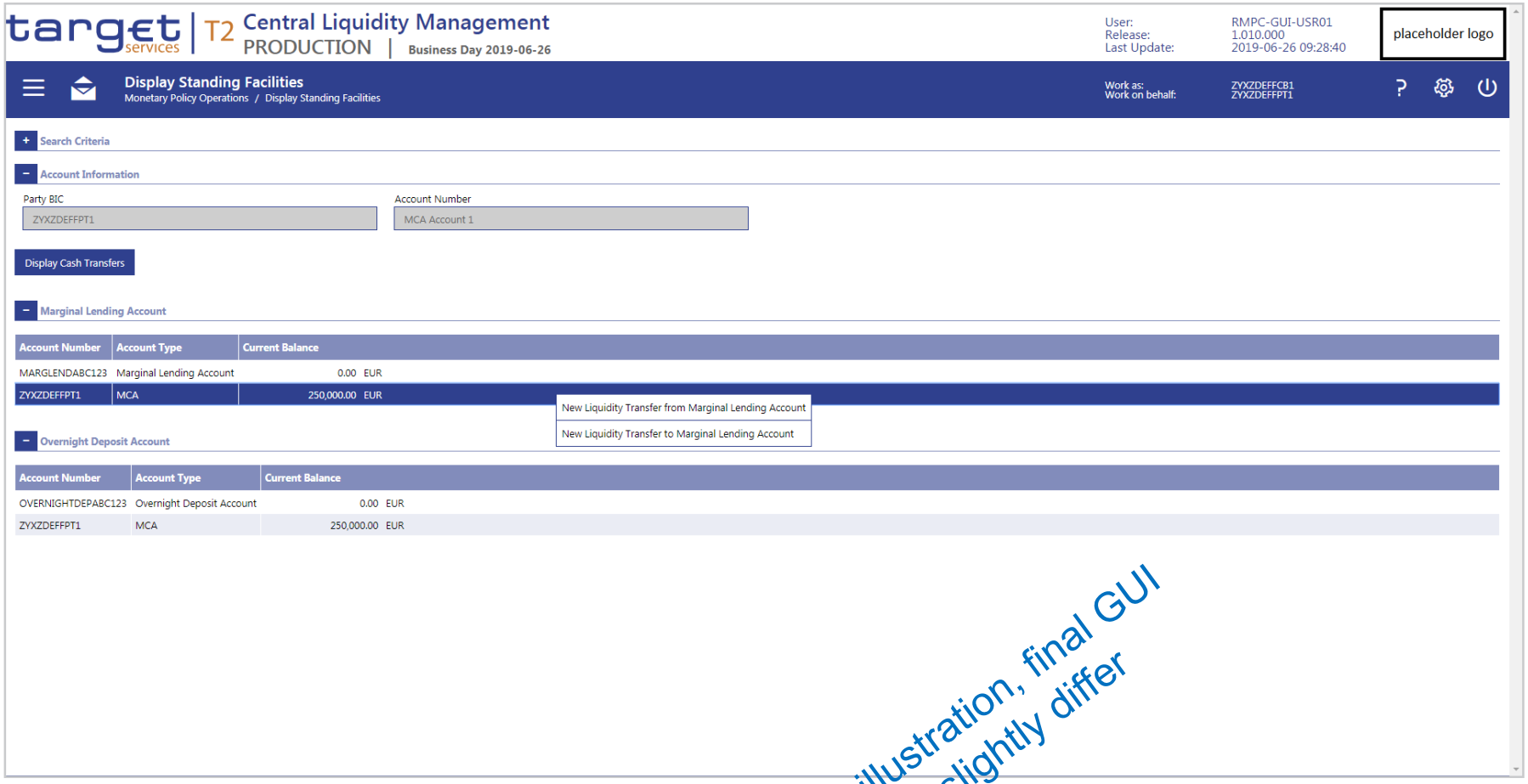
2. The new T2 - CLM
GUI illustration - browse minimum reserves



Non binding illustration, final GUI details may slightly differ

Note: this screen requires Central Bank privileges

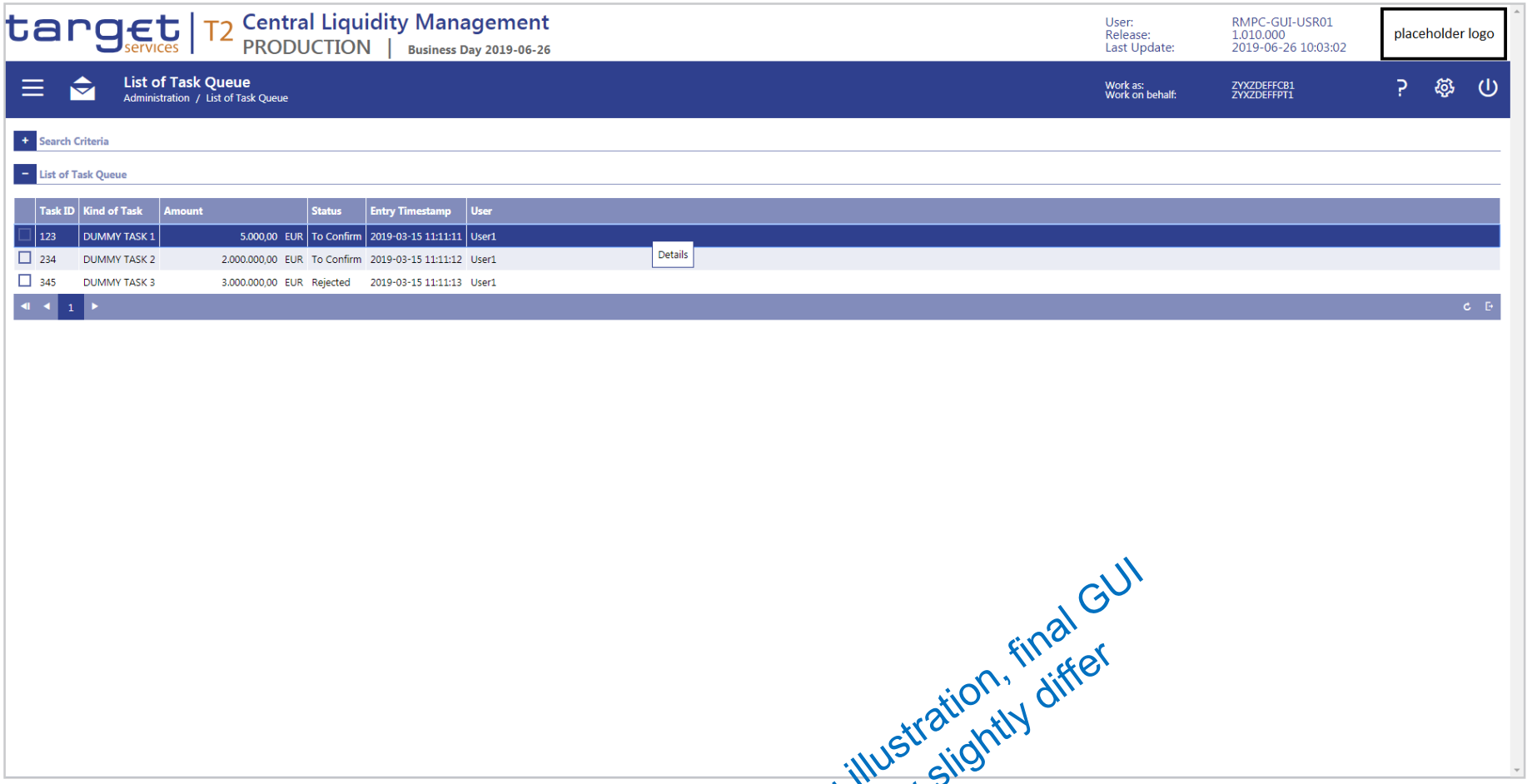
2. The new T2 - CLM
GUI illustration - browse standing facilities



Note: this screen requires Central Bank privileges

Non binding illustration, final GUI details may slightly differ

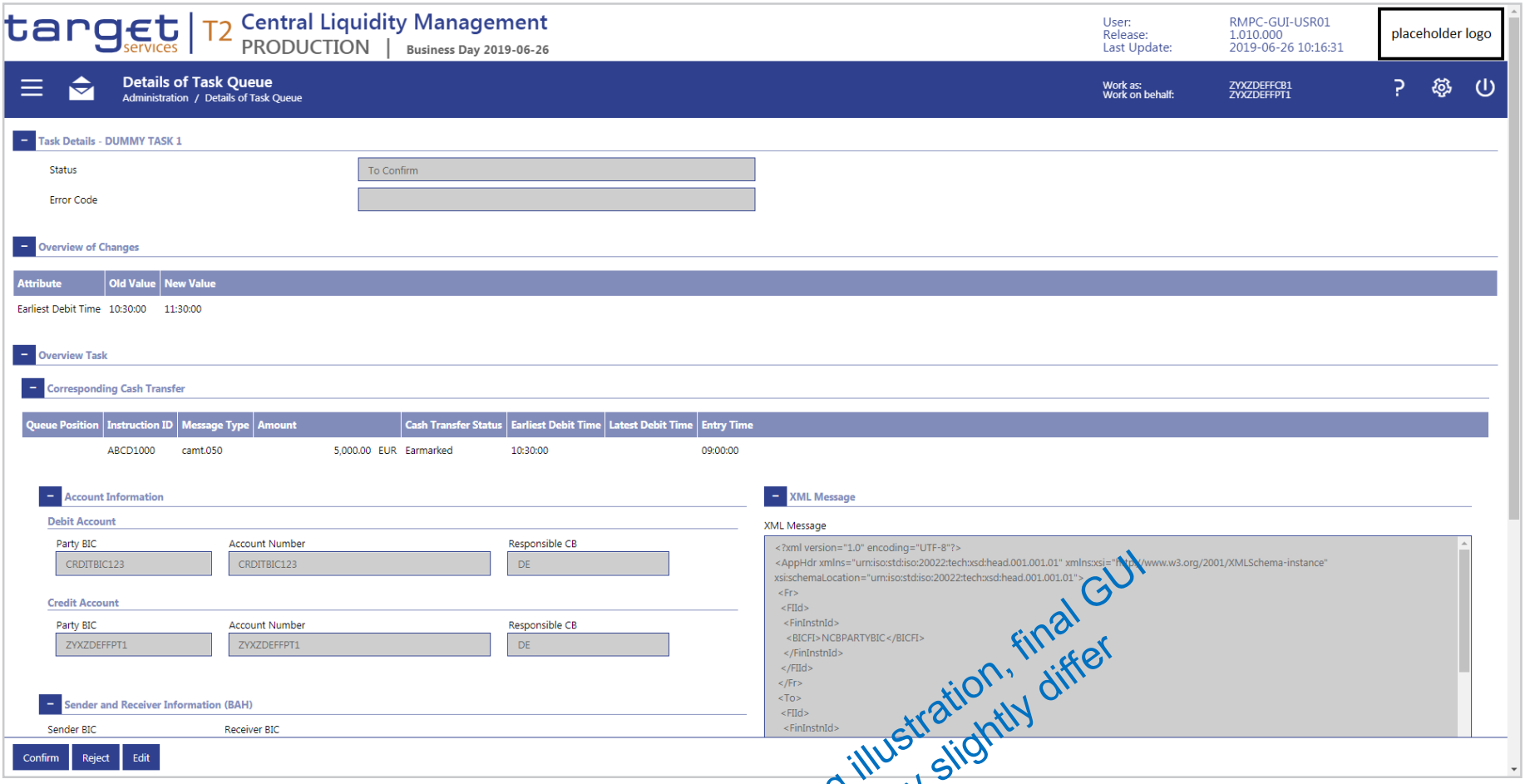
2. The new T2 - CLM
GUI illustration - browse tasks queue



Non binding illustration, final GUI details may slightly differ

Note: this screen requires Central Bank privileges

2. The new T2 - CLM
GUI illustration - browse details of a task queue



Non binding illustration, final GUI details may slightly differ

Note: this screen requires Central Bank privileges

AGENDA

1. Introduction
2. The new T2
   - The common components
   - CLM (Central Liquidity Management)
   - RTGS (Real Time Gross Settlement)
3. The co-management
4. Readiness, timeline, testing and migration
5. The Network Service Providers
6. TIPS & ECMS

AGENDA

2. The new T2

- The shared components
- CLM (Central Liquidity Management)
- RTGS (Real Time Gross Settlement)

1. Overview of services and successor of TARGET2
2. Access rights management and common reference data management
3. ESMIG connectivity
4. RTGS calendar and business day schedule
5. RTGS account categories

5.1 Functionality of RTGS - DCA

5.2 Cash transfer orders and cash transfers in RTGS

5.3 RTGS-DCA: Type of messages in U2A or A2A

5.4 Participation Types – RTGS Directory

6. Payments

6.1 Payment message flow: pacs.008 and pacs.009

6.2 Payment message flow: pacs.010 (direct debit)

6.3 Technical validation of messages sent to RTGS

6.4 Cash transfer order priorities

6.5 Priority Classification

6.6 Cash transfer order execution time

6.7 Payment order modification

6.8 Payment order revocation and payment recall

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AGENDA

2. The new T2
   - The shared components
   - CLM (Central Liquidity Management)
   - RTGS (Real Time Gross Settlement)

7. RTGS liquidity monitoring
8. RTGS account functionalities
   - 8.1 Liquidity transfer
     - 8.1.1 Floor/ceiling
     - 8.1.2 Inter-service CLM to RTGS
     - 8.1.3 Intra-service inside RTGS
     - 8.1.4 Inter-service RTGS to CLM
     - 8.1.5 Inter-service RTGS to T2S
   - 8.2 Standing order
   - 8.3 Messaging and report
9. New GUI: latest developments

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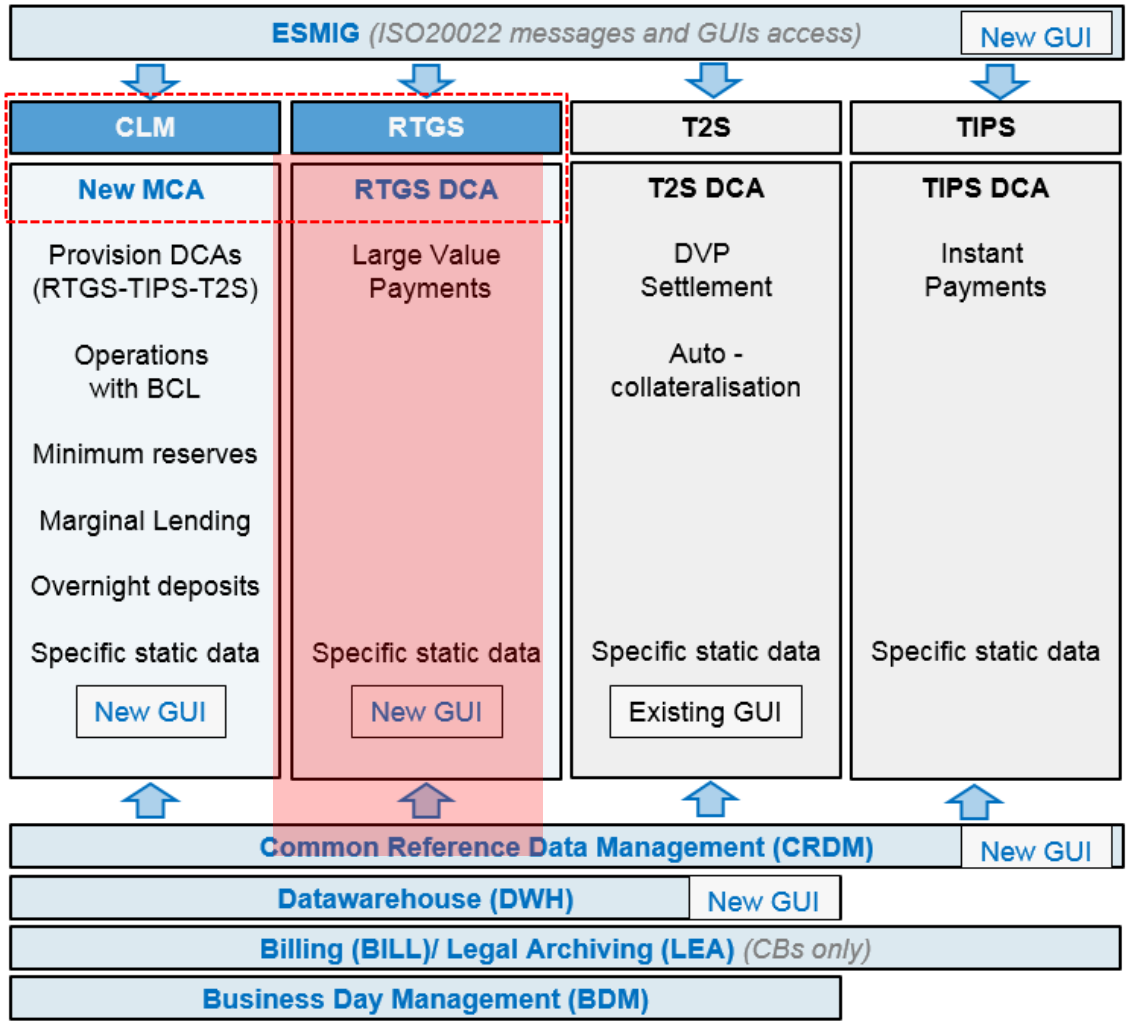
2. The new T2 - RTGS
1. Overview of services and successor of TARGET2

The place of the RTGS in the Target Services:

new T2 = CLM + RTGS



2. The new T2 - RTGS
1. Overview of services and successor of TARGET2

What will change:

The new T2 RTGS service persists most of the payment functionality provided by the former Target2 SSP platform

However, there will be a series of changes in the way these functionalities will be delivered:

- ISO20022 only. SWIFT Y-copy mode will be switched to V-shape mode
- New user interfaces: ICM will be replaced by CLM, RTGS, CRDM and DWH GUI's
- All current SWIFT specific features e.g. SWIFT RBAC roles, will be replaced by the CRDM (Common Reference Data Management)
- Access rights management changes
- Business day starts earlier
- Ancillary Systems procedures updated

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2. Access rights management and common reference data management

Today all access rights are managed outside Target 2

- SWIFT e-ordering to register for Target 2 Service
- CB has to approve the e-ordering
- The local SWIFT Administrator creates certificates/users and assigns roles to each certificate
- Log-in in Target 2 : SWIFT forwards the access rights to Target 2 and the link is provided through the DN (Distinguished Name) which is stored in Target 2 static data.

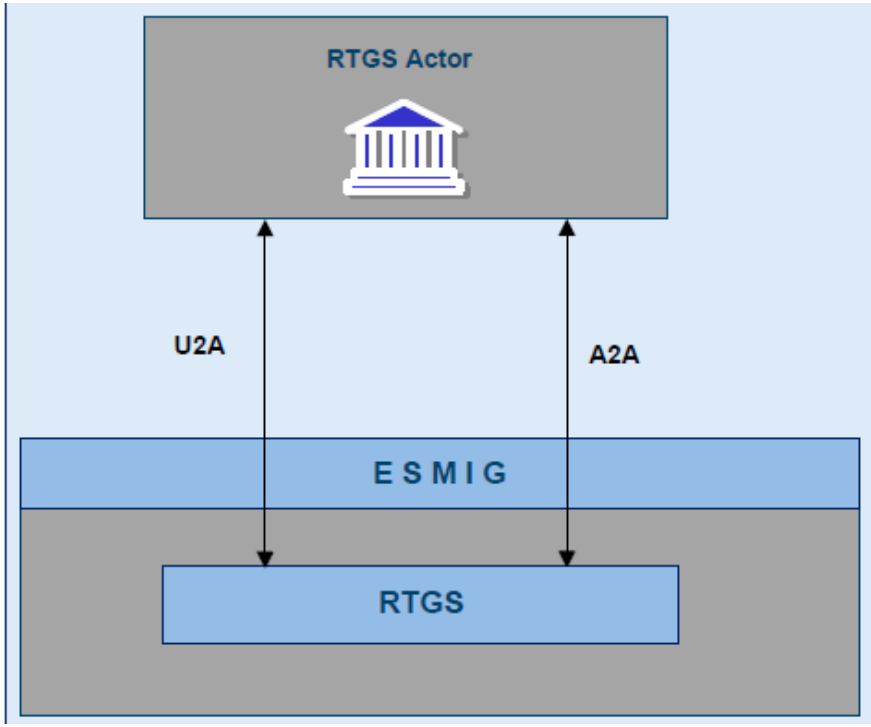
2. Access rights management and common reference data management

Tomorrow all access rights are managed in the

Common Reference Data Management component (CRDM)

- Access via ESMIG portal which provides the central authentication authorisation and user management features.
- E-ordering performed via NSP (Network Service Provider)
- Registration in a Closed User Group (CUG): each NSP defines a CUG for each Target Service environment (test & production)

Reminder: ESMIG is the single gateway to access the Target Services, including RTGS



The individual or application interacting with RTGS is identified by DN (Distinguished Name):

- ❑ DN's are linked to digital certificates which RTGS Actors assign to their users.
- ❑ ESMIG authenticates the RTGS Actor and carries out the authorisation checks.

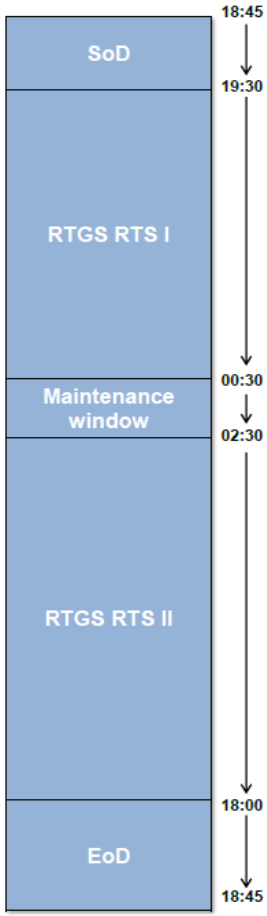
4. RTGS calendar and business day schedule

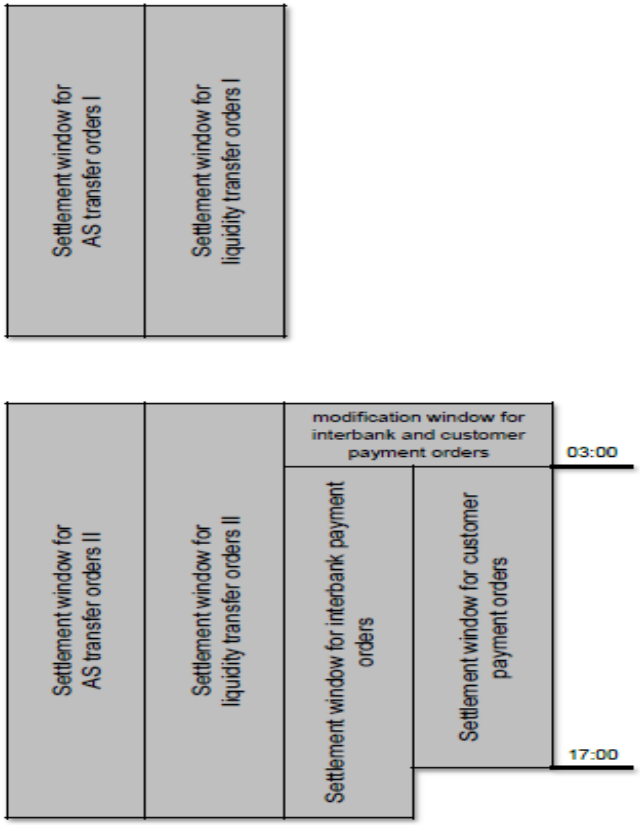
T2 calendar:

From Monday to Friday excluding :

- New Year's Day (1 January)
- Good Friday
- Easter Monday
- Labour Day (1 May)
- Christmas Day (25 December)
- Boxing Day (26 December)

2. The new T2 - RTGS
4. RTGS calendar and business day schedule





2. The new T2 - RTGS
5. RTGS account categories

- ✓ Account must be linked to a party.
- ✓ Party holding at least one MCA (in CLM) **and** at least one DCA (in RTGS) required to set-up one-to-one link.
- ✓ One-to-one link is a condition for rule-based and automated liquidity transfers.

RTGS DCA	(1) Settlement of real time interbank payments. (2) Settlement of customer payments. (3) AS* transfers.

RTGS sub-account	Belongs to RTGS DCA. Liquidity to allow the settlement of AS.
RTGS dedicated transit account	Technical account, party type CB.
AS guarantee funds account	RTGS account for maintaining funds linked to settlement of AS. For party type CB or payment bank.
AS technical account.	AS transfers. For party type CB or AS.

*Ancillary System

2. The new T2 - RTGS
5.1 Functionality of RTGS – DCA

- ✓ RTGS provides the settlement for real-time interbank and customer payments and ancillary systems transactions in Central Bank Money.

- ✓ RTGS DCA operates on cash-only-basis and cannot be negative:

  the credit line is on the MCA and can be used to increase the liquidity on the DCA by performing a liquidity transfer from the MCA to the RTGS DCA.

- ✓ A party may open more than one RTGS DCA for dedicated purpose, depending on its business needs

  e.g. one DCA for settlement of its own payments and one for settlement of payments for one or more ancillary systems.

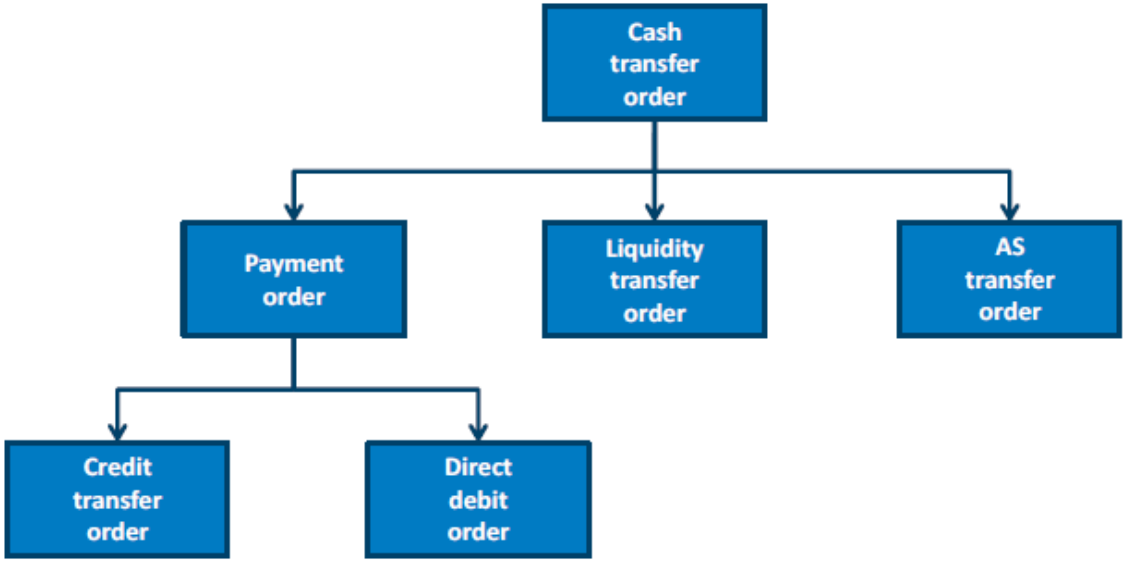
- ✓ Each account is identified by a BIC 11 as well as by an account ID

  The BIC 11 must be UNIQUE in the respective Settlement Service.

  The same BIC 11 can be used for RTGS, T2S, TIPS but only once

  The account ID must be unique across all Settlement Services

5.2 Cash transfer order and cash transfer in RTGS



5.3 RTGS cash transfer order in U2A or A2A

The following cash transfer order types can be used:

Cash transfer order	Cash transfer order type	Message Identifier	Message Name	Initiation via U2A possible
Credit transfer order for a customer payment	Customer payment	pacs.008 [▸ 708]	CustomerCreditTransfer [▸ 708]	Yes
Credit transfer order for a payment return	Interbank payment	pacs.004 [▸ 703]	PaymentReturn [▸ 703]	No
Credit transfer order for an interbank payment	Interbank payment	pacs.009 [▸ 713]	FinancialInstitutionCreditTransfer [▸ 713]	Yes
Direct debit order for an interbank payment	Interbank payment	pacs.010 [▸ 724]	FinancialInstitutionDirectDebit [▸ 724]	No
Liquidity transfer order	Interbank payment	camt.050 [▸ 630]	LiquidityCreditTransfer [▸ 630]	Yes
AS transfer order	AS transfer order	pain.998 [▸ 753]	ASTransferInitiation [▸ 753]	No

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2. The new T2 - RTGS
5.4 RTGS cash transfer order based on participation type

The following table provides an overview of which type of cash transfer orders an actor can submit directly and indirectly to RTGS:

RTGS Directory participation types/CB on behalf	Submission of cash transfer order	Cash transfer order types					
		PaymentReturn (pacs.004) [▶ 703]	CustomerCreditTransfer (pacs.008) [▶ 708]	FinancialInstitutionCreditTransfer (CORE and COV) (pacs.009) [▶ 713]	FinancialInstitutionDirectDebit (pacs.010) [▶ 724]	LiquidityCreditTransfer (camt.050) [▶ 630]	ASTransferInitiation (pain.998) [▶ 753]
Direct Participant	Directly	Yes	Yes	Yes	Yes	Yes	No
Indirect Participant/"addressable BIC"	Via Direct Participant	Yes	Yes	Yes	Yes	Yes	No
Multi-addressee access participant	Directly	Yes	Yes	Yes	Yes	Yes	No

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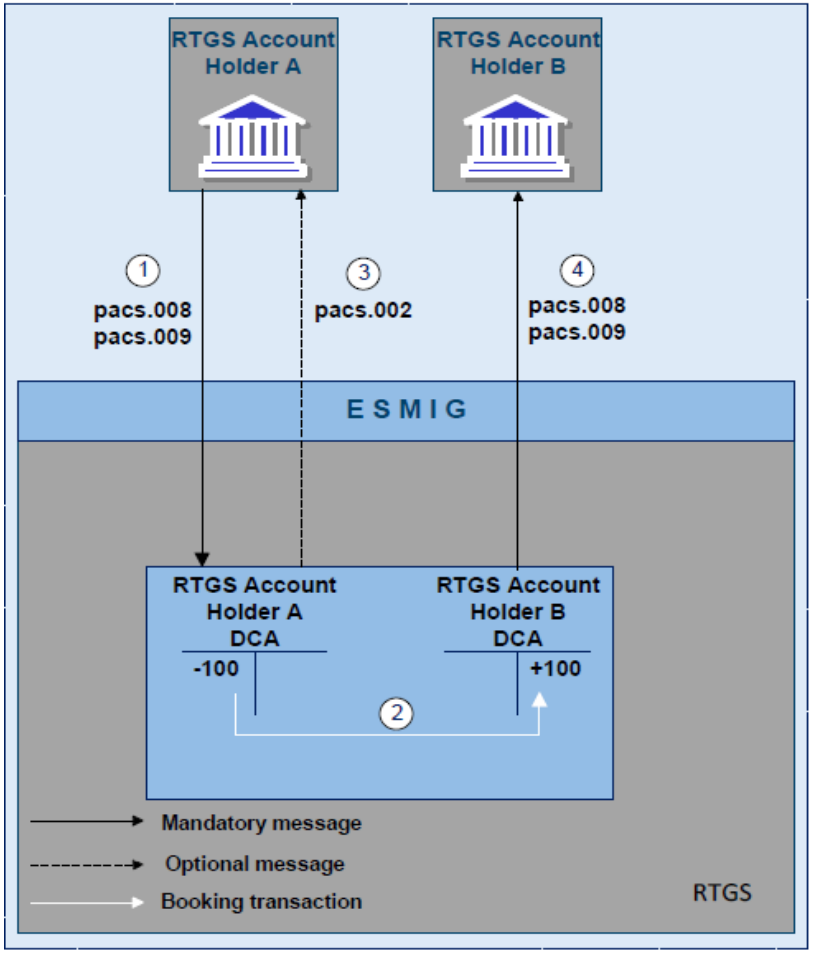
2. The new T2 - RTGS

5.4 RTGS cash transfer order based on participation type

RTGS Directory participation types/CB on behalf	Submission of cash transfer order	Cash transfer order types					
		PaymentReturn (pacs.004) [▶ 703]	CustomerCreditTransfer (pacs.008) [▶ 708]	FinancialInstitutionCreditTransfer (CORE and COV) (pacs.009) [▶ 713]	FinancialInstitutionDirectDebit (pacs.010) [▶ 724]	LiquidityCreditTransfer (camt.050) [▶ 630]	ASTransferInitiation (pain.998) [▶ 753]
Ancillary system	Directly	No	No	No	No	No	Yes
CB on behalf of a Direct Participant	Directly	Yes	Yes[19]	Yes[20]	Yes	Yes	N/A
CB on behalf of an ancillary system	Directly	N/A	N/A	N/A	N/A	N/A	Yes

2. The new T2-RTGS
6.1 Payment message flow: pacs.008 and pacs.009



1	RTGS account holder A sending payment order pacs.008 or pacs.009 to RTGS.
2	a) RTGS validating the message. b) Acceptance of the payment order when the message validation is successful. c) RTGS settles the payment order on the RTGS DCA of the RTGS account holders A and B.
3	RTGS sends a settlement notification pacs.002 to the RTGS account holder A (optional, based on subscription).
4	RTGS creates and forwards a pacs.008 or pacs.009 to the RTGS account holder B (mandatory).

pacs.008	**CustomerCreditTransfer**
pacs.009 CORE and COV	**FinancialInstitutionCreditTransfer**

pacs.002	**PaymentStatusReport**

2. The new T2-RTGS
6.2 Payment message flow: pacs.010 (direct debit)

- ✓ The direct debit functionality enables RTGS account holder to debit another account holder's RTGS account and credit its own RTGS account.
- ✓ Direct debit mandate is a preliminary condition for instructing direct debits in RTGS.

  The set-up and maintenance of the direct debit mandates is performed by the Central Bank.
- ✓ Wholesale purposes: interbank transactions.
- ✓ Only available in A2A mode

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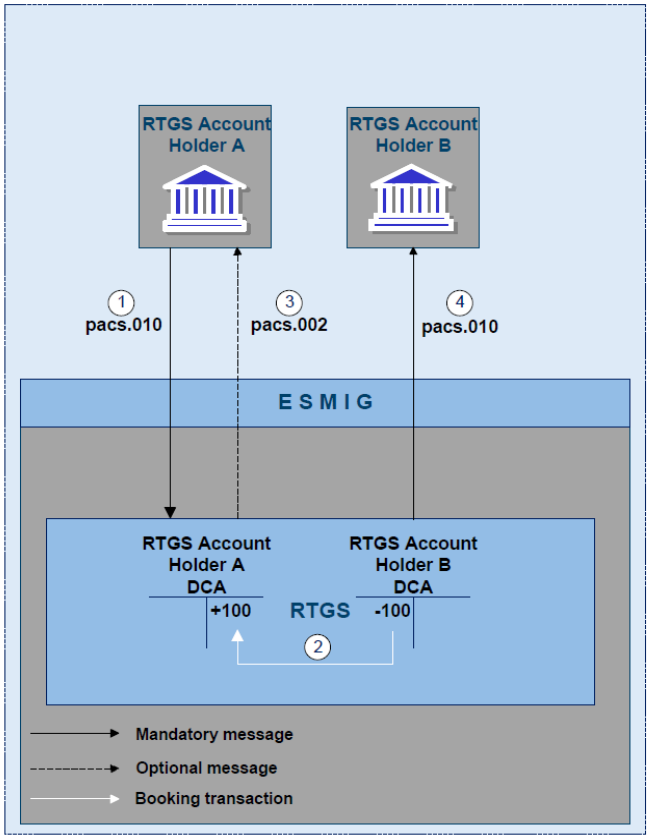
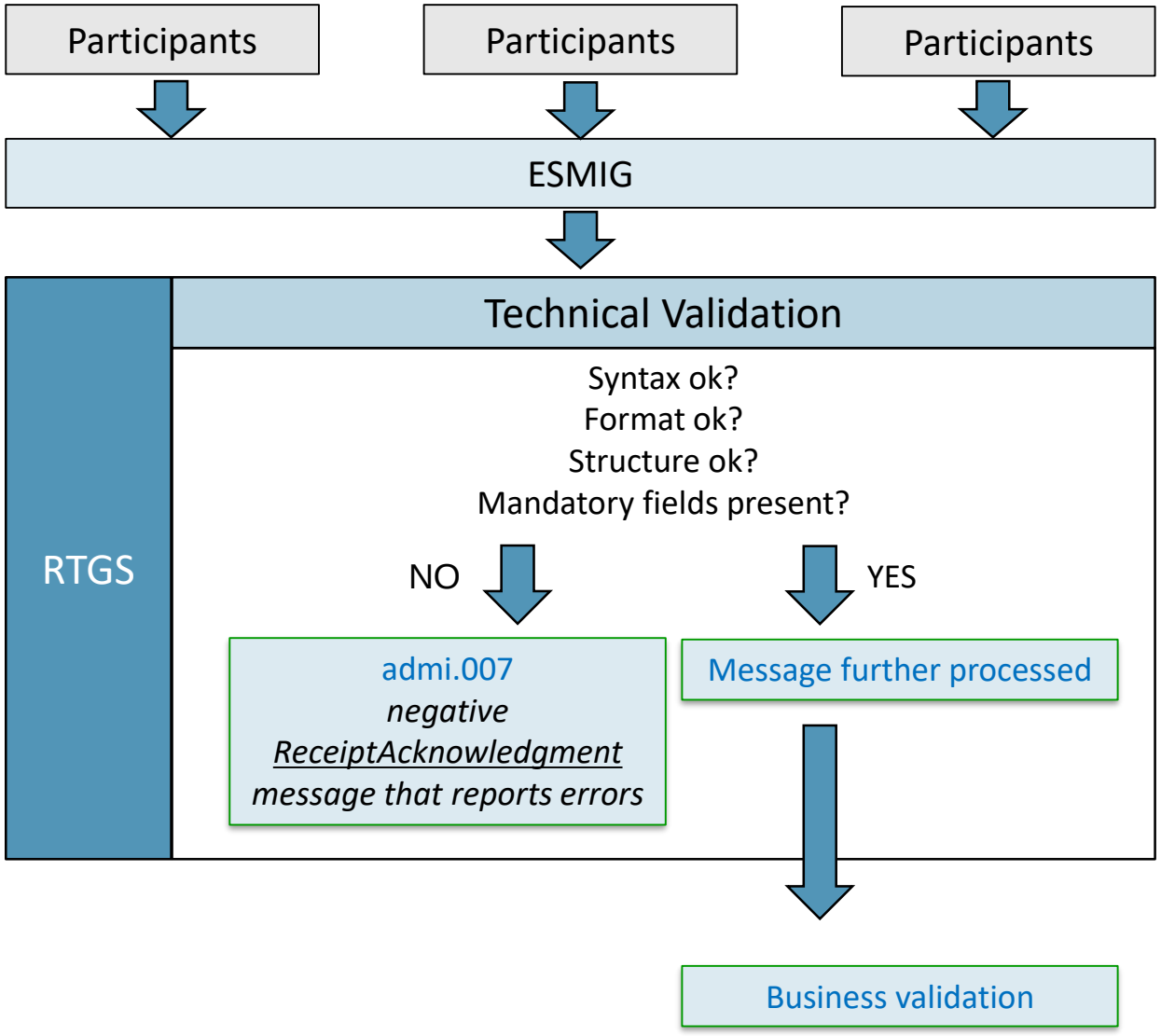
2. The new T2-RTGS
6.2 Payment message flow: pacs.010 (direct debit)



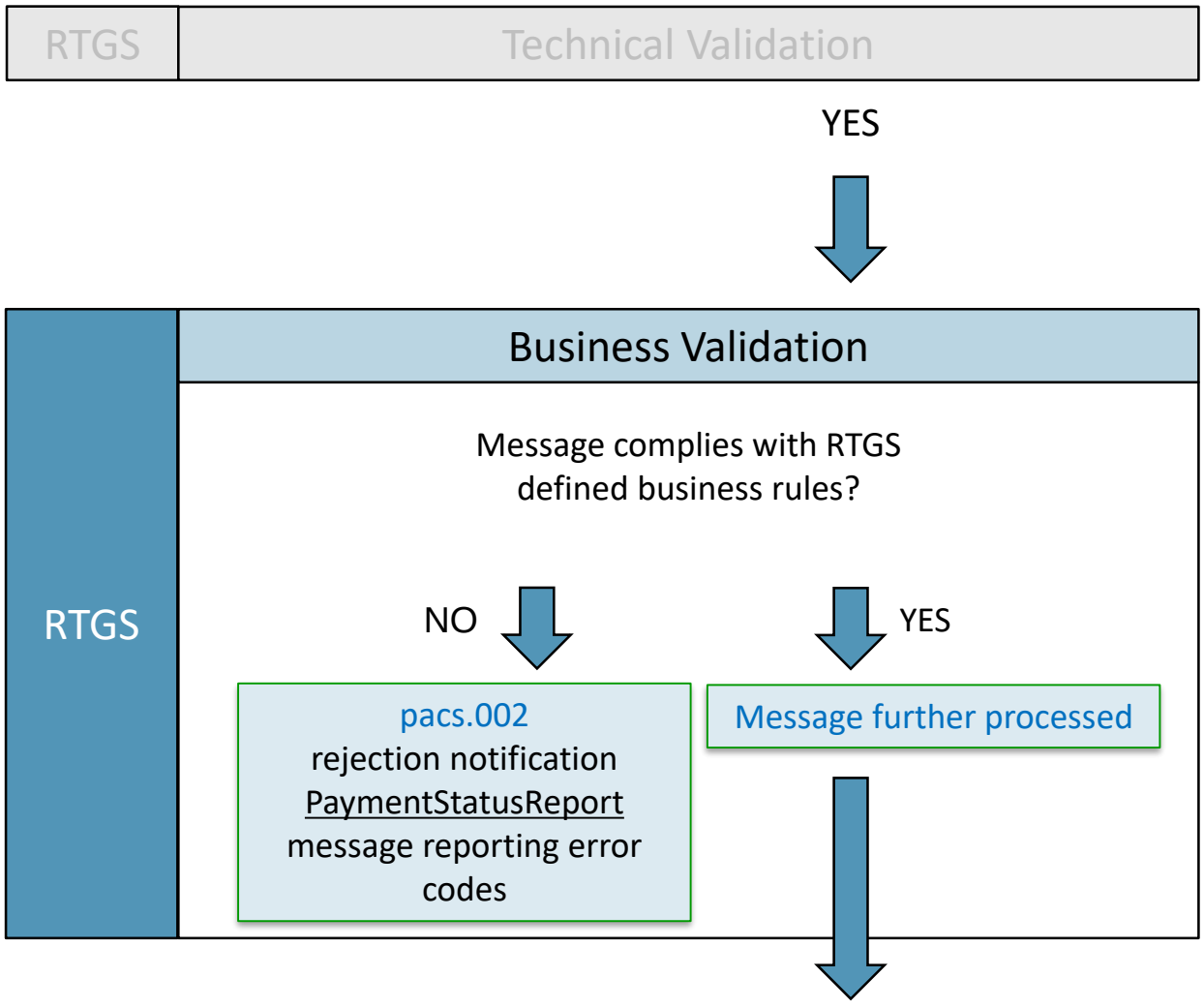
1	RTGS account holder A sending pacs.010 to RTGS.
2	a) RTGS validating the message. b) Acceptance of the payment order when the message validation is successful. c) RTGS settles the payment order on the RTGS DCA of the RTGS account holders A and B.
3	RTGS sends a settlement notification pacs.002 to the RTGS account holder A (optional).
4	RTGS creates and forwards a pacs.010 to the RTGS account holder B (mandatory).

pacs.010	**FinancialInstitutionDirectDebit**
pacs.002	**PaymentStatusReport**

2. The new T2 - RTGS
6.3 Technical validation of messages sent to RTGS



6.3 Technical validation of messages sent to RTGS



2. The new T2 - RTGS
6.4 Cash transfer order priorities

The cash transfer order functionalities: PRIORITIES

Priority	Characteristic
Urgent	RTGS immediately attempts to settle cash transfer orders with the priority "urgent" when there are no cash transfer orders with the priority "urgent" queued. When RTGS identifies queued cash transfer orders with the priority "urgent", RTGS places the urgent cash transfer order in the settlement queue for settlement and settles them based on the FIFO principle. However, automated inter-service liquidity transfer orders always have top priority, i.e. RTGS places them on the top of the urgent queue.
High	RTGS immediately attempts to settle cash transfer orders with the priority "high" when there are no cash transfer orders with the priority "urgent" or priority "high" queued. When RTGS identifies queued cash transfer orders with the priority "urgent" or priority "high", RTGS settles cash transfer orders with the priority "high" based on the FIFO principle only after no cash transfer orders with the priority "urgent" remain queued.
Normal	RTGS settles cash transfer orders with the priority "normal" based on the FIFO-bypassing principle (see chapter Processing of cash transfer orders [▶ 125]). RTGS settles such cash transfer orders even if cash transfer orders with priority "normal" that were submitted earlier are still in the queue, provided that the balance on the RTGS DCA is sufficient to settle it.

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6.5 Priority Classification

Overview of the standard and allowed priorities :

	Standard	Allowed
pacs.008	Normal	High/Normal
pacs.004	Normal	Normal
pacs.009	Normal	Normal High Urgent
camt.050	Always Urgent	

Note:
RTGS assigns a default priority when a cash transfer does not specify one

The cash transfer order functionalities: EXECUTION TIME

The Earliest debit time indicator

A payment is eligible for settlement only as of the specified time (message element FromTime)

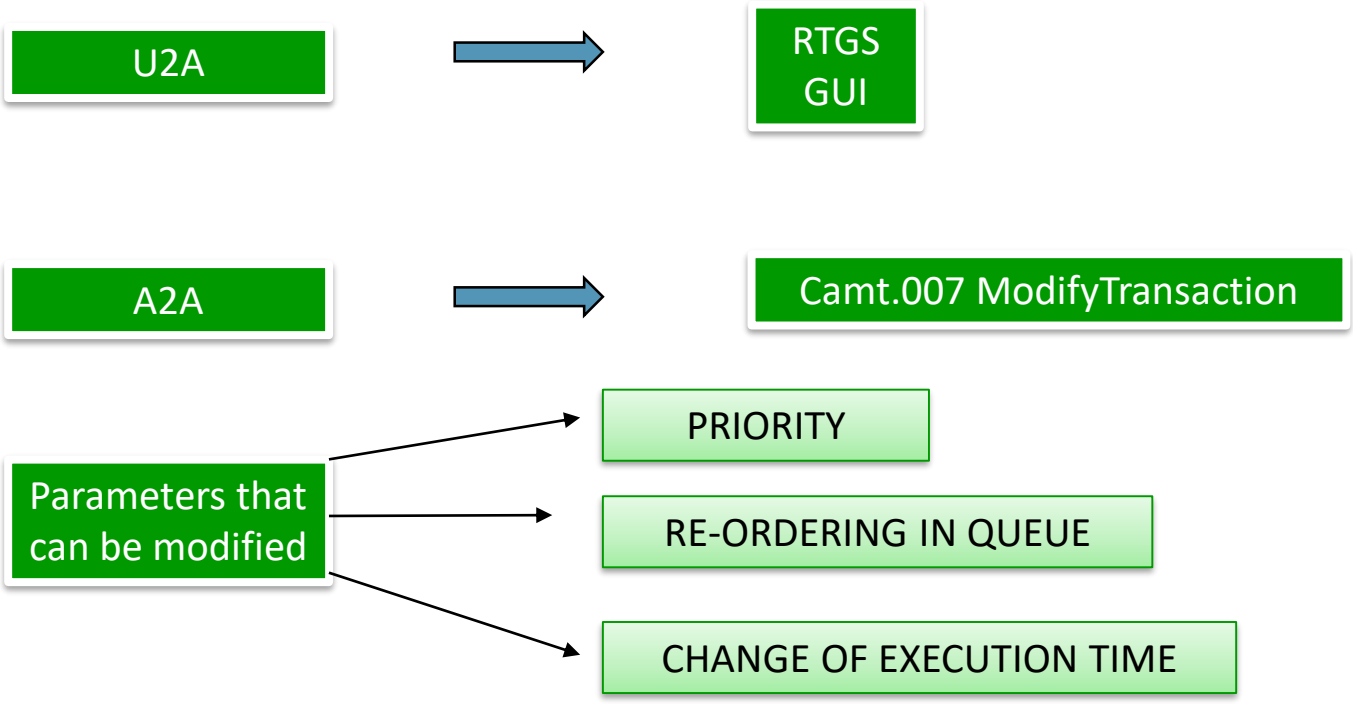
The Latest debit time indicator

Option A: a payment order must be settled by the specified time (message element RejectTime).
After specified time: RTGS sends rejection notification.

Option B: a payment order should be settled by the specified time i.e. resulting in a warning only, but the payment still may settle after the specified time.

6.7 Payment order modification

Specific parameters can be modified in A2A and U2A mode as long as the payment is not in a «settled» status



6.8 Payment order revocation and payment recall

The cash transfer order functionalities: REVOCATIONS AND RECALLS

Payment order revocation and payment recall

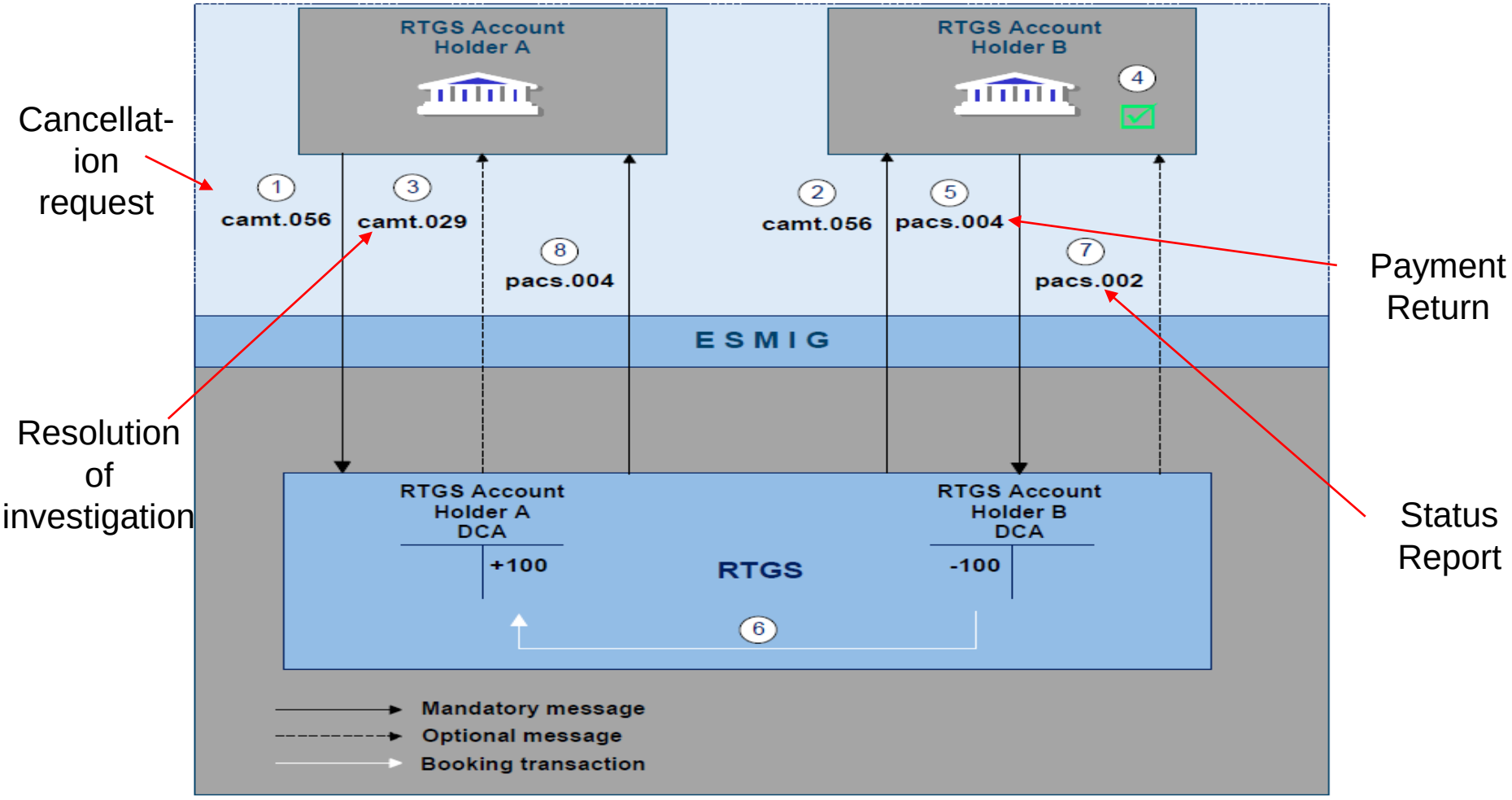
In A2A, sending a camt.056

- to revoke a queued payment order
- to recall a settled payment

Via U2A/GUI

- only possible to revoke a queued payment order (not settled yet)

6.8 Payment order revocation and payment recall



2. The new T2 - RTGS
7. RTGS liquidity monitoring

The future structure of Target Services requires a clear allocation of liquidity for different settlement purposes. This requires that treasurers have means and tools to monitor and manage the liquidity.

Liquidity Monitoring Tools:

- ✓ GUI (Graphical User Interface) allows users to access the RTGS component in U2A mode and to perform business functions based on their respective access rights.
- ✓ Alerts and notifications that can be triggered when an event takes place during the settlement process e.g. breaching a defined floor or ceiling amount.
- ✓ Standard reports that RTGS shall create at a certain time during the business day
- ✓ Account Monitoring Group that will allow the Party to monitor the liquidity on the clustered accounts collectively.
- ✓ Transfer of Liquidity either manually (GUI / A2A) or automatically (preconfigured standing orders)
- ✓ Automated Liquidity Transfer in case of lack of liquidity on the MCA to settle CB Operations.The system triggers an automated LT and tries to pull the amount needed from the default RTGS DCA. This function is mandatory and does not require any prior configuration.
- ✓ Warehoused Payments: payments can be sent to RTGS up to 10 calendar days in advance.
- ✓ Contingency: Back-up payments: in case of SWIFT unavailability

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2. The new T2-RTGS
8.1 RTGS account functionalities: Liquidity Transfer

Liquidity Transfer Types in RTGS

Immediate	Rule based	Standing order
Initiated by the RTGS account holder. Immediate transfer after initiation. By the RTGS account holder OR another authorised RTGS actor.	**Initiated by RTGS.** Cases: a) queued urgent payment order, b) AS transfer order or c) high priority payment order gets queued OR: Floor and/or ceiling rule (configuration CB in CRDM) RTGS generates rule-based inter-service liquidity transfer (*pulling liquidity from the linked MCA in CLM*). The configuration is done in CRDM by the RTGS account holder(?).	**Initiated by RTGS.** Recurring transfer. Every business day. Configured event. Configured business day event or at start of procedure: Defined amount of liquidity From RTGS DCA to other cash account. Over a period with/without predefined end date. Defined at level of RTGS DCA -CRDM. One-to-one link set-up between MCA and (default) RTGS DCA.

Examples of liquidity transfer orders:

- Intra- service liquidity transfer to (another) RTGS DCA
- Intra- service liquidity transfer to a linked sub-account (different settlement procedure for AS)
- Inter service liquidity transfer to MCA (in CLM)
- Inter service liquidity transfer to DCA in another target service (TIPS, T2S).

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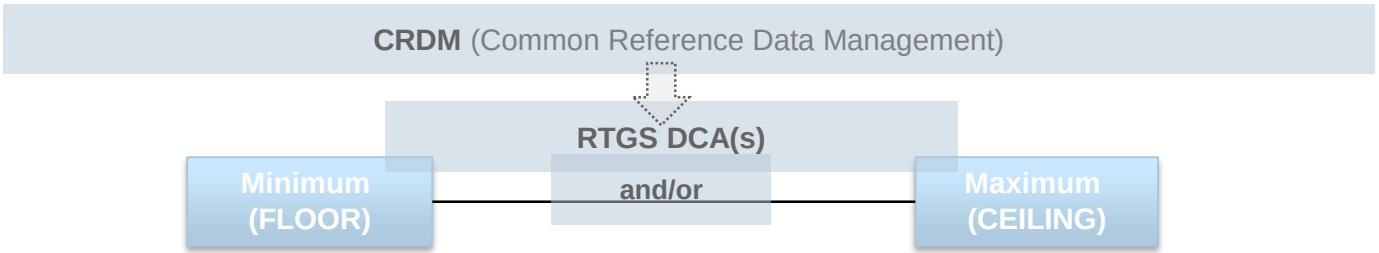
8.1.1 Floor/ceiling: General Overview

In CRDM, RTGS account holder can set
- minimum (floor) and/or maximum (ceiling) threshold amount.
- define what action shall be triggered once balance below/above defined threshold.



Option 1: Notification

- Notification generated by RTGS and sent to the RTGS account holder.
- Sent every time for floor/ceiling event, but not for the period the balance stays constant below/above threshold after initial breach.
- In U2A or A2A.

Minimum (FLOOR) and/or Maximum (CEILING)

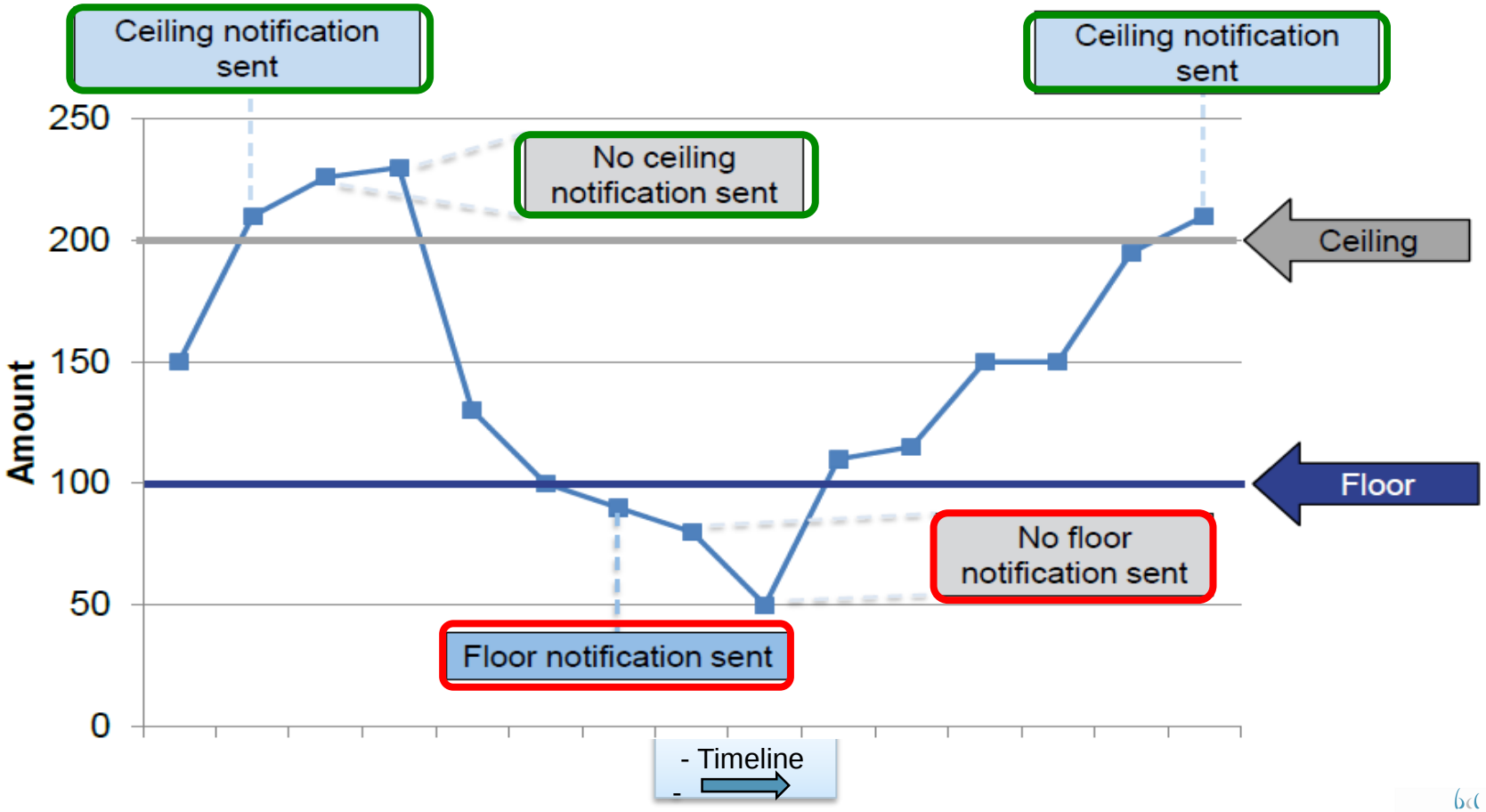
Option 2: automated liquidity transfer

- RTGS automatically generates liquidity transfer (inter-service).
- Rule based liquidity transfer.
- Floor breach: pull liquidity **from** MCA
- Ceiling breach: push liquidity **to** MCA

Minimum (FLOOR) and/or Maximum (CEILING)

2. The new T2 - RTGS
8.1.1 Floor/ceiling: Option 1 Notification

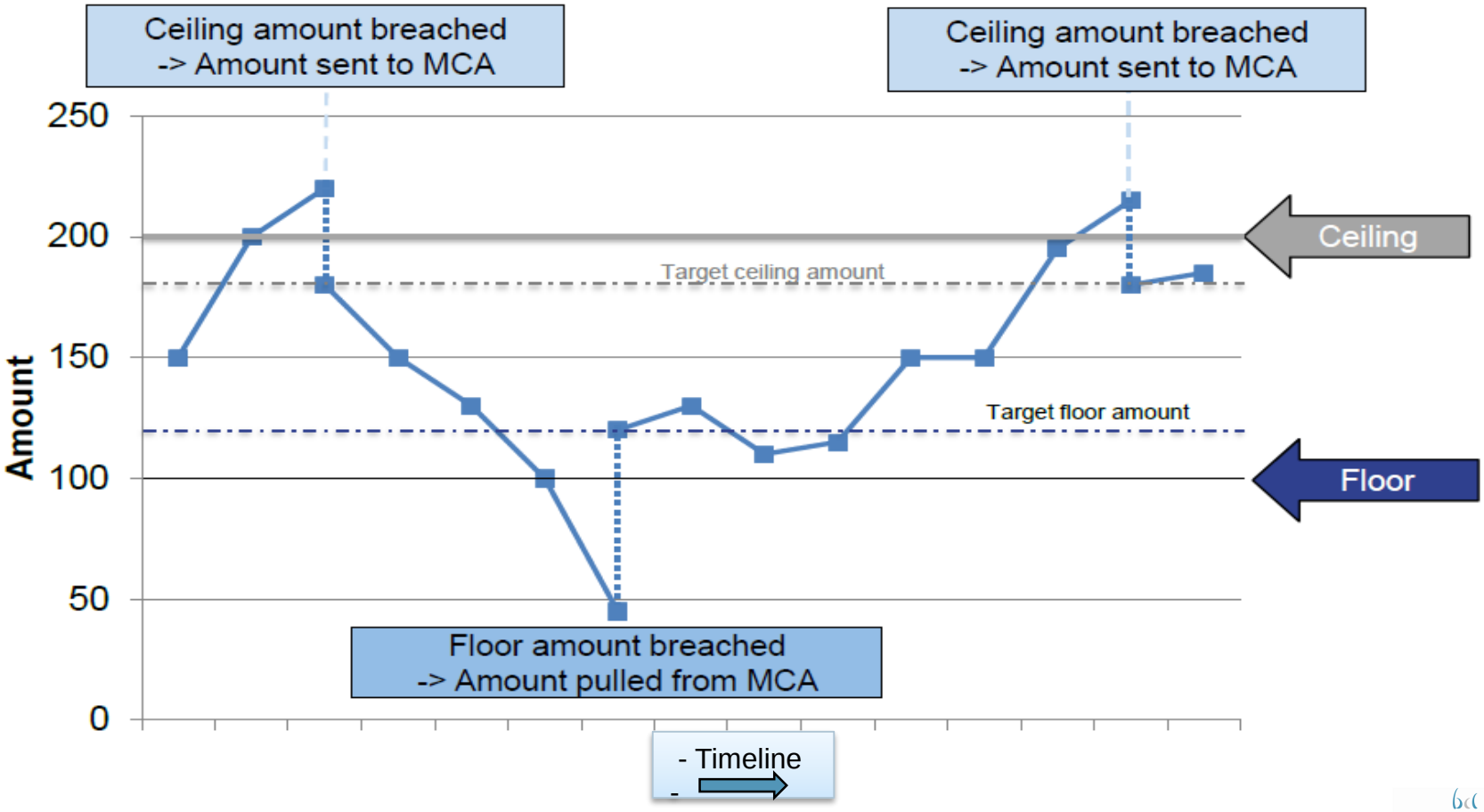
In CRDM, the RTGS account holder configured a notification if pre-defined threshold is breached
It is up to the RTGS account holder to take action once notification has been sent



2. The new T2-RTGS
8.1.1 Floor/ceiling: Option 2 Automated Liquidity Transfer

In CRDM, the RTGS account holder configured an automated liquidity transfer order if pre-defines threshold is breached

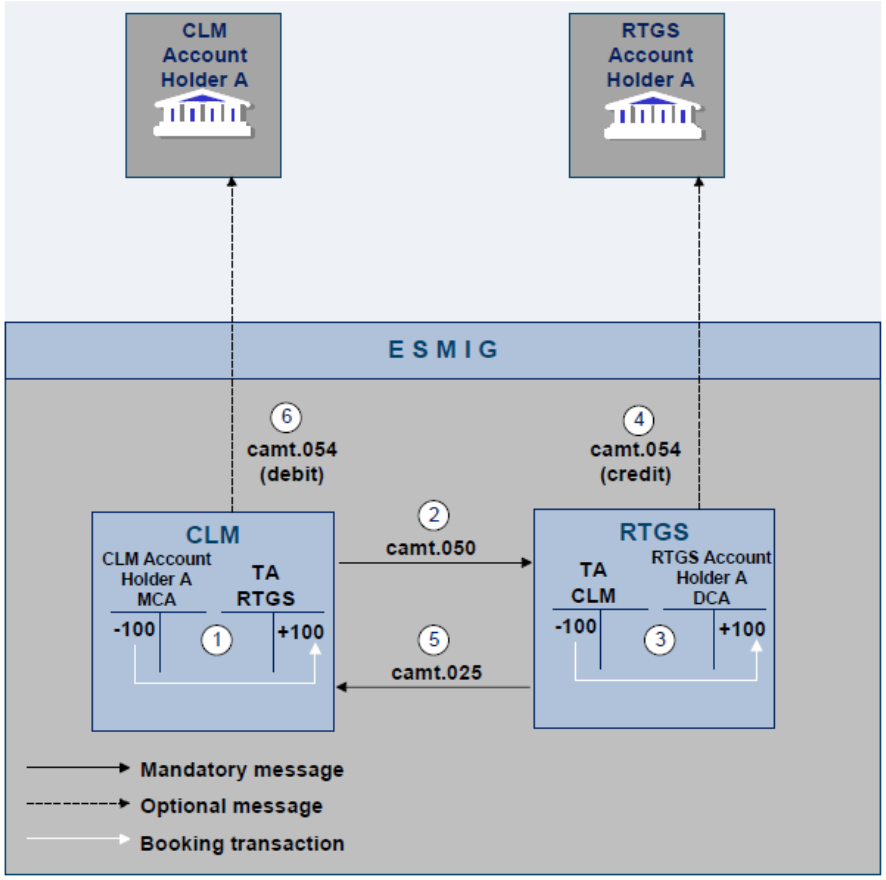
RTGS creates and releases an inter service liquidity transfer. One-to-one link MCA and RTGS DCA.



2. The new T2 - RTGS

8.1.2 Liquidity transfer: inter-service CLM to RTGS

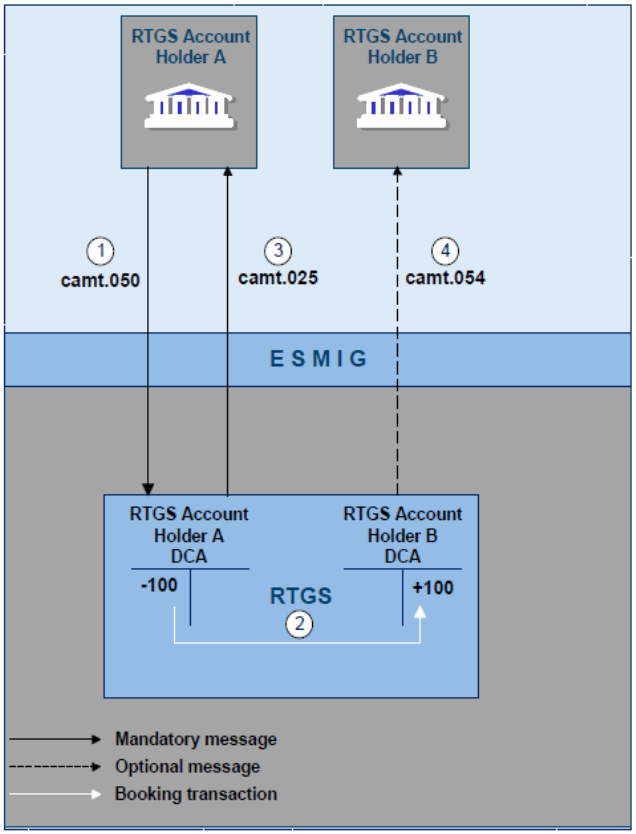
- ✓ Example of an **inter-service liquidity transfer generated by the system.**
- ✓ Use case for **floor/ceiling** automated liquidity transfer as described in previous screen.



1	***CLM:*** In case sufficient liquidity is available, settlement on CLM MCA and RTGS transit account in CLM.
2	***CLM to RTGS:*** camt.050 forwarded to RTGS.
3	***RTGS:*** CLM transit account debited and RTGS DCA account credited.
4	***RTGS to RTGS account holder:*** camt.054 sent by RTGS to RTGS account holder (optional).
5	***RTGS to CLM:*** camt.025 sent to CLM.
6	***CLM to CLM account holder***: camt.054 sent by CLM to CLM account holder (optional).

2. The new T2 - RTGS
8.1.3 Liquidity transfer: intra-service inside RTGS

- ✓ Example of an immediate intra-service liquidity transfer inside RTGS.
- ✓ Required: Liquidity Transfer Group.

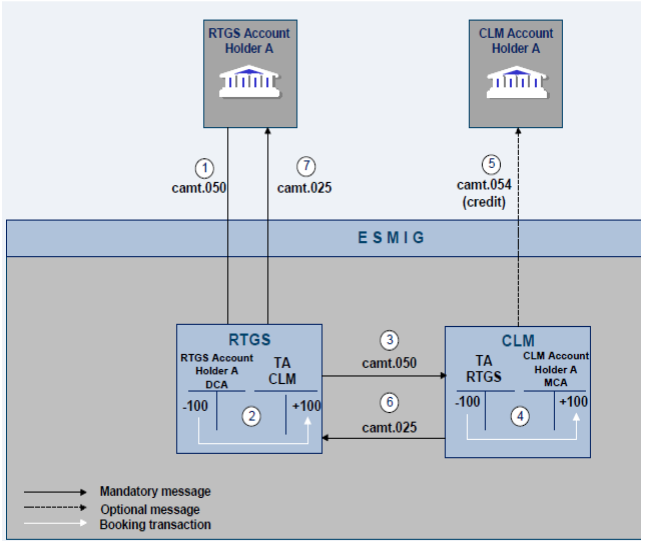


1	***RTGS account holder A to RTGS:*** RTGS Account Holder A sending camt.050 to RTGS.
2	***RTGS:*** a) RTGS validating the message - DCA debited and DCA credited = **Liquidity Transfer Group**. b) Acceptance of the payment order when the message validation is successful. c) Sufficient liquidity available. c) RTGS settles the payment order on the RTGS DCA of the RTGS account holders A and B.
3	***RTGS to RTGS account holder A:*** RTGS creates and forwards camt.025 to account holder A (mandatory).
4	***RTGS to RTGS account holder B:*** RTGS creates and forwards camt.054 to account holder B (optional).

2. The new T2 - RTGS

8.1.4 Liquidity transfer: inter-service RTGS to CLM

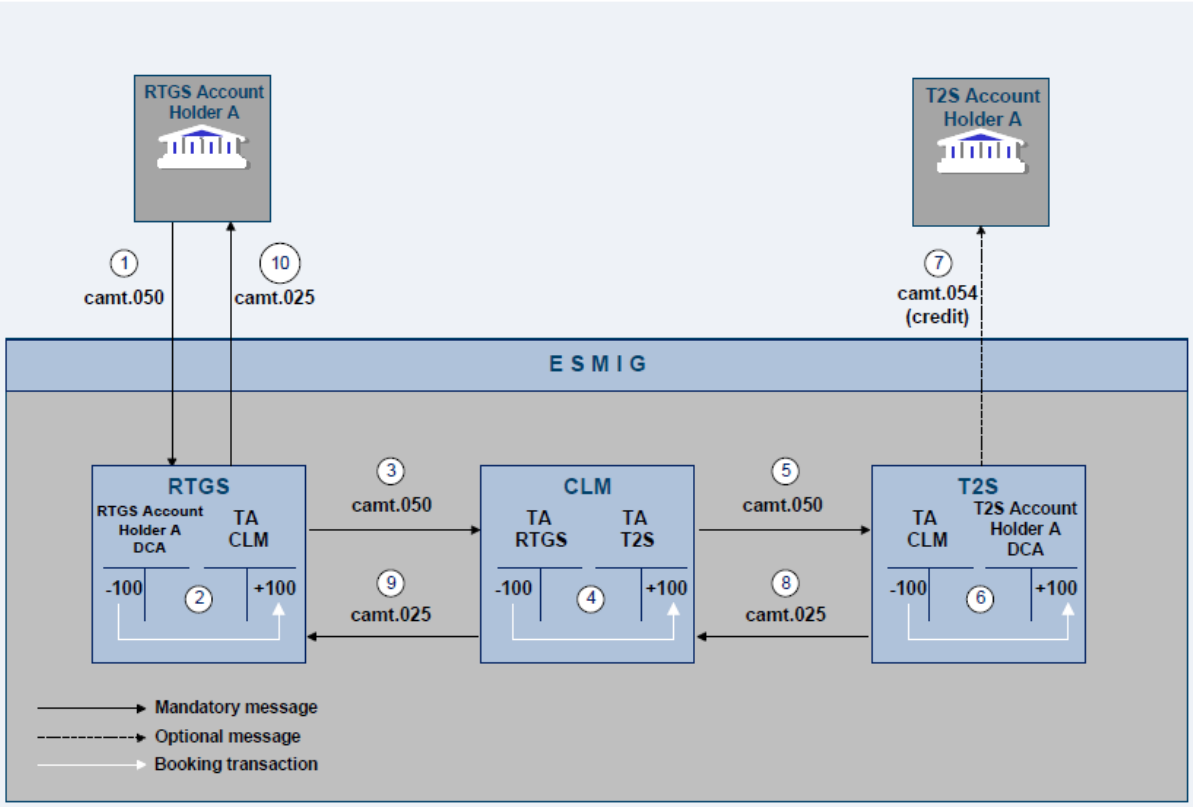
- ✓ Example of an immediate inter-service liquidity transfer from RTGS to MCA (in CLM).
- ✓ Possibility to send liquidity to any MCA (held in CLM).



1	RTGS Account Holder A sending **camt.050** to RTGS.
2	a) RTGS validating the message. b) Acceptance of the payment order when the message validation is successful. c) Sufficient liquidity available. d) RTGS settles the payment order on the RTGS DCA of the RTGS Account Holder A and CLM transit account.
3	**camt.050** forwarded to CLM.
4	Simultaneous settlement RTGS transit account and MCA of CLM account holder A.
5	**camt.054** sent by CLM to CLM account holder A (optional).
6	**camt.025** forwarded to RTGS.
7	RTGS creates and forwards **camt.025** to account holder A (mandatory).

8.1.5 Liquidity transfer: inter-service RTGS to T2S

✓ Example of an **immediate inter-service liquidity transfer** from RTGS DCA to another DCA in a different TARGET service (T2S).

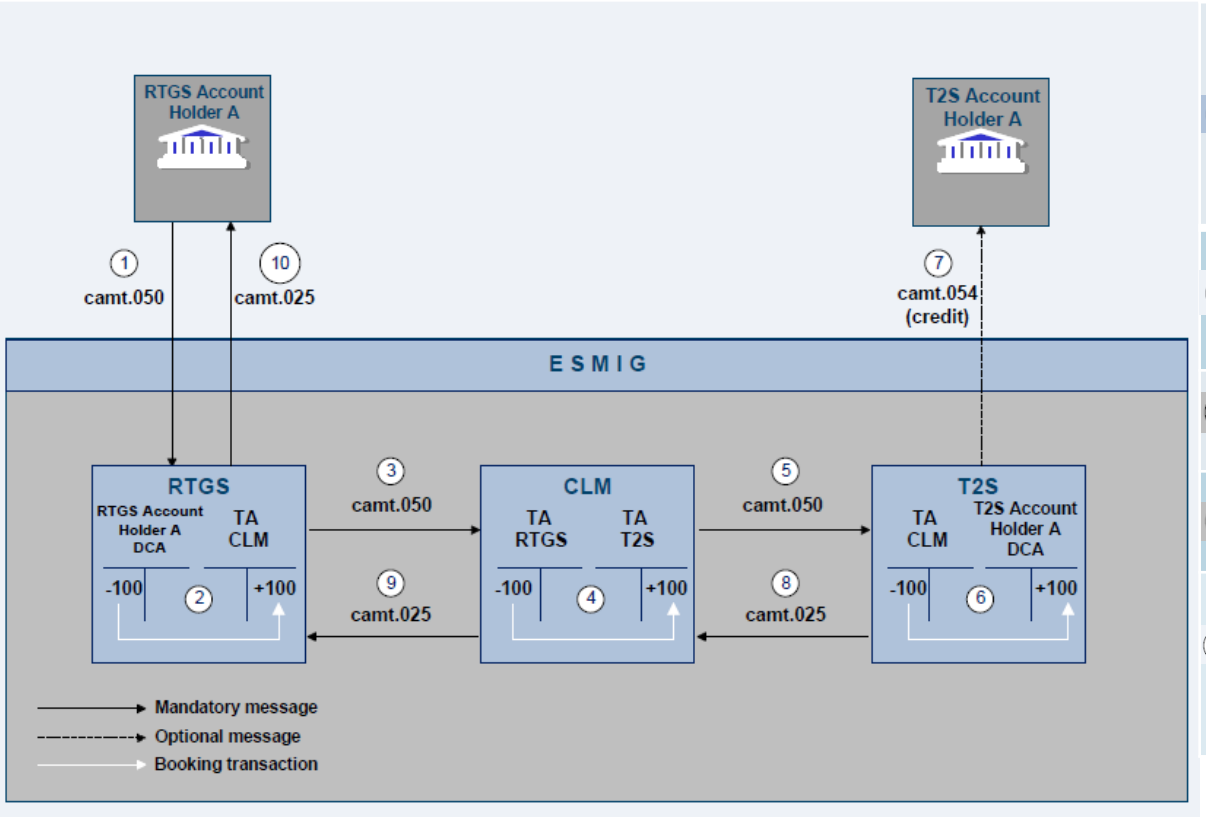


1	***RTGS account holder to RTGS:*** RTGS Account Holder A sending camt.050 to RTGS.
2	***RTGS:*** a) RTGS validating the message. b) Acceptance of the payment order when the message validation is successful. c) Sufficient liquidity available. d) Simultaneous settlement on the RTGS DCA of RTGS account holder A and the CLM transit account.
3	***RTGS to CLM:*** camt.050 forwarded to CLM.
4	***CLM:*** Simultaneous settlement on the RTGS transit account and the T2S transit account.
5	***CLM to T2S:*** **camt.050** forwarded to T2S.

2. The new T2 - RTGS

8.1.5 Liquidity transfer: inter-service RTGS to T2S

✓ Example of an immediate inter-service liquidity transfer from RTGS DCA to another DCA in a different TARGET service (T2S).



6 ***T2S service:*** Simultaneous settlement on the CLM transit account and the DCA of T2S account holder A.

7 ***T2S service to T2S account holder:*** camt.054 sent by T2S to the T2S account holder A (optional).

8 ***T2S service to CLM:*** camt.025 forwarded to CLM.

9 ***CLM to RTGS:*** camt.025 forwarded to RTGS.

10 ***RTGS to the RTGS account holder:*** RTGS creates and forwards **camt.025** to account holder A (mandatory).

8.2 RTGS account functionalities: Standing order

Standing order in RTGS

For reservation

Set-up urgent or high reservation:

- Fixed amount
- For a business day
- Without predefined end date.

Remains valid until modified or deleted.

For limit

RTGS holder instructs/defines:

- Bilateral and/or Multilateral limit
- Fixed amount
- For a business day
- Without predefined end date

Processed SoD next following business day.

Min. 1mn EUR.

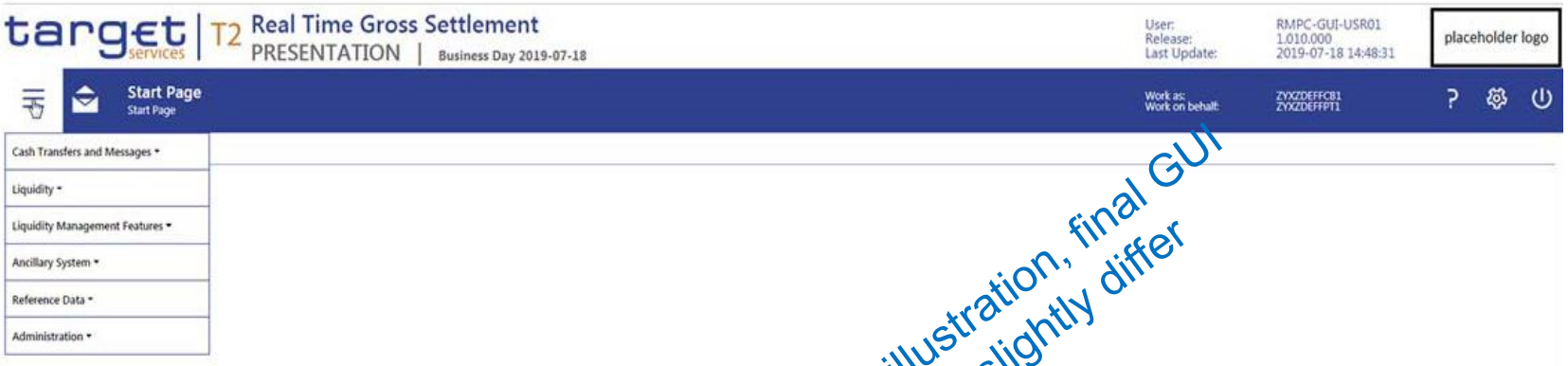
2. The new T2 - RTGS
8.3 RTGS account functionalities: messaging and report

RTGS account holder can set-up the following (messaging) functionalities :

Function	
Message subscription	Receipt of certain message types – set up by RTGS actor or its CB - maintained in CRDM. Example: - System Event Notification - Return Business Day Information - Resolution of Investigation - Bank to Customer Debit Credit Notification - Payment Status Report
Report configuration	One statement of accounts report can be configured. Produced during EoD. Specifications possible for delivery mode and respective recipients.
Routing configuration	Definition of the technical address to which reports, notifications and forwarded payment messages are sent to.

2. The new T2 - RTGS
9. New GUI: Latest developments

- ✓ 5 GUI workshops during 2019: Focus on new CLM and RTGS GUI design and functionality.
- ✓ ECB consulted NCBs opinion; work in progress.
- ✓ UHB expected for Q3/2020.
- ✓ Pacs.008 and pacs.009 COR (MT103 and MT202) functionalities U2A in the future RTGS GUI.
- ✓ Not yet decided if pacs.009 COV (MT 202 COV) shall be made available in GUI - U2A
- ✓ Not yet decided if pacs.004 shall be made available in GUI – U2A.
- ✓ Pacs.010 (direct debit) only available in A2A per UDFS.
- ✓ The future GUIs will use «bookmark functionality» inside the application (set-up and store query / templates).
- ✓ Large queries limitation to 2000 results (complete query can still be downloaded).



Non binding illustration, final GUI details may slightly differ

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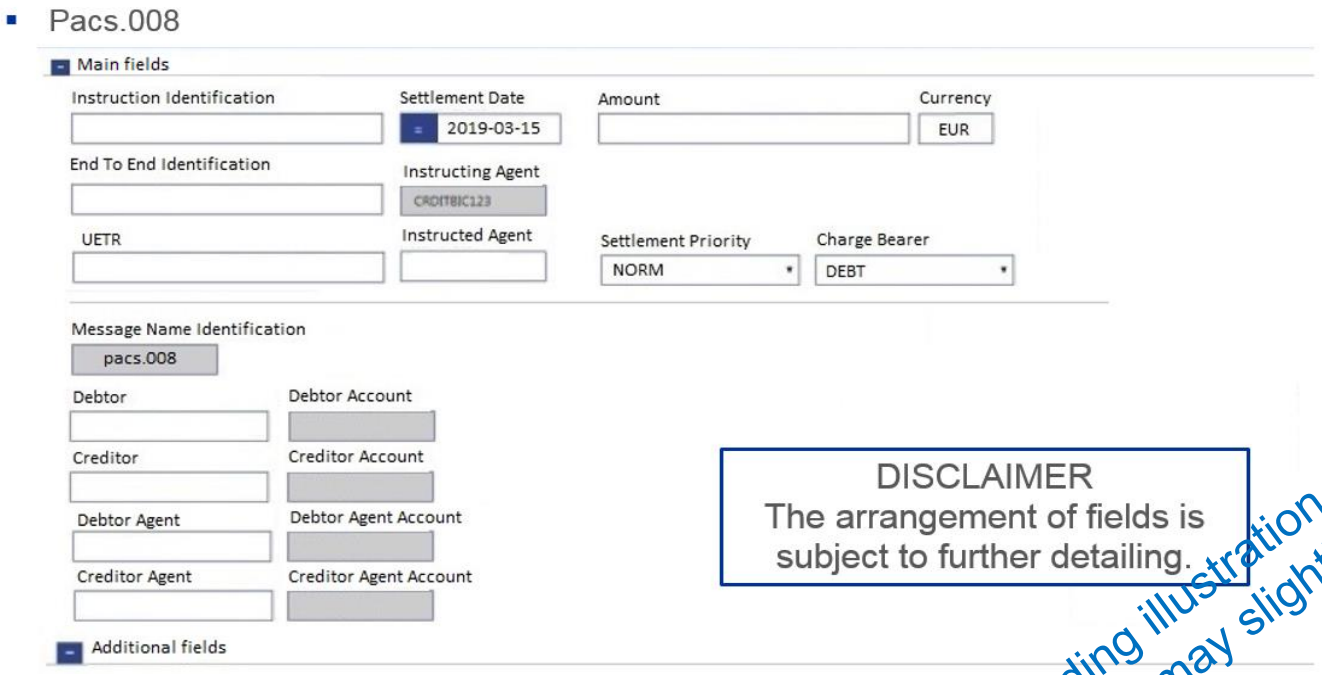
9. New GUI: Latest developments

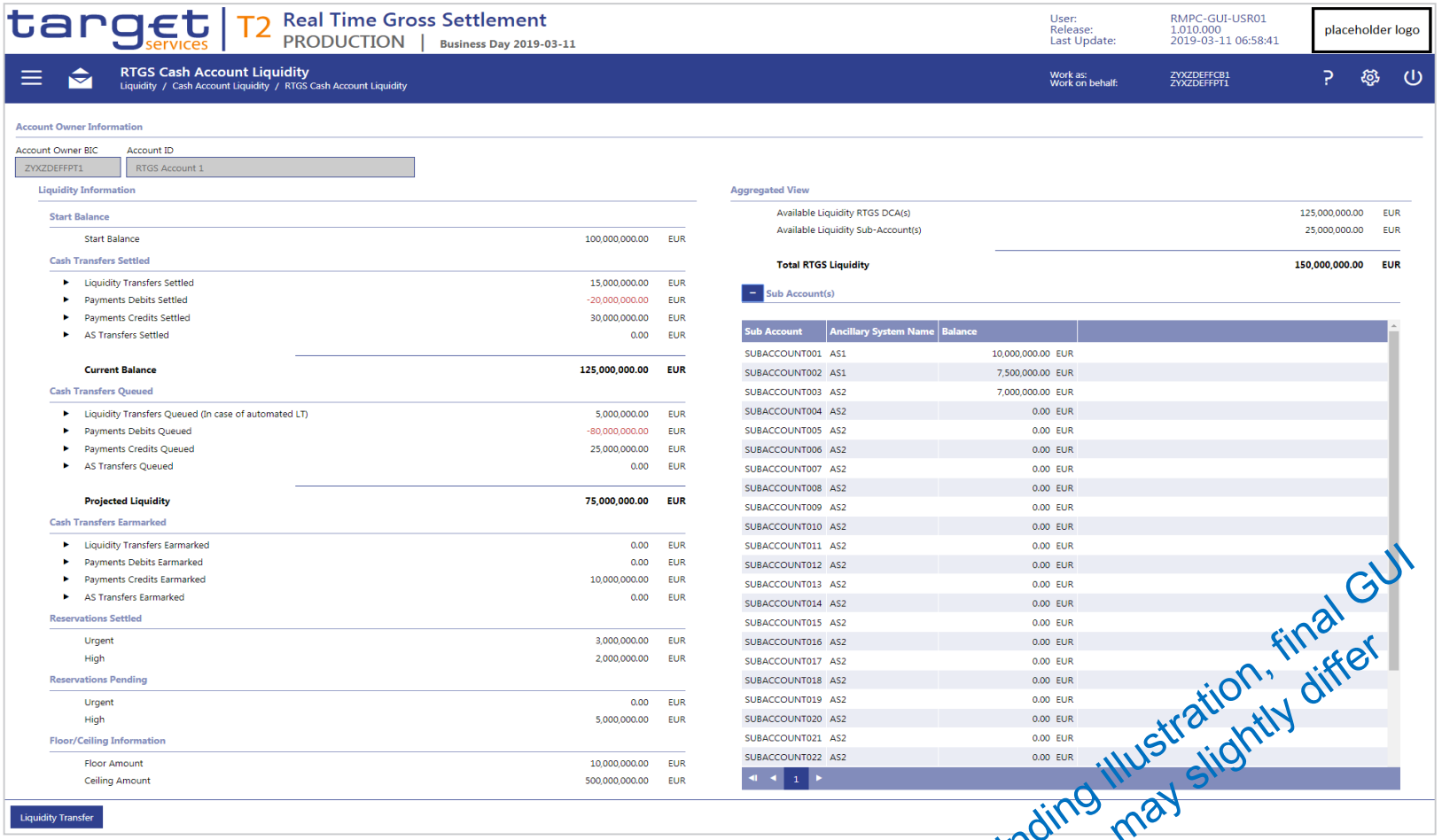
- ✓ Different options how to structure the U2A payment order capture screens: schema based screens based on XML schema **or** more customised screens for pacs.008, pacs.009. Ongoing discussion based on pros and cons.
- ✓ Example of a customised screen:



DISCLAIMER
The arrangement of fields is subject to further detailing.

Non binding illustration, final GUI details may slightly differ

2. The new T2 - RTGS
9. New GUI: Latest developments



Non binding illustration, final GUI details may slightly differ

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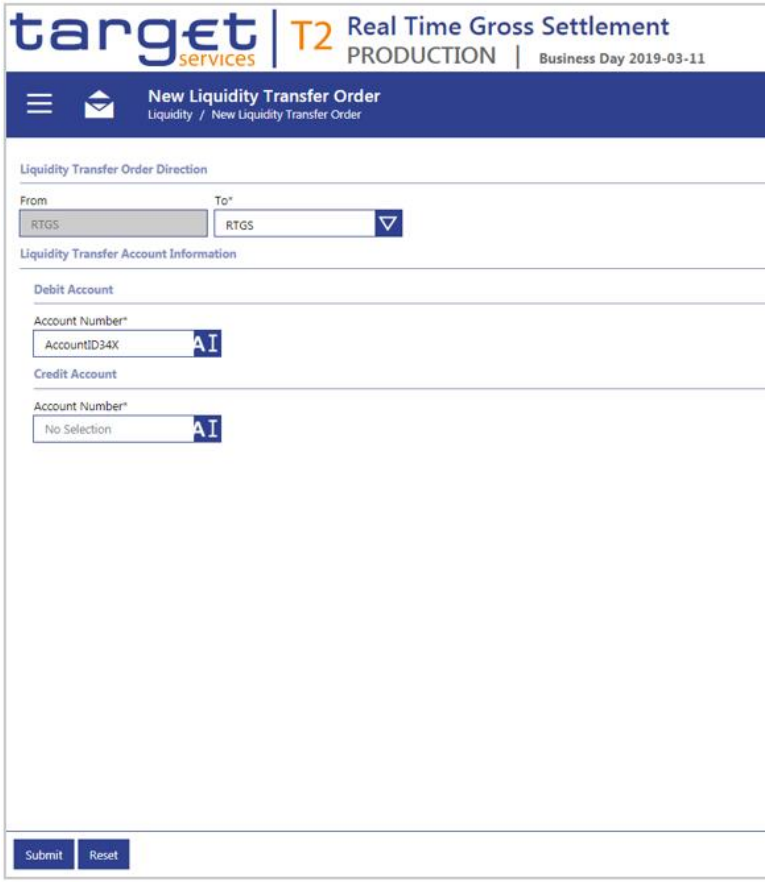
9. New GUI: Latest developments



Non binding illustration, final GUI details may slightly differ

AGENDA

1. Introduction
2. The new T2
3. The co-management
4. Readiness, timeline, testing and migration
5. The Network Service Providers
6. TIPS & ECMS

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3. The co-management
General principles

The co-management is an **optional** feature in **CLM**

General Principles

- ✓ Allow banks to fully or partially delegate their MCA management (in CLM) to a co-manager *(for example, in case a MCA Holder does not establish an own technical connectivity to access CLM, all activities can be delegated to a co-manager).*
- ✓ A flag allow CBs to identify that the account is co-managed and who is the co-manager.
- ✓ Co-Manager must be a MCA Holder.
- ✓ The privileges/roles assigned to the user of the CLM Account Holder are also applicable for the co-managed account without limitations. *(This means in case the user of the CLM Account Holder has the privilege to query the account balance, the user can see the balance of the account(s) in the data scope of his party and in addition, the balance of the co-managed account.)*

The Co-management functionality will be available for all CLM account holders: any CLM account can be co-managed and any CLM account holder can become a co-manager (subject to both parties agreeing to this).

3. The co-management
Technical set-up

Technical Set-up

- ✓ Party creation: the party technical address of the co-manager must be entered to enable the co-manager to receive all the messages related to the co-managed account(s).
- ✓ Cross-border set-up are possible (i.e. the co-manager and the co-managed actors are in different countries, under different central banks). (*The CB of the account to be co-managed has to set up the co-management.)*

The Co-management functionality will be available for all CLM account holders: any CLM account can be co-managed and any CLM account holder can become a co-manager (subject to both parties agreeing to this).

3. The co-management
Access rights

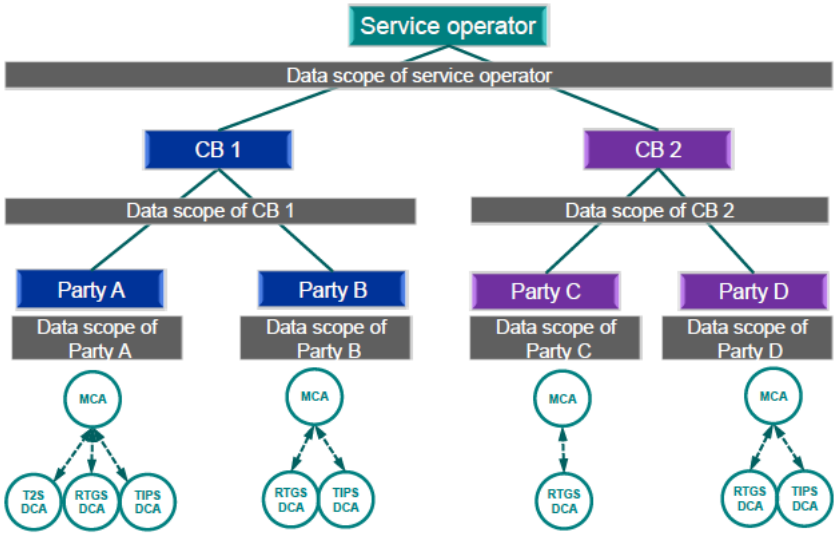
The **data scope** of an individual user results from the hierarchical structure of T2 actors:

1st - The T2 Service operator (4CBs) can access the widest possible data scope

2nd - A specific Central Bank's data scope is limited to its community

3rd - A Party's data scope is limited to its business under a specific Central Bank

4th - An individual user's data scope is limited to its Party's data scope



About an individual user data scope:

- ✓ Each user is assigned one or several **predefined roles** for each specific service or component.
- ✓ A role is a set of privileges that defines which business functions are assigned to a user
- ✓ Each privilege defines the type of action authorized for a business function: "read-only" or "write".
- ✓ In A2A mode, business functions apply the two-eyes principle. In U2A, it is either two-eyes or four-eyes principle.

3. The co-management
Co-manager rights

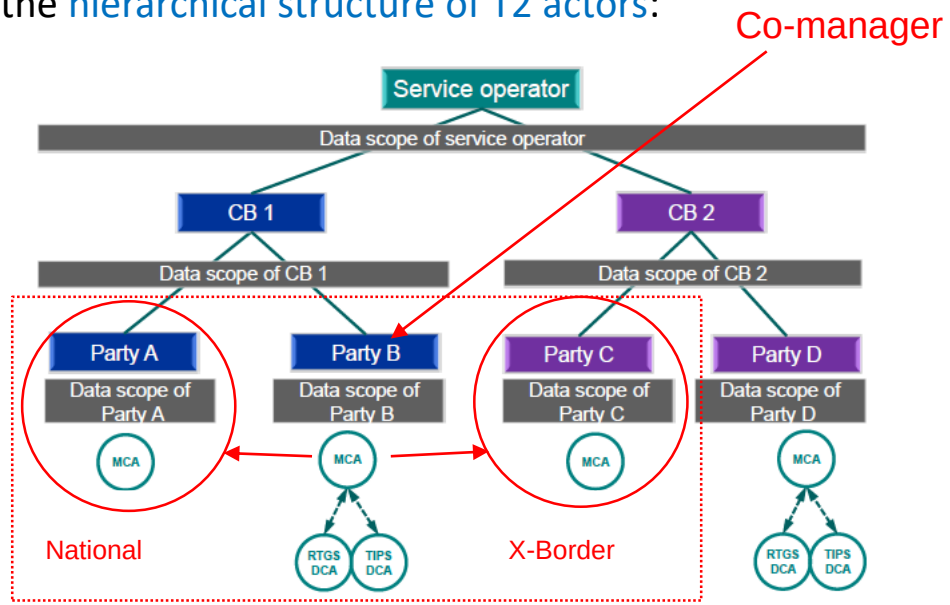
The **data scope** of an individual user results from the hierarchical structure of T2 actors:

1st - The T2 Service operator (4CBs) can access the widest possible data scope

2nd - A specific Central Bank's data scope is limited to its community

3rd - A Party's data scope is limited to its business under a specific Central Bank

4th - An individual user's data scope is limited to its Party's data scope



Co-management data scope

Change in the pyramidal / hierarchical concept of the data scope propagation

3. The co-management
Co-manager rights

Co-manager rights

- The co-manager can:
  - ✓ initiate liquidity transfer orders (camt.050) on the co-managed MCA (including the setting up of overnight deposits on the overnight deposit account linked to the co-managed CLM Account Holder);
  - ✓ create, modify and delete a current reservation on the co-managed MCA;
  - ✓ receive status information about inbound messages, cash transfers and task queues for the co-managed MCA; *(1)*
  - ✓ set up message subscriptions in CRDM related to the co-managed accounts (in case the relevant privileges are provided by the respective CB);
  - ✓ receive the report "statement of accounts" (BankToCustomerStatement (camt.053) for the co-managed MCA(s); *(2)*
  - ✓ initiate overnight deposits and overnight deposit reverse order on the overnight deposit account linked to the co-managed CLM Account Holder and;
  - ✓ submit query requests to CLM to request information about the co-managed account(s) with regards to: e.g. account, available liquidity, cash transfer(s) and minimum reserve.

each privilege a user has been granted can be used for its own MCA and/or the co-managed MCA.
It is not possible to limit a privilege to one MCA.

All these activities can be done in **A2A or U2A mode**, depending on the set-up of the respective co-manager.
The co-manager and the owner of the co-managed account do not need to be technically under the same system entity of a CB.

(1) In order to receive messages, a routing configuration with the party technical address of the co manager and message subscription must be set-up.
(2) In order to receive the report, a report configuration for the co-manager must be set-up.

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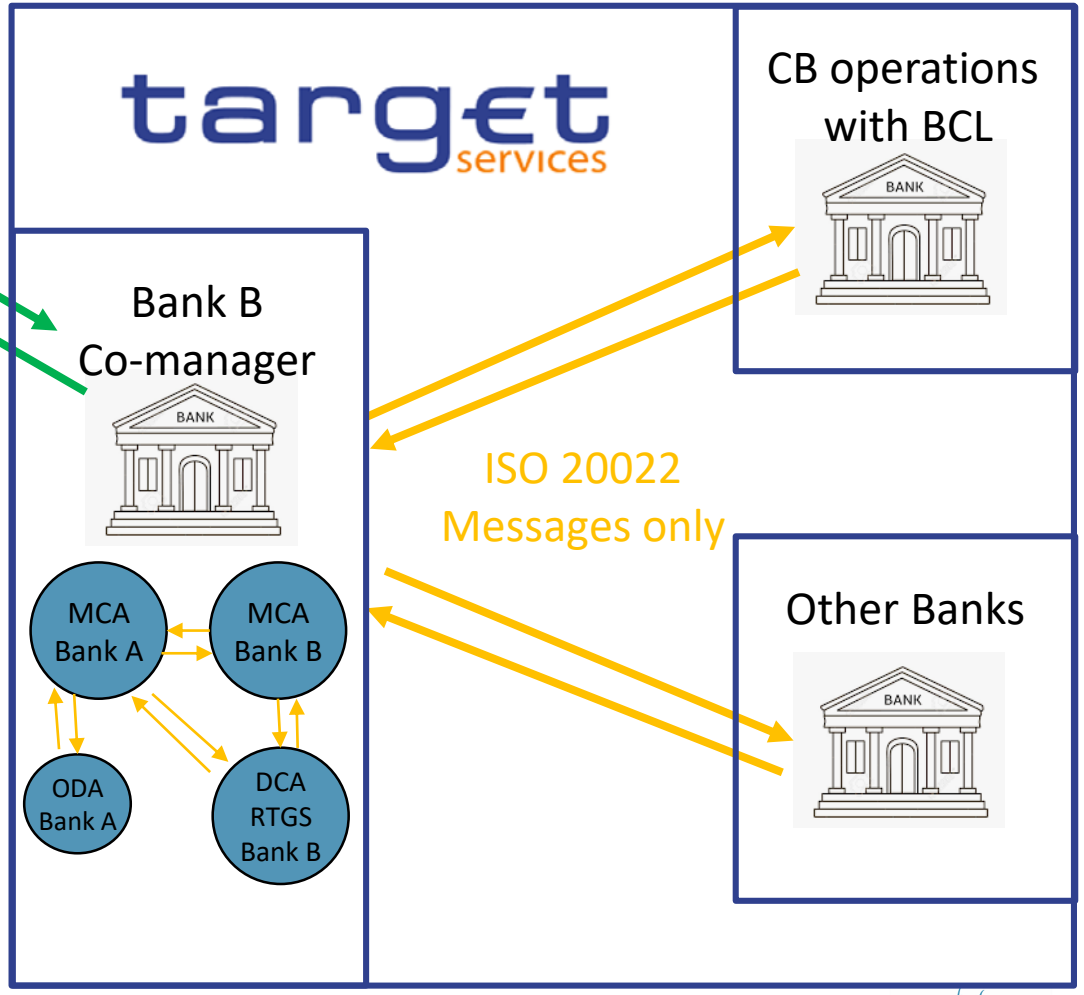
3. The co-management
Interactions between actors

Bank A
Co-managed

Exchange of messages via:
- *Fax / Phone*
- *Secured email*
- *ISO 15022*
- *Co-manager dedicated GUI*
- *(ISO 20022)*

SLA to be defined between parties. Actions to be performed by the Co-manager bank B (non exhaustive list):

- **Liquidity Management**:
  - MCA Funding* (by the co-manager or an other Cash correspondant)
  - MCA management for monetary policy purposes (e.g. LT from MCA bank A => ODA bank A) upon co-managee instruction
  - MCA de-funding done by the co-manager upon co-managee instruction.
- **Reporting**: Bank B to:
  - subscribe to reports (statement of account)
  - Monitor fulfillement of minimum reserve requirements via queries



** As per co-management & cash correspondants agreements (optionnal)*

3. The co-management
Motivation to become a co-manager (optional)

2 reasons to become a co-manager:

- **[1]** Become a co-manager for «intra-group» purposes only, to co-manage branches or group entities *(can be performed in U2A or A2A, i.e co-manager has a configuration A or B)*

- **[2]** Develop a co-management offer for any third party (in Luxembourg / in Europe) *(should be performed in A2A; i.e co-manager has a configuration A)* ⇨ In case of interest please contact BCL before 30/09/2019

STEPS to [2] develop your co-management offer:

1. Analyse your business case. How many banks use your cash correspondant services today ? Potential targets are:
   - ✓ Banks in Luxembourg only,
   - ✓ Luxembourg-based branches of foreign banks,
   - ✓ Any bank in EU
2. Define your scope with co-managed entities. (Communication & messaging outside Target services)
3. SLA Definition
4. Get prepared to manage the co-managed entities like you would manage your MCA (tests, set-up, etc)
5. Co-managed bank to fill in registration forms with the co-manager and the BCL

If you develop a co-management offer, it will be an alternative to a direct management of a MCA by a MCA holder. To define an appropriate pricing, you should consider (1) project costs that participants will face until 2021, and (2) connectivity costs necessary to access ESMIG.

3. The co-management

NSPs maximum prices for participants connecting to ESMIG

https://www.ecb.europa.eu/paym/intro/news/html/ecb.mipnews190708.en.html

		SWIFT	SIA	SWIFT	SIA
FEE TYPE	**PRICE FOR**	**Standard c/p**		**Low volumes c/p**	
PROD One-off fees	installation of one single point of presence	0	15000	-	-
	minimum set of software and hardware components	0	5000	0	100
	registration	10000	10000	10000	2400
	issuing one PKI certificate	0	100	-	-
	sub total	*10000*	*30100*	*10000*	*2500*
PROD Recurring fees	yearly fee for utilisation and maintenance of a single PoP configuration	2500	1000	-	-
	yearly fee for utilisation and maintenance of a minimum set of software and hardware components	7500	70000	2000	2400
	yearly fee for the customer support service	4250	3000	0	100
	yearly fee for PKI maintenance	75	50	-	-
	sub total	*14325*	*74050*	*2000*	*2500*
PROD Communication fees	transmission of a single message via the store-and-forward channel	0.007	0.048	-	-
	transmission of a single request-response via the real-time channel	0.007	0.01	-	-
	transmission of each 1 MB of a file or its part thereof via the store-and-forward channel	1.92	1.2	-	-
	transmission of each 1 MB volume or its part thereof via the U2A channel	0.5	1.2	0,5	1
	TIPS - transmission of a message (of max. 10 kB) in A2A mode via the instant message channel	0.0005	0.0005	-	-
	TIPS - Report outgoing only - transmission of each 1 MB of a file or its part thereof via the store-and-forward channel	1.92	0.5	-	-
	DEP- A2A Message retrieval	0.038	0.05	-	-
TEST&TRAINING One-off fees	minimum set of software and hardware components	0	5000	-	
	registration	0	1000	0	500
	issuing one PKI certificate	0	100	-	
	sub total	*0*	*6100*	*0*	*500*
TEST&TRAINING Recurring fees	utilisation and maintenance of a minimum set of software and hardware components	0	5000	0	1000
	yearly fee for PKI maintenance	75	50	-	-
	sub total	*75*	*5050*	*0*	*1000*
TEST&TRAINING Communication fees	transmission of a single message via the store-and-forward channel	0.0035	0.001	-	-
	transmission of a single request-response via the real-time channel	0.0035	0.005	-	-
	transmission of each 1 MB of a file or its part thereof via the store-and-forward channel	0.96	1.2	-	-
	transmission of each 1 MB volume or its part thereof via the U2A channel	0.25	1	0.25	1
	TIPS -transmission of a message (of max. 10 kB) in A2A mode via the instant message channel	0.00025	0.00025	-	-
	TIPS - Report outgoing only - transmission of each 1 MB of a file or its part thereof via the store-and-forward channel	0.96	1,2	-	-
	DEP- A2A Message retrieval	0.019	0.1	-	-

This table shows the «Maximum Prices» applied by NSPs for the minimal service offer to connect to ESMIG.

Participants (non-Target2) with reasonable CB activities will compare:

- Efforts and costs to connect to CLM on their own (ensure a connectivity & run a project, following milestones)
- Efforts and costs to delegate connectivity and major project steps to a co-manager.

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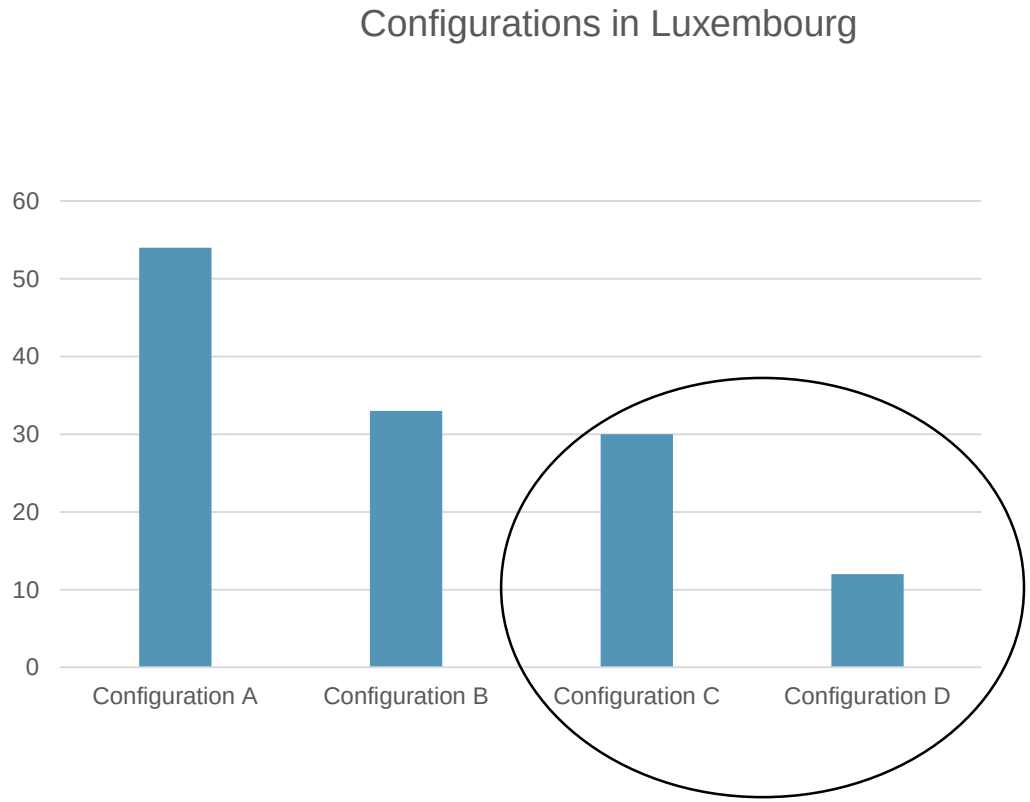
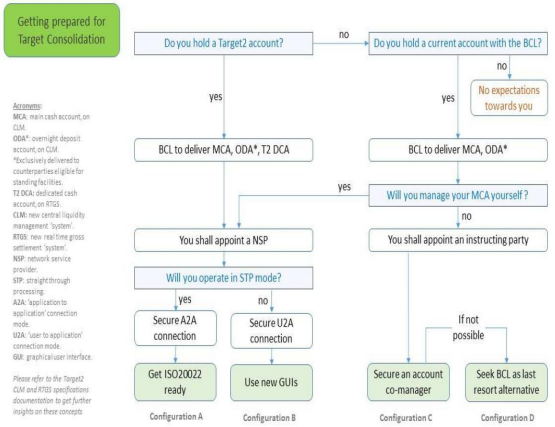
4. Readiness, timeline, testing and migration

Results of the survey





Type	Total
A	55
B	33
C	30
D	12

At least 42 Banks envisaged to appoint a co-manager (as per our survey in May 2019)

AGENDA

1. Introduction
2. The new T2
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4. Readiness, timeline, testing and migration
5. The Network Service Providers
6. TIPS & ECMS

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4. Readiness, timeline, testing and migration
Migration Strategy

TARGET Consolidation will be implemented in a 'big bang' mode in November 2021.

- From one day to another, the existing infrastructure will be replaced with a new one.
- The current systems will no longer be maintained after the Go-live. There will be no grandfathering period and no coexistence of the two infrastructures.
- Unprepared participants will lose their access to the Target2 services. They might also no longer be able to fulfill their mandatory minimum reserves obligations.

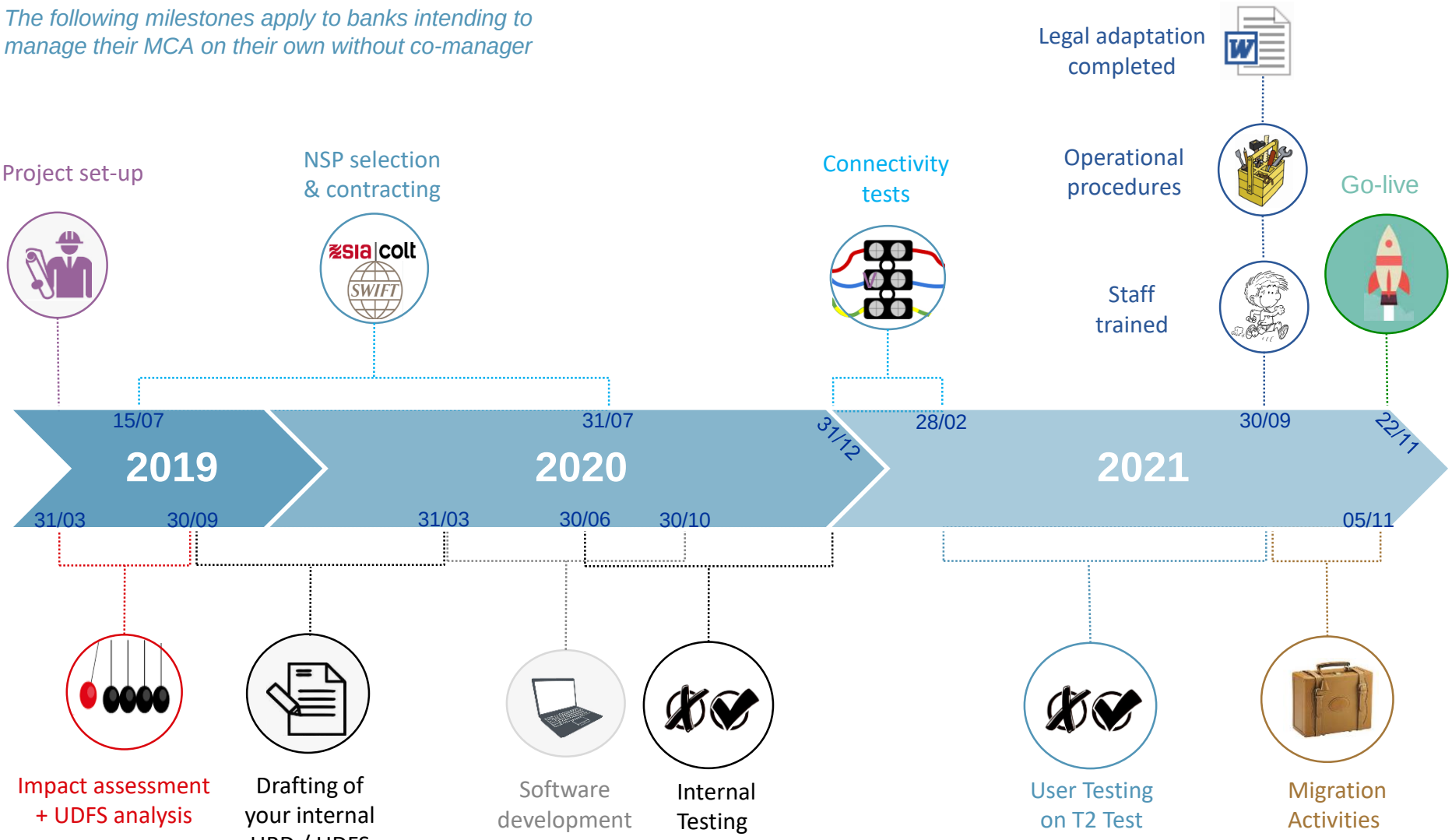
The **banking community readiness will therefore be a key factor for a successful transition**.

With this objective in view, the Eurosystem has designed a readiness framework, whereby the participants will be invited to report periodically their progresses for a series of **key milestones**

4. Readiness, timeline, testing and migration

Overall Key Milestones defined by ECB

The following milestones apply to banks intending to manage their MCA on their own without co-manager



https://www.ecb.europa.eu/paym/pdf/consultations/Overall_key_milestones_to_ensure_a_successful_big-bang_migration_in_November_2021.pdf

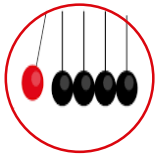
4. Readiness, timeline, testing and migration
Overall Key Milestones defined by ECB

Project Set-up

✓ Completed

✓Participants nominate a project manager and,
✓ set-up the project (allocated resources, required budget and started the impact analysis).

Impact assessment



31 March 2019 - 30 September 2019 (6 months)

✓Participants perform the detailed business and technical impact assessment to adapt their IT systems and processes to the changing services of T2. This includes the impact assessment on how to connect their IT systems to T2.
✓Participants analyse the UDFS 2.0 (CLM + RTGS)

4. Readiness, timeline, testing and migration
Overall Key Milestones defined by ECB

Drafting of your internal URD & UDFS

30 September 2019 - 31 March 2020 (6 months)

✓Participants have started the drafting of their internal *applications* documentation (e.g. business requirements and functional specifications for key functionalities).

Software development

31 March 2020 - 30 October 2020 (7 months)

✓Participants have started their internal developments to adapt their IT systems and processes to T2.

✓This milestone encompasses software development and also:

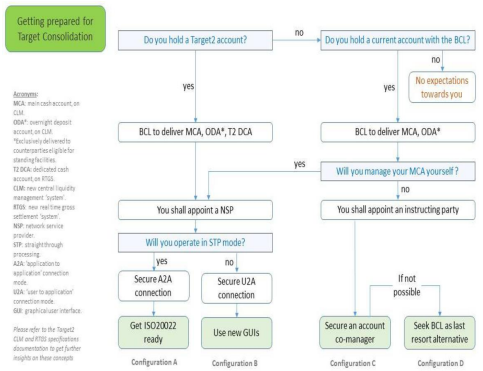
- ✓(re) mapping of messages
- ✓(re) configuration of existing tools
- ✓Design of your new T2 operating model

4. Readiness, timeline, testing and migration
Overall Key Milestones defined by ECB

NSP selection & contracting

15 July 2019 - 31 July 2020 (1 year)

- ✓Participants have developped the selection criteria for the network service providers (e.g. decision on direct or indirect connection, value added services expected from network service providers). **[15/07/2019]**
- ✓Participants have completed the new connectivity design strategy (e.g. on U2A/A2A) and planning. **[31/12/2019]** – BCL will send you again the "configuration" questionnaire.
- ✓Participants have selected their network service provider and completed the preparation for the contract signature. **[31/03/2020]**
- ✓Participants have procured and signed a contract with their selected network service provider. **[31/07/2020]**



+

BCL Infosession with NSPs

+

Bilateral meetings with NSPs

4. Readiness, timeline, testing and migration
Overall Key Milestones defined by ECB

Internal Testing

30 June 2020 - 31 December 2020 (6 months)

- ✓Participants have completed their internal testing of key functionalities to enable the User testing and migration.
  - ✓Validation of internal developments.
  - ✓Validation of new messages (ISO20022)
- ✓Participant can use the SWIFT Readiness Portal (provided free of charge) to validate the format of the new ISO 20022 messages they will use.
- ✓Participant can use other Testing platforms proposed by NSPs (may include additional fees).

https://www.swift.com/our-solutions/compliance-and-shared-services/mystandards/mystandards-readiness-portal_testing-made-simple/for-securities

MyStandards Readiness Portal

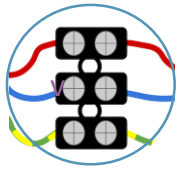
The Readiness Portal provides capabilities for autonomous testing the **compliance of messages** with the specifications provided in the User Detailed Functional Specifications (UDFS) and SWIFT MyStandards, while the **progress and results of the tests can be fully monitored**.

For each of the SWIFT MyStandards subgroups RTGS and CLM a corresponding portal has been set up, which includes respectively the CRDM messages.

As it was meanwhile agreed to extract CRDM messages into a separate subgroup for messages related to common components (CoCo) the respective messages have also to be transferred in a segregated Portal. This Activity will be carried out before Mid September.

4. Readiness, timeline, testing and migration
Overall Key Milestones defined by ECB

Connectivity Tests



31 December 2020 - 28 February 2021 (2 months)

- ✓ Participants have completed the connectivity testing on the testing environment and are ready to start the user testing. The ECB will publish a connectivity guide in Q4 2020 to support participants. Connectivity tests consist in:
  - ✓ establishing the A2A connectivity between the Party's systems and ESMIG via NSP;
  - ✓ ability to log on to ESMIG landing page (U2A)

User Testing on T2 Test

1 March 2021 - 30 September 2021 (7 months)

- ✓ Participants have completed the user testing:
  - ✓ Fill test registration forms to be created in UT
  - ✓ Certification tests required by the Eurosystem.
  - ✓ Functional tests – verification of correct end-to-end interaction; includes interoperability, community and business day tests
  - ✓ Migration tests (migration week end dress rehearsals) planned by the ECB to prepare to the migration [start at least 6 months before go-live in UT]
  - ✓ Operational tests – verification of the operational procedures
- ✓ Participants are ready to start the migration activities on the production environment.

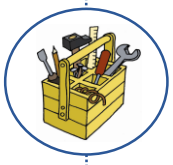
4. Readiness, timeline, testing and migration
Overall Key Milestones defined by ECB

Legal adaptation Completed

By 30 September 2021

✓Participants have completed contractual and legal adaptations (e.g. Fill in registration form, adhere to T2 Terms and conditions, co-management agreements…)

Operational Procedures



✓Participants have completed the operational procedure adaptations.

- ✓The Eurosystem will draft a Manual of Operational Procedures (MOP) for the new T2. Participants will then adapt their internal procedures based on this common MOP and based on their internal requirements. Market consultations to be organized on the draft MOP, as of Q2 2021.

Staff Trained

✓Participants have completed internal training for the testing and operational activities.

- ✓The BCL follow the "train the trainer" approach. Participants will be invited to attend BCL's training (limited attendance) and then train the rest of their staff internally. BCL's trainings will take place before the start of UT (01/03/2021).

4. Readiness, timeline, testing and migration
Overall Key Milestones defined by ECB

Migration Activities

By 5 November 2021

✓Participants have completed the pre-migration activities, e.g. setup reference data (e.g. users, access rights, etc.) on the production environment according to the migration plan (playbook), and are ready for the go-live. Participants prepare their Liquidity transfers needed for the first business day after the migration (migration activities).

Go-live

22 November 2021

✓Go-live of T2 service (first business day)

4. Readiness, timeline, testing and migration

OVERALL KEY MILESTONES TO ENSURE A SUCCESSFUL BIG-BANG MIGRATION IN NOVEMBER 2021 (by ECB)

Project Setup	PSE	T2-T2S Consolidation project set-up	Participants nominate a project manager and set-up the project (allocated resources, required budget and started the impact analysis).	31 December 2018
Internal Adaptations	IAD1	Impact assessment is started	Participants start with the detailed business and technical impact assessment to adapt their IT systems and processes to the changing services of T2. This includes the impact assessment on how to connect their IT systems to T2.	31 March 2019
	IAD2	Impact assessment is completed	Participants have completed the detailed business and technical impact assessment to adapt their IT systems and processes to the changing services of T2. This includes the impact assessment on how to connect their IT systems to T2.	30 September 2019
	IAD3	Drafting of internal applications documentation is started	Participants have started the drafting of their internal applications documentation (e.g. business requirements and functional specifications for key functionalities).	30 September 2019
	IAD4	Drafting of internal applications documentation is completed	Participants have finalised the drafting of their internal applications documentation (e.g. business requirements and functional specifications for key functionalities).	31 March 2020
	IAD5	Software development for the required adaptation changes to T2 is started	Participants have started their internal developments to adapt their IT systems and processes to T2.	31 March 2020
	IAD6	Software development for the required adaptation changes to T2 is completed	Participants have finalised their internal developments to adapt their IT systems and processes to T2.	31 October 2020
	IAD7	Testing of the internal applications is started	Participants have started internal testing.	30 June 2020
	IAD8	Testing of the internal applications is completed	Participants have completed their internal testing of key functionalities to enable the User testing and migration.	31 December 2020
Network Service Provider Procurement Process	NSP1	Network service provider selection criteria development is completed	Participants have developed the selection criteria for the network service providers (e.g. decision on direct or indirect connection, value added services expected from network service providers).	15 July 2019
	NSP2	New connectivity design strategy and planning is completed	Participants have completed the new connectivity design strategy (e.g. on U2A/A2A) and planning.	31 December 2019
	NSP3	Network service provider selection and contract preparation is completed	Participants have selected their network service provider and completed the preparation for the contract signature.	31 March 2020
	NSP4	Network service provider procurement is completed	Participants have procured and signed a contract with their selected network service provider.	31 July 2020
Network Connectivity	NCO1	Network connectivity tests are started	Participants start the connectivity testing on the testing environment before user testing activities.	31 December 2020
	NCO2	Network connectivity tests are completed and user testing activities are ready to start	Participants have completed the connectivity testing on the testing environment and are ready to start the user testing.	28 February 2021
User Testing Activities	UTA	User testing activities (including community and dress rehearsals for the migration) are completed	Participants have completed the user testing and have completed the certification tests required by the Eurosystem. Participants are ready to start the migration activities on the production environment.	30 September 2021
Contractual and Legal Adaptation	CLA	Contractual and legal adaptations are completed	Participants have completed contractual and legal adaptations.	30 September 2021
Internal Staff Training	IST	Internal staff training is completed	Participants have completed internal training for the testing and operational activities.	30 September 2021
Operational Procedure Adaptations	OPA	Operational procedure adaptations are completed	Participants have completed the operational procedure adaptations.	30 September 2021
Migration Activities	MAP	Migration activities on production environment are ready to start	Participants are ready to start the migration activities and to setup reference data (e.g. users, access rights, etc.) on the production environment according to the migration plan.	1 October 2021
	MAE	Migration activities are completed	Participants have completed the pre-migration activities and are ready for the go-live.	5 November 2021
Go-live	GLI		Go-live of T2 service (first business day)	22 November 2021

https://www.ecb.europa.eu/paym/pdf/consultations/Overall_key_milestones_to_ensure_a_successful_big-bang_migration_in_November_2021.pdf

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4. Readiness, timeline, testing and migration
Monitoring Framework

Reporting Lines

Closely Monitored Participants	BANQUE CENTRALE DU LUXEMBOURG EUROSYSTEM	(EUROPEAN CENTRAL BANK EUROSYSTEM)	*Before each milestone*
Regularly Monitored Participants	BANQUE CENTRALE DU LUXEMBOURG EUROSYSTEM		*Quarterly basis*
Co-managed Participants	Co-manager	(BANQUE CENTRALE DU LUXEMBOURG EUROSYSTEM)	*TBD*

Info sessions & Meeting

BCL info sessions on TARGET Consolidation
(Q4 2019)
Mandatory for 130 Banks - [1-2] staff max/bank

BCL Trainings on TARGET Consolidation
(Q4 2020 / Q1 2021)
Mandatory for all banks instructing their MCA on their own - [1-2] staff max/bank

4. Readiness, timeline, testing and migration
Next step - NSP selection & contracting

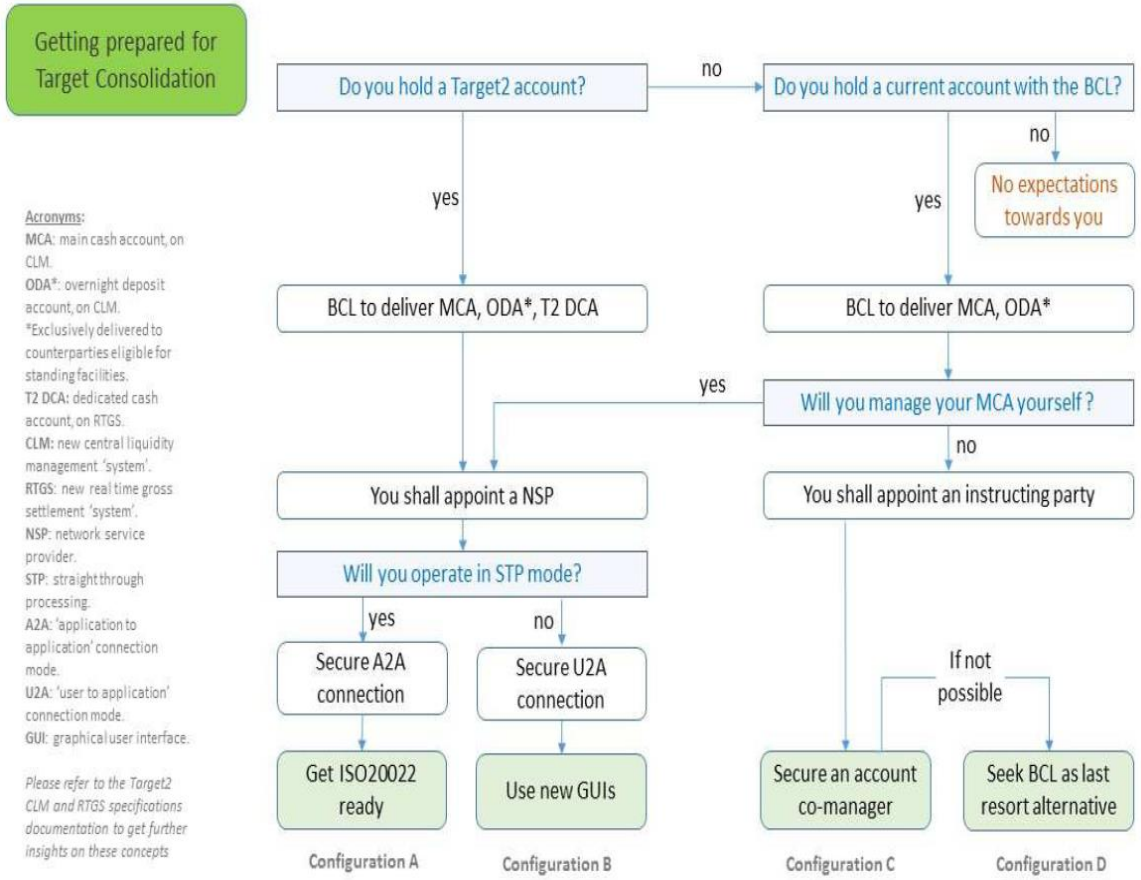
✓Participants have completed the new connectivity design strategy (e.g. on U2A/A2A) and planning. **[31/12/2019]** – BCL will send you again the "configuration" questionnaire.

The banking community in Luxembourg

- Existing Target2 participants (33 banks) will hold a DCA on RTGS and a MCA on CLM.
- All other BCL account holders (95 banks) will hold a MCA on CLM.

Futur management of accounts

- The BCL asked all the banks how they intend to manage their account in the future T2.
- 4 configurations are envisaged:
  - A. Direct management via ISO20022 messages
  - B. Direct management via the Graphical User Interface
  - C. Delegation of the account management to a « co-manager » (who selected configuration A or B)
  - D. Delegation of the account management to the BCL



AGENDA

1. Introduction
2. The new T2
3. The co-management
4. Readiness, timeline, testing and migration
5. The Network Service Providers
6. TIPS & ECMS

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   - SIA COLT
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6. TIPS
Introduction to TIPS

Real-time settlement of instant payments in central bank money

- Settlement of “instant payments” in euro
- SCT Inst scheme participants
- Immediate settlement in central bank money on TIPS DCA
- Operating 24/7/365
- Live since 30/11/2018
- Mobile Proxy Look Up (MPL) in development
- Pricing
  - No entry fee, no fixed fee
  - 0.20 eurocent (€0.0020) per payment sent

6. TIPS
TIPS key features

TIPS DCA part of the T2 perimeter

- Same participation criteria as TARGET
- Liquidity transfers with T2 account during T2 hours
- Counting in the minimum reserves (snapshot at the end of T2 day)

Participants (BIC11)

- Direct participation, holder of TIPS DCA
- Indirect participation as Reachable Party, via access to the TIPS DCA of a Participant

Connectivity and messaging

- ISO20022
- Network Service Provider (NSP) agnostic (currently certified: SIAnet and SWIFT)
- Participants can send and receive (technical intermediation) via Instructing parties (e.g. ACH)

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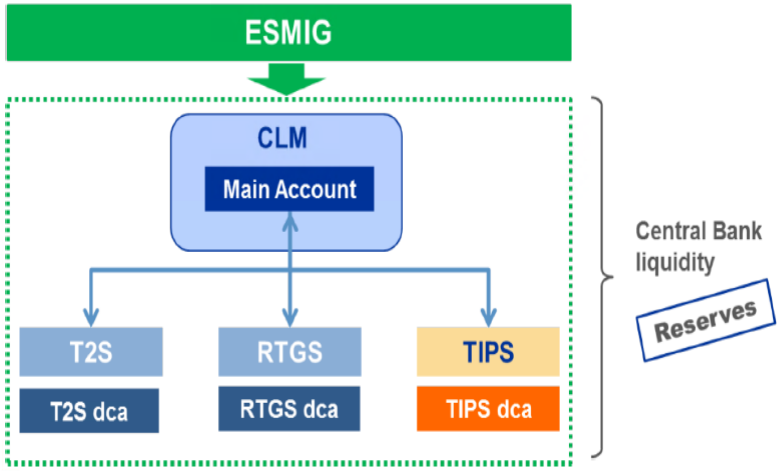
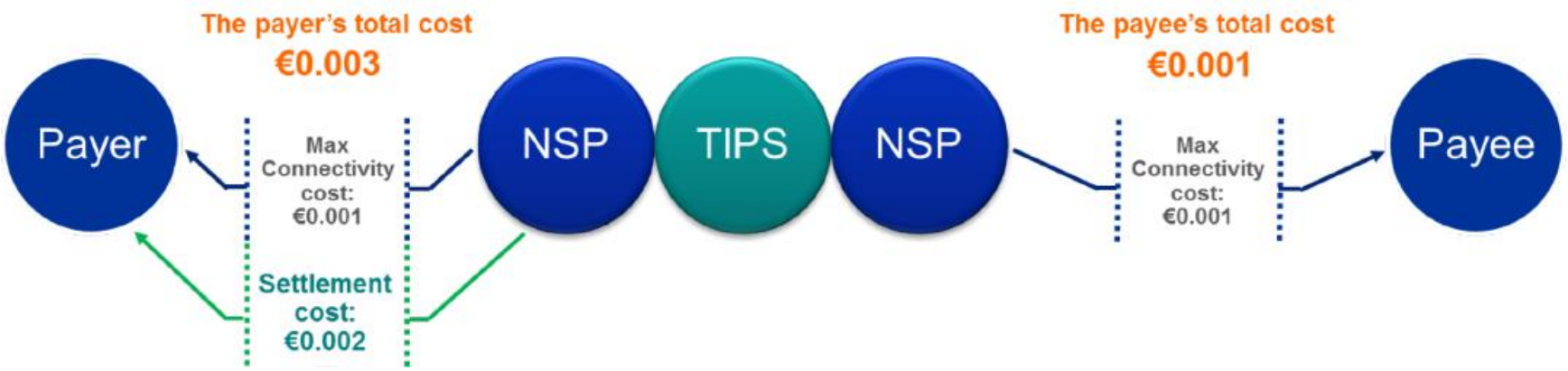
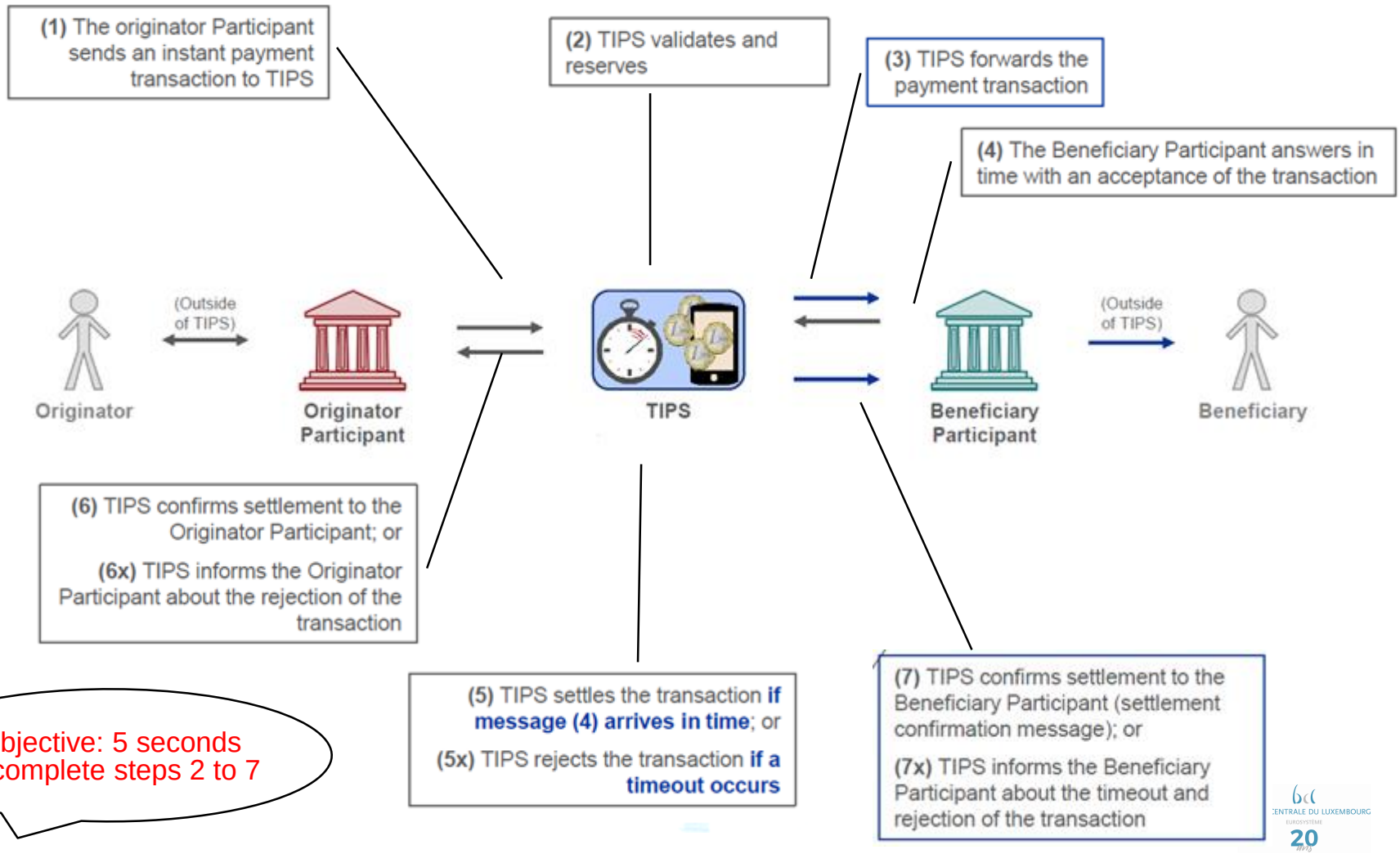
6. TIPS
TIPS flows and architecture





6. TIPS
TIPS detailed flows



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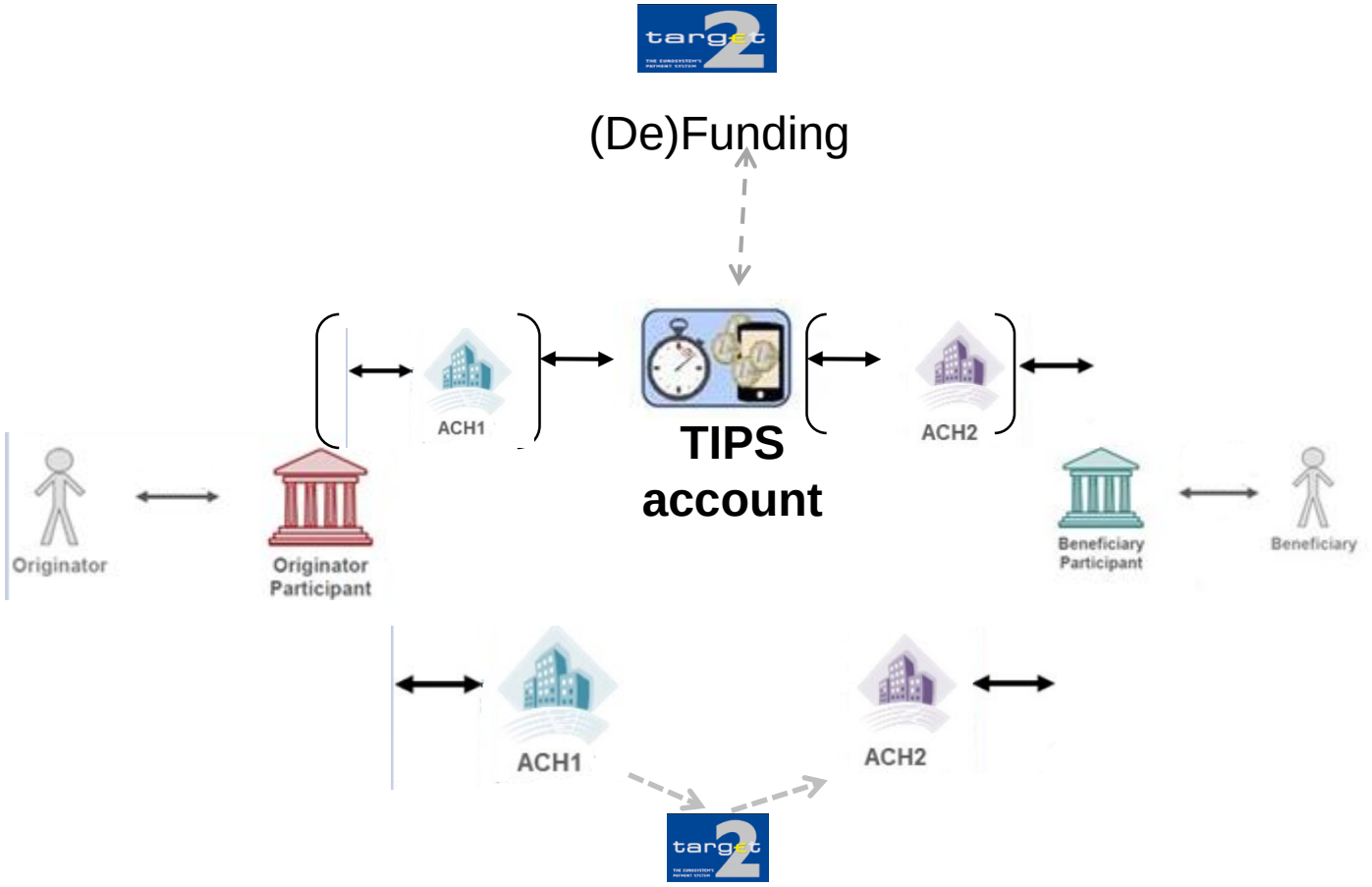
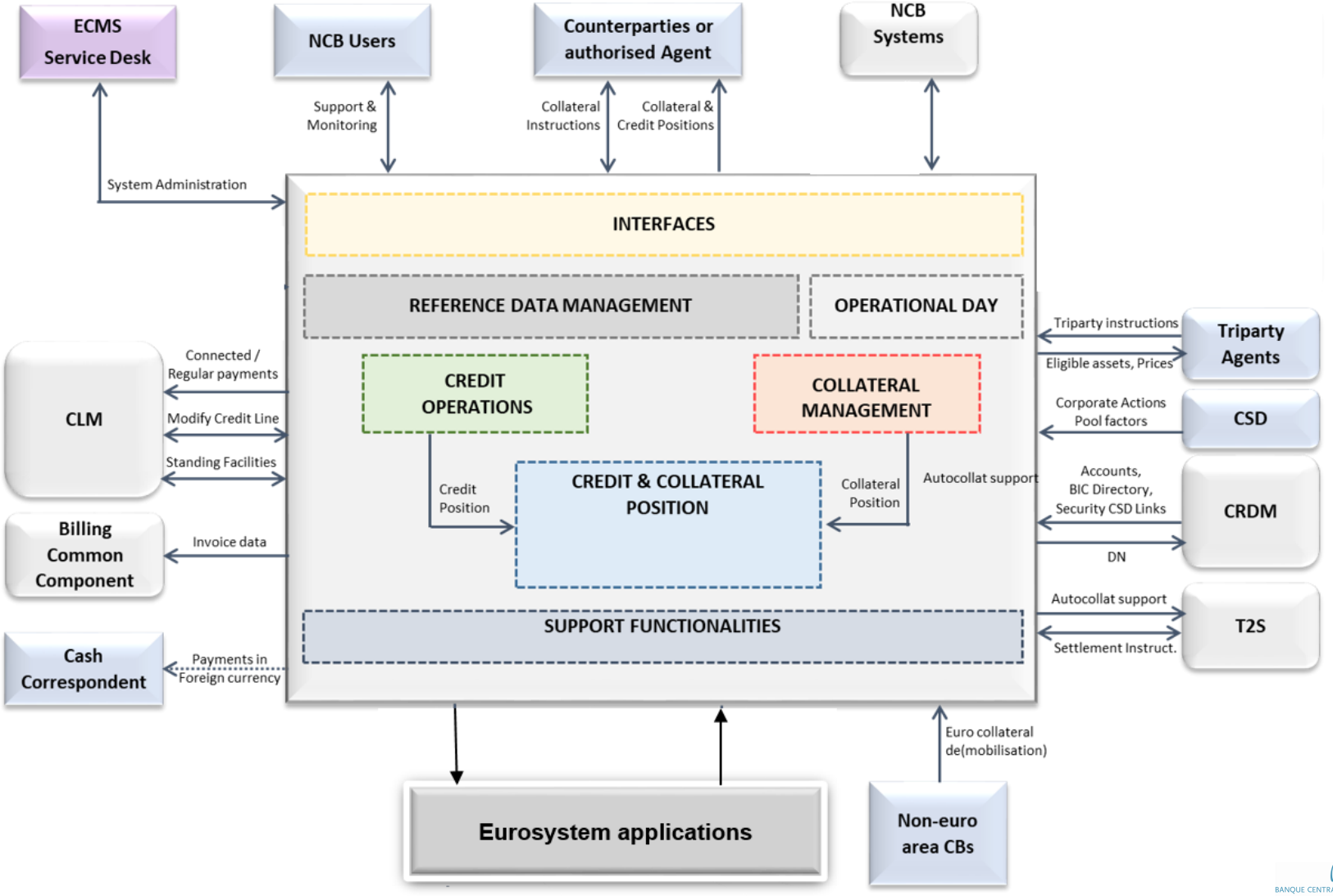
TIPS detailed flows



ASI procedure 6 real-time
Dedicated cash account

6. ECMS
Scope of the project (1/2)



6. ECMS
Scope of the project (2/2)

- Harmonised collateral management activities:
  - Monetary policy operations
  - Intraday credit
  - Harmonisation standards defined by AMI-SeCo (Triparty Collateral Management, Corporate Actions and billing) will be implemented in ECMS
  - All NCBs relevant activities with regards to collateral management (reporting, monitoring, controlling)

- Collateral:
  - Marketable assets in Euro
  - Credit Claims in Euro*

* BCL will use the Credit Claims functionalities as of ECMS go-live. Some NCBs might use it at a later stage

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6. ECMS
ECMS and the counterparties

- New:
  - Connectivity (via ESMIG, in A2A and/or U2A)
  - Messages (ISO 20022 mandatory for ECMS)
  - Some business processes (to be in line with the harmonisation standards)
  - Direct access to the ECMS and its reporting functionalities
  - Terms and conditions

- Potentially New:
  - Collateral Pool structures (to be assessed for each counterparty)
  - Internal procedures

- Unchanged:
  - Bilateral relationship with Banque Centrale du Luxembourg

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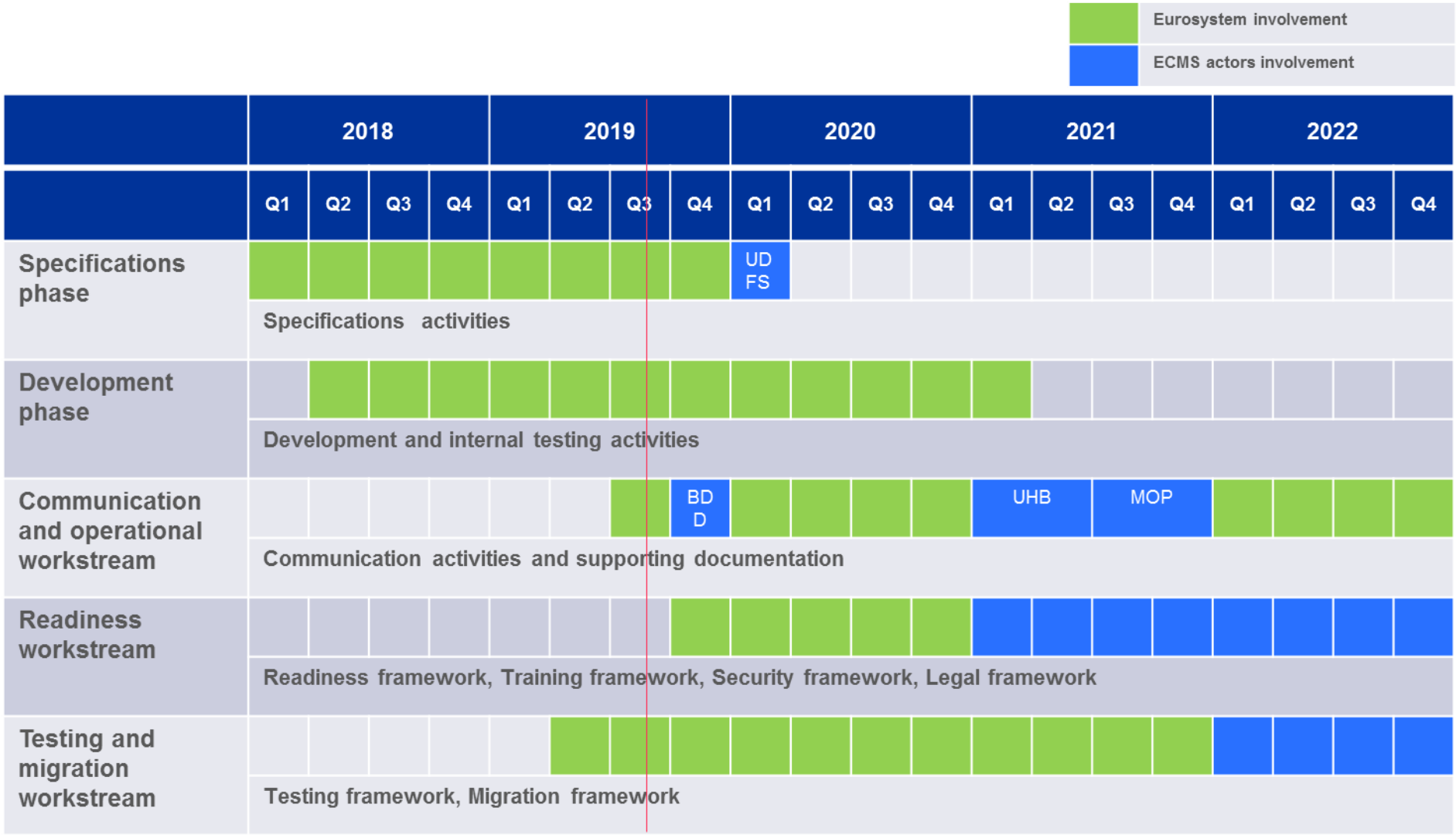
6. ECMS
High level timeline



Contact at BCL : ecms.lu@bcl.lu