

TARGET2/T2S consolidation

Deutsche Bundesbank

- 1** Overview of the TARGET services
- 2 Communication with the TARGET services
- 3 General static data setup in CRDM
- 4 Business Day
- 5 Information Management
- 6 Central Liquidity Management (CLM)
- 7 Real-Time Gross Settlement (RTGS)

1 Overview of the TARGET services

The future TARGET services

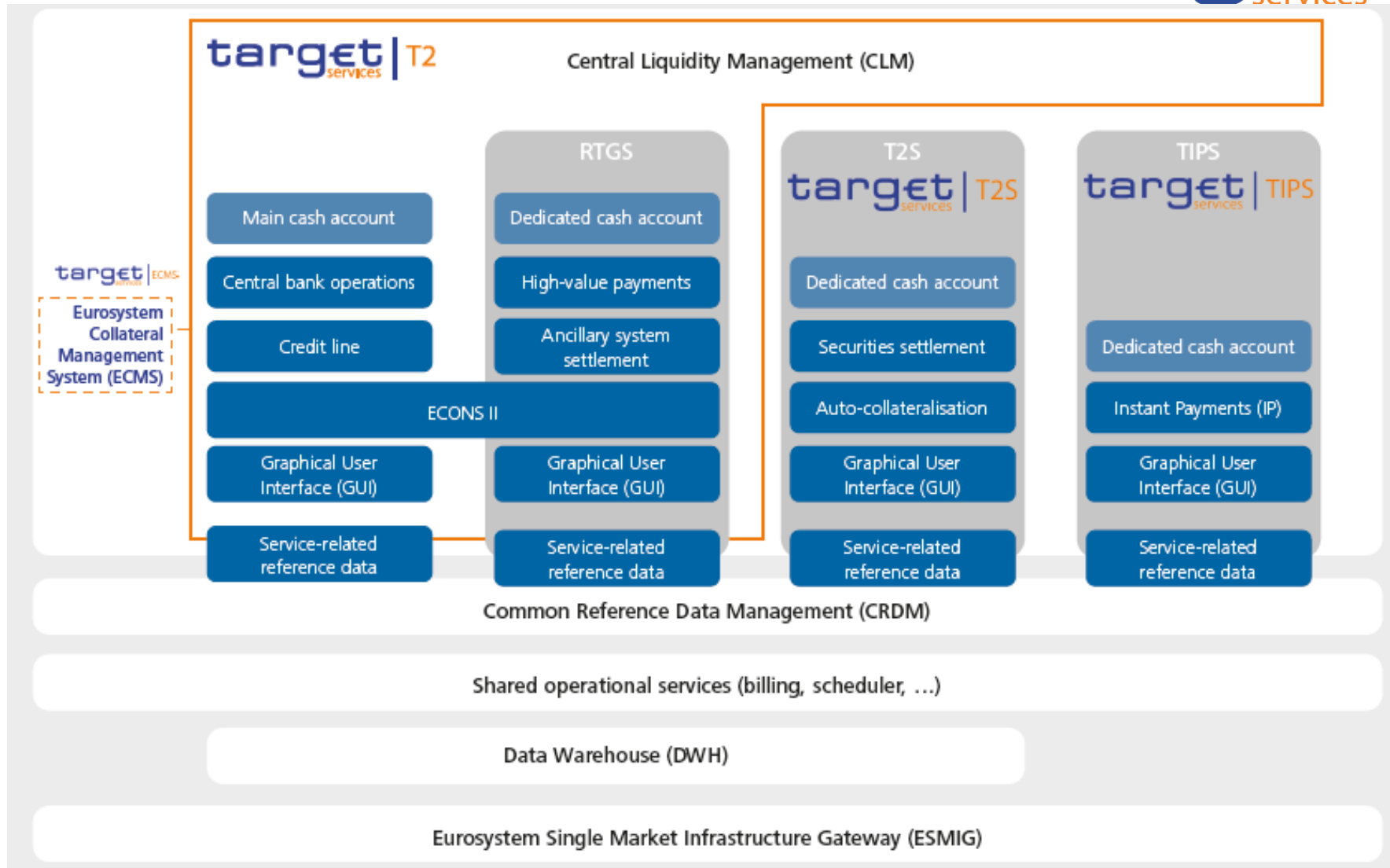
Big Bang incl. milestones

Timeline

Upcoming publications of the Eurosystem

TARGET2/T2S consolidation

The future TARGET services



TARGET2/T2S consolidation

The future TARGET services

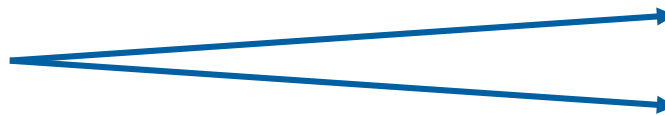


• TARGET services

- T2
- TARGET2-Securities (T2S)
- TARGET Instant Payment Settlement (TIPS)
- Eurosystem Collateral Management System (ECMS)

Settlement services

- Central Liquidity Management (CLM)
- Real-Time Gross Settlement (RTGS)
- T2S
- TIPS



• Common components

- Common Reference Data Management (CRDM)
- Eurosystem Single Market Infrastructure Gateway (ESMIG)
- Data Warehouse (DWH)
- Business Day Management (BDM)
- Billing (BILL)
- Contingency Services (ECONS II)
- Legal Archiving (LEA)

TARGET2/T2S consolidation

Big Bang



- **Big Bang** in November 2022
 - TARGET2 will be switched off in November 2022 following the daily closing on Friday evening prior to the migration weekend
 - **Following** this the **migration weekend** begins
 - The detailed timeline will be defined by the **MTRSG** (Migration Testing Readiness Sub Group)
- ~ 1.250 participants have to migrate to T2 with Deutsche Bundesbank
 - Among these around 980 participants via co-management
- A participant who has **not finished** the changeover **by the launch of T2**
 - ... will not be able to take part in **monetary policy operations**,
 - ... no longer has the ability to fulfil the **minimum reserve requirement**,
 - ... will lose access to **Central Bank Money**,
 - ... is excluded from the **ancillary system settlement**,
 - ... must **realise access via another (direct) participant**.



- **Main reasons for a Big Bang migration and no migration in waves**
 - Switch from Y-Copy to V-Shape
 - Introduction of ISO 20022 compliant messages
- **26 milestones** for a successful Big Bang migration in November 2022

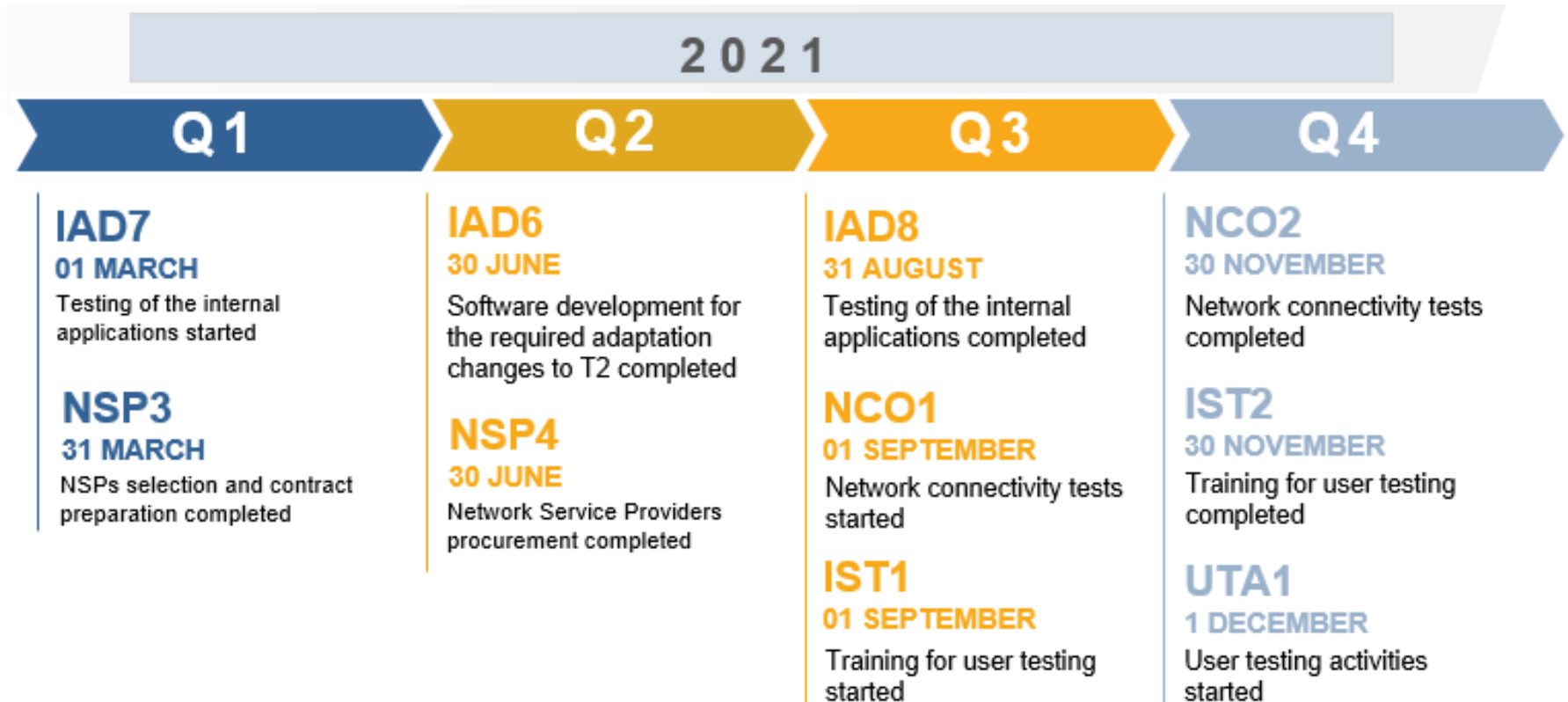
<https://www.bundesbank.de/en/tasks/payment-systems/target2-t2s-consolidation/community-readiness-monitoring/community-readiness-monitoring-842776>

- Regular reporting on the status of the in-house projects via

Community Readiness Monitoring

- The next reporting period covering the new milestones is scheduled for the **end of Q1/2021**
- But: **End of Q4/2020** reporting for all the milestones which have not yet been reported „achieved“

TARGET2/T2S consolidation Big Bang – milestones 2021



TARGET2/T2S consolidation Big Bang – milestones 2022

2022

Q1

Q2

Q3

Q4

NCOP1

01 MAY 2022

Network connectivity tests on production started

NPCO2

31 JULY

Network connectivity tests on production completed

MIG1

22 AUGUST

Pre- Migration activities on production started

OPA

30 SEPTEMBER

Operational procedure adaptations completed

CLA

30 SEPTEMBER

Contractual and legal adaptations completed

UTA2

30 SEPTEMBER

User testing activities completed

MIG2

31 OCTOBER

Pre- Migration on production completed

GLI

21 NOVEMBER

Go-live of T2 service

TARGET2/T2S consolidation Timeline



Description	2019				2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Development phase	[Dark blue bar]															
UDFS	[Dark blue bar]				[Grey bar with chevrons]											
NSP licensing	[Dark blue bar]															
Eurosystem acceptance tests									[Light grey bar]							
Central bank tests													[Light grey bar]			
Community tests													[Dark blue bar]			
Preparation for community tests									[Light grey bar]							
Migration																
Go-live																

Start User Connectivity

December 2021
Start Community Tests

November 2022
Go-Live



TARGET2/T2S consolidation

Upcoming publications of the Eurosystem



Area	Document	Version	Publication
User Detailed Functional Specifications (UDFS)	UDFS for T2 and the common components	V2.2	scheduled for Q1/2021
	Business Validation Rules	Update Q2/2020	28 September 2020
User Handbook (UHB)	RTGS UHB	V1.0	scheduled for end Q4/2020
	CLM UHB	V1.0	scheduled for end Q4/2020
	CRDM UHB	V1.0	31 July 2020
	BDM UHB	V1.0	31 July 2020
	DWH UHB	V1.0	tbd
ESMIG FAQs	Q&A	Addition	14 September 2020
Ancillary Systems	T2 Ancillary Systems Settlement Procedures		16 June 2020

BDM – Business Day Management
 ESMIG – Eurosystem Single Market Infrastructure Gateway

TARGET2/T2S consolidation

Upcoming publications of the Eurosystem



Area	Document	Version	Publication
Explainer	Explainer on automated and rule-based liquidity transfers		28 August 2020
	Explainer on authentication of queries and instructions in T2		10 September 2020
Change Requests	<div style="border: 1px solid #ccc; padding: 5px;"> <p>▼ Change Requests</p> <ul style="list-style-type: none"> CR CSLD-0033-URD User Distinguished Name Relationship CR CSLD-0029-URD De-scoping of U2A direct debits in CLM and RTGS CR CSLD-0031-URD Two-tier excess liquidity remuneration CSLD-0040-URD Removal of Intraday Credit limitation CSLD-0039-UDFS Descoping CSLD validation BICFI and AnyBIC CSLD-0035-URD Parked Immediate LTs CSLD-0038-URD Update CRDM for CLM_RTGS objects CSLD-0030-URD AS sub-type </div>		Available on the website of the ECB

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2 Communication with the TARGET services

Eurosystem Single Market Infrastructure Gateway

Connection to T2 via ESMIG

ISO 20022 messages

Addressing messages

Message routing

Technical and Business Validation

ACK vs. pacs.002

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Eurosystem Single Market Infrastructure Gateway



- **ESMIG as single access point** to the market infrastructures of the Eurosystem

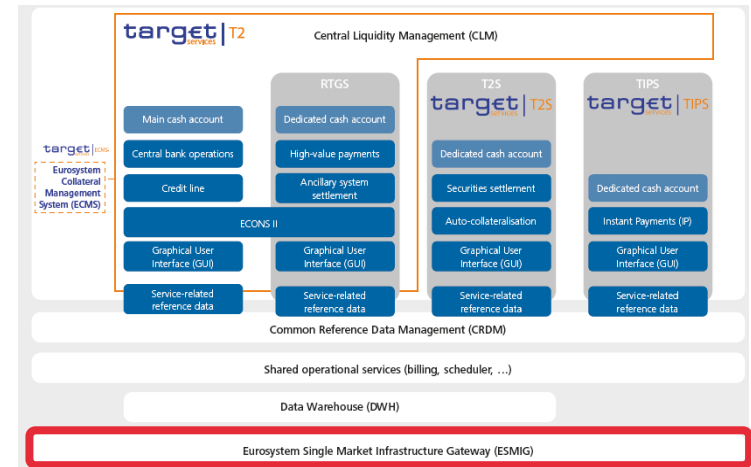
- November 2018 – ESMIG for TIPS
- June 2022 – ESMIG for T2S
- November 2022 – ESMIG for T2
- November 2023 – ESMIG for ECMS*

- Every actor (operator, central bank, payment bank, ancillary system) **must connect via ESMIG**

- Exception: co-management → co-managed payment banks use the infrastructure of the co-manager

- Certified Network Service Providers (**SWIFT and SIA-Colt**) solely offer communication services

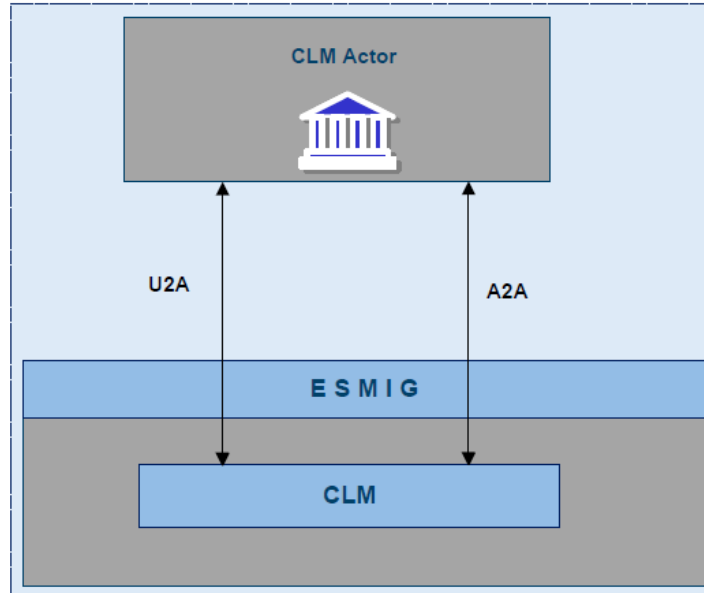
- **Internet-based access will be no longer be provided**
- Instead low-volume (**U2A-only**) access for smaller participants
- **By 30 June 2021** a contract must be signed with one of the Network Service Provider (NSP)



TARGET2/T2S consolidation

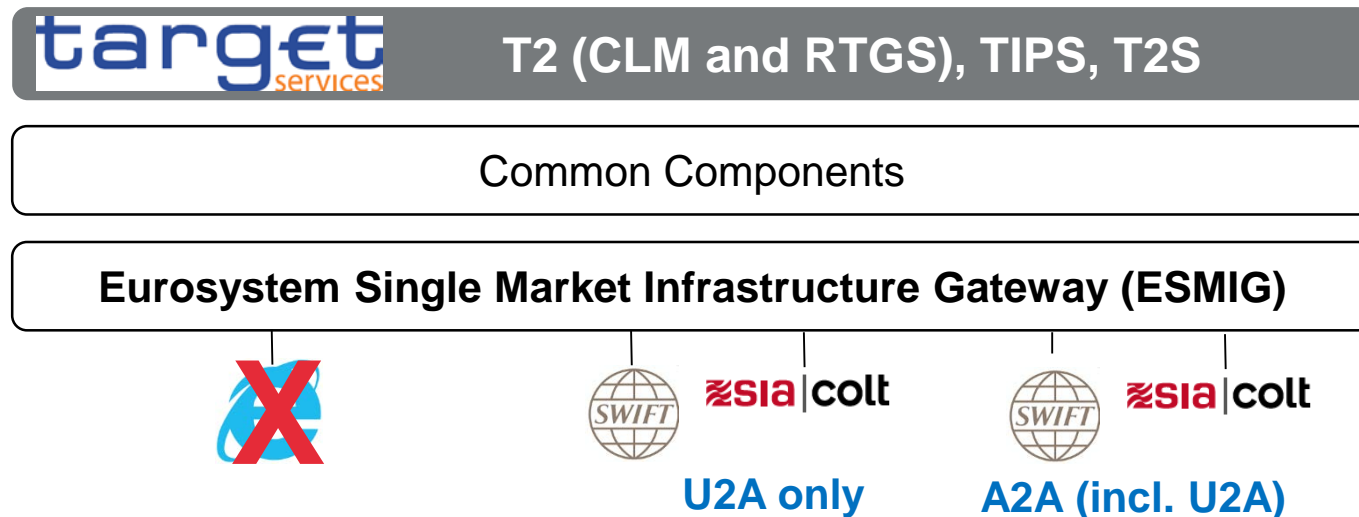
Connection to T2 via ESMIG

- ESMIG is used for all communication with CLM and RTGS



The same for RTGS

- Communication in A2A mode – using ISO 20022 compliant messages – and/or U2A mode – using a GUI – is possible



- Technical access via the NSPs
 - in **U2A (User-to-Application) only**-mode, using the graphical user interface (GUI) of the TARGET Services, and / or
 - in **A2A (Application-to-Application)** - incl. U2A-mode.
- Contrary to today the **internet-based access** will **no longer be provided**. As an **alternative** the **U2A-only-mode** can be used.
- According to the milestone list **an NSP has to be chosen** by **31 March 2021** and a **contract has to be signed** by **30 June 2021**.

- **U2A-only – User-to-Application mode only**

- Exclusive use of the **Graphical User Interface** (GUI) by a person
- ISO 20022 compliant messages cannot be sent or received
- Authentication via certificate stored on a token and distinguished name (bspw. <cn=meier,ou=clm,o=bnkacct,o=nsp-nspname>)
- Alternative to the current internet based access

- **A2A – Application-to-Application mode**

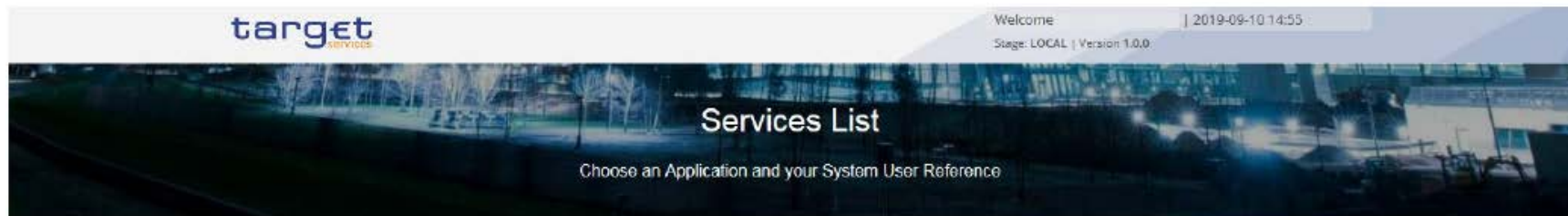
- Direct communication between two applications via **ISO 20022 compliant messages**
- Authentication via certificates (e.g. on an HSM Box) and distinguished name
- A participant using the A2A connection also **automatically** has the possibility to use the **U2A access**
 - The certificate for the U2A access does not necessarily have to be stored on a token (unlike with the U2A-only access)
- This mode is corresponding to the current SWIFT-based access to TARGET2

- **ESMIG Landing Page/ESMIG Portal** when using the U2A(-only) mode
 - Selection of the services/component according to the access rights granted to the user
 - CLM
 - RTGS
 - TIPS
 - Common Reference Data Management (CRDM)
 - Data Warehouse (DWH)
 - Billing (BIL)
 - Business Day Management (BDM)
 - ECONS II
 - T2S (as of June 2022)
 - ECMS (as of November 2023)
 - Selection of the user, if more than one user profile was created for the person

TARGET2/T2S consolidation ESMIG Landing Page/ ESMIG Portal



Figure 2 – ESMIG Portal Graphical User Interface



Choose a Service

TIPS T2 T2S

Choose an Application

CRDM

Data Migration Tool

TIPS

Choose a System User

918299

993393

993399

998899

Submit

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ISO 20022 compliant messages



- Communication with the current TARGET2 mainly via **FIN messages (MT)**
 - On a limited basis it is already possible to send ISO 20022 compliant messages (e.g. camt.050) today

- **Fully fledged use** of ISO 20022 compliant messages in T2 as of 11/2022
 - Taking into account the specifications from HVPS+*
 - Usage of the full field length
 - Transmission of more information than it is possible via MT messages

- **Conversion** of MT to ISO 20022 compliant messages (and vice versa) possible
 - But: potentially **loss of information**

* HVPS+: High Value Payments Plus Working Group for the definition of messages to be used by market infrastructures settling high value payments

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ISO 20022 compliant messages

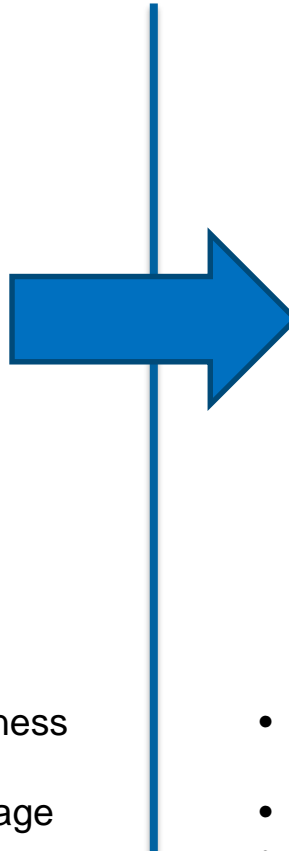
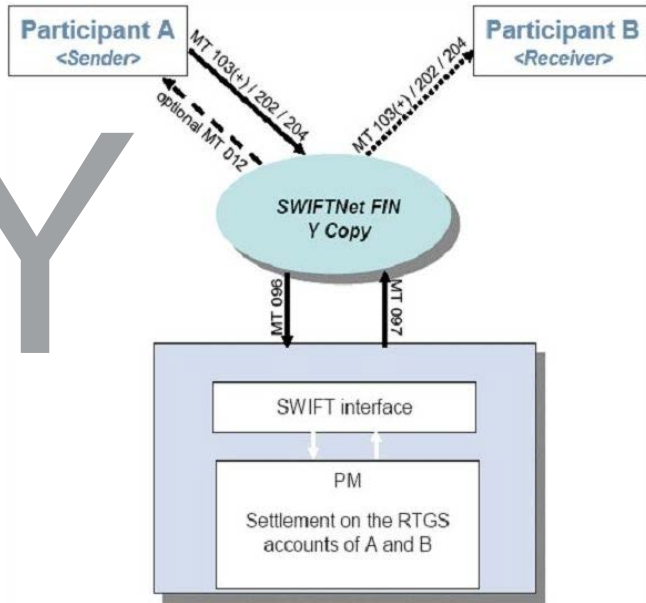


- Message details and examples are available in **SWIFT MyStandards**
 - Links in the UDFS
 - Link to a description on how to register:
<https://www.bundesbank.de/resource/blob/820964/fc335969e3a6824ca44514a3d1f2037b/mL/t2-mystandards-introduction-data.pdf>
- The **SWIFT MyStandards Readiness Portal** allows the validation of self-created ISO 20022 compliant messages against the validation rules in T2
 - Description available here:
<https://www.bundesbank.de/resource/blob/820960/1364741378e8f9eb50459be933f5cb45/mL/t2-swift-mystandards-readiness-portal-data.pdf>

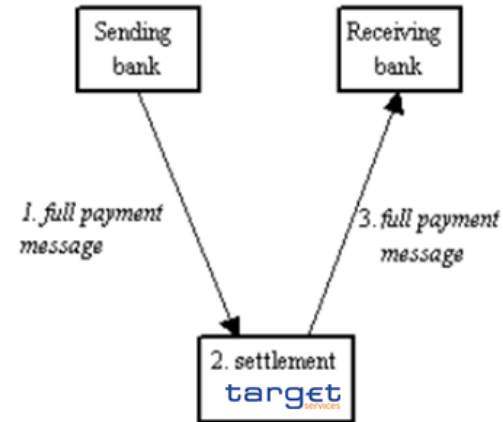
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Addressing messages – inbound messages

„Y-copy“ (today)



„V-shape“ (future)



- One payment message for each business case
- Platform receives a copy of the message
- Sender (A) addresses the receiver (B) directly

- Two payment messages for each business case
- Platform receives the original message
- Sending participant addresses the platform; subsequently the platform generates a new message for the receiving participant

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Addressing messages – CLM

- In all messages the (technical) CLM BIC (**TRGTXEPMCLM**) must be addressed
- Addressing in the **Business Application Header** (head.001)

BAH inbound:

Fr: BIC **Bank A**
To: BIC **CLM**

BAH outbound

Fr: BIC **CLM**
To: BIC **Bank A**

- Technical addressing of the messages based on the DN* of the sender and the settlement services (**V-Shape**)

Technical header inbound:

Sender: DN **Bank A**
Receiver: DN **CLM**

Technical header outbound:

Sender: DN **CLM**
Receiver: DN **Bank A**

- In CLM, unlike in TARGET2 and RTGS, **no payment messages** will be **sent to the CLM account holder** (e.g. pacs.009). **Instead** a **camt.054** will be sent (Debit-/Credit-Notification).



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Addressing messages – RTGS

Payment orders, payment revocation and recall orders or payment recall responses	Store-n-forward message	Payment orders, payment revocation and recall orders or payment recall are sent to the PTA which is derived from the addressed <u>business receiver</u> (identified in the attribute <To> BIC located in the Business Application header (BAH) of the message).
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- messages

- pacs.004 – PaymentReturn
- pacs.008 – CustomerCreditTransfer
- pacs.009 – FinancialInstitutionCreditTransfer (CORE and COV)
- pacs.010 – FinancialInstitutionDirectDebit
- camt.056 – FIToFIPaymentCancellationRequest
- camt.029 – ResolutionOfInvestigation

TARGET2/T2S consolidation

Addressing messages – RTGS



- Addressing the **payment** by using the **BAH** (BICs of the participants published in RTGS Directory)

BAH inbound and outbound:

Fr: BIC **Bank A**
To: BIC **Bank B**

- Technical addressing of the payment messages by using the DN of the sender and the settlement services (**V-Shape**)

Technical header inbound:

Sender: DN **Bank A**
Receiver: DN **RTGS**

Technical header outbound:

Sender: DN **RTGS**
Receiver: DN **Bank B**

- All the other messages** (e.g. camt.050 – liquidity transfer) have to be addressed **to RTGS (TRGTXEPMRTG)**. Reports will be sent by RTGS.

BAH inbound :

Fr: BIC **Bank A**
To: BIC **RTGS**

BAH outbound

Fr: BIC **RTGS**
To: BIC **Bank B**

- In RTGS - unlike in CLM - **payment messages will be sent to the RTGS account holder** (e.g. pacs.009 – Bank to Bank Payment).

TARGET2/T2S consolidation

Addressing messages – summary



Inbound communication (Participant → CLM / RTGS):

Example	CLM	RTGS
Addressing a liquidity transfer in the BAH	to CLM BIC*	to RTGS BIC**
Addressing a query in the BAH	to CLM BIC*	to RTGS BIC**
Addressing a payment order (e.g pacs.009) in the BAH	to CLM BIC*	to the BIC of the receiver of the payment according to RTGS directory
Credit notification (e.g. pacs.009)	camt.054 (Debit/Credit Notification)	pacs.009
Addressing of all messages in the <u>technical</u> header	to the DN of CLM	to the DN of RTGS

*(technical) BIC CLM: TRGTXEPMCLM

** (technical) BIC RTGS: TRGTXEPMRTG

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Message routing – outbound messages



- **Routing for outbound messages with an A2A connection**

- four **communication modes**
 - Store-n-forward – message based
 - Store-n-forward – file based
 - Real-time – message based
 - Real-time – file based

- **Precondition for a correct communication with T2:**

- **Realisation of all four communication modes**, since messages sent from T2 might arrive via every mode (depending on the message type and message size).

- **Routing Configuration**

Individual configuration for each account / message possible

- Exceptions (see next slide)
- Definition of receiver's technical address
- Depending on the size of the message – message or file based
- Actors have to **support all communication modes**

TARGET2/T2S consolidation

Message routing – outbound messages



Business case	Receiver	Example
Notification as response to an own instruction	Technical address of the sender of the instruction	camt.025 as response to a camt.050
Notifications not being a response to an instruction but belonging to a business case triggered by an instruction	Technical address according to the routing configuration	camt.054 as debit/credit notification for a standing order
Payment orders, payment revocation and recall orders or payment recall responses	Technical address of the receiver according to the BAH*	<i>See slides dealing with the addressing of messages to CLM and RTGS</i>
Responses to queries	Technical address of the sender of the query	camt.004 as response to camt.003
Reports	Technical address according to the routing configuration	camt.053 as statement of accounts

*Business Application Header

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Entering U2A – Confirmation A2A



- Depending on the access rights configuration an **A2A participant** has the possibility,, to enter payments or liquidity transfers via the graphical user interface (U2A mode)
 - If the receipt of a Debit/Credit-Notification (camt.054) is configured a **camt.054 will be sent** in A2A mode by the system.

- Extract from RTGS UDFS (table 114)

Type	U2A	Use Case	Camt.054 Debit	Camt.054 Credit
Payment	X	Backup payment	Optional	-
Liquidity transfer	X	Liquidity transfer (debit leg)	Optional	-
	X	Liquidity transfer (credit leg)	-	Optional

- Extract from CLM UDFS (table 67)

Typ	U2A	Use Case	Camt.054 Debit	Camt.054 Credit
Liquidity transfer	X	Liquidity transfer (debit leg)	Optional	-
	X	Liquidity transfer (credit leg)	-	Optional

- Validations of inbound messages and files sent to TARGET2 are currently performed by SWIFT
- The future validations are performed by the **TARGET service/component and/or ESMIG**
- For inbound messages received in T2, **the service/component** performs
 - a technical validation and
 - a business validation.
- **ESMIG** checks for messages sent to T2
 - if the digital signature is correct
 - if the service/component can answer directly (timeout management)
 - if the response can be sent via the same communication mode (oversized management).
 - In case of an error a negative ReceiptAcknowledgement will be sent (admi.007)

• Technical Validation

- Checks
 - syntax, format and structure
 - whether mandatory fields are populated
 - BAH for messages
 - BFH and technical wrapper for files.
- Validation to the extent possible in order to report the maximum number of identifiable errors
- The service/component sends an admi.007 (ReceiptAcknowledgement) including an error description to the submitting actor.

• Business Validation

- Validation of the business data in an inbound message or file against rules defined by T2 (see UDFS)
- Validation to the extent possible in order to report the maximum number of identifiable errors
- The service/component sends a message (depending on the original inbound message) including an error description to the submitting actor.

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Validations - Examples

- Example (**Technical Validation**)

Inbound message type	Response message type	Rule source	Validation rule ID	Validation rule description	Error code	Error description	Xpaths of inbound message elements for validation	Xpath of response message code element	Source rule name
any message	admi.007	T2	VR00010	The message/file must comply with the message/file schema.	E001	Invalid message/file. //Dynamic error including element name//	all elements	RctAck/Rpt/ReqHd lg/Stscd	

- Example (**Business Validation**)

Inbound message type	Response message type	Rule source	Validation rule ID	Validation rule description	Error code	Error description	Xpaths of inbound message elements for validation	Xpath of response message code element	Source rule name
camt.050	camt.025	T2	VR00540	The settlement date must be the current business day.	E040	Settlement date must specify the current business day	LqdyCdtTrf/Lqdy CdtTrf/SttmDt	Rct/RctDtis/ReqHd lg/Stscd	

- **Recommendation:** in the future, the **technical acknowledgement (ACK) shall not be used as basis for the internal booking** within the participants applications
- **Content** of the acknowledgment **decreases**
 - **Today: Confirmation**, that a message was **successfully validated** in the SWIFT network and was **delivered** to TARGET2.
 - **In the future: Only confirmation**, that the message was **delivered** to the settlement service (CLM or RTGS). The validation will be performed by the respective settlement service and not by the network service provider.
- For the internal booking we recommend to **use further information** – e.g. the optional pacs.002 („FIToFIPaymentStatusReport“)

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3 General static data setup in CRDM

CRDM – Common Reference Data Management

Party model

Connection to CLM and participation types in RTGS

Overview of the account structure

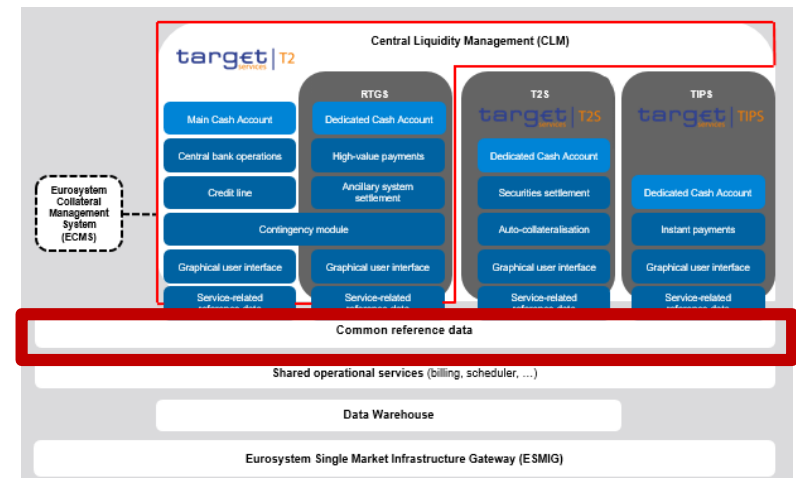
Access rights management

TARGET2/T2S consolidation CRDM

- One common component (used by all settlement services) is the **Common Reference Data Management (CRDM)**

- it is the **central reference data source** for the TARGET services

- In CRDM i. a. following data are configured*:
 - parties
 - accounts
 - access rights
 - message subscription (see information services)
 - report configuration (see information services)
 - network configuration
 - business day management configuration
 - restriction type configuration
 - billing configuration
 - configuration parameters (e.g. currencies, countries).



- Access to CRDM for operator, central banks, payment banks and ancillary systems (scope depending on the data scope and granted access rights)
- Daily data propagation to the TARGET services

* configuration means the creation, modification, deletion and restoration of data.

- Configuration of all static data in **U2A** mode possible (2- or 4-eyes mode)
- Partially **A2A mode** possible

AREA	OBJECT	A2A FUNCTION
Party data management	Party	Create, Update, Delete
	Technical address network service link	n/a
Cash account data management	Cash account	Create, Update, Delete
	Liquidity Transfer Order	Create, Update, Delete
	Authorised account user	n/a
	Limit	Update, Delete
Access rights management	User	n/a
	Role	n/a
	Privilege	n/a
	Certificate DN	n/a
	User-Certificate DN Link	n/a
Message subscription configuration	Message subscription rule set	n/a
	Message subscription rule	n/a
Report configuration	Report configuration	n/a

Table 47 – Management of Reference Data Objects

TARGET2/T2S consolidation

CRDM – Data propagation



- The creation, modification and deletion of static data in CRDM is **propagated to the TARGET Services and common components** on a **daily basis** (reference data propagation)
 - Loading of new reference data during the **EoD** between 18:00 and 18:45 CET.
- Differentiation between
 - propagation to all services (e.g. country codes or currencies)
 - propagation to only one service (e.g. banking group in CLM)
 - propagation to some services (e.g. party or cash account)
- Exception of the data propagation (**immediately active**)
 - Blocking / unblocking of a party
 - Blocking / unblocking of a cash account

TARGET2/T2S consolidation

CRDM – characteristics regarding T2S and TIPS



- The T2S static data module is the basis for CRDM, TIPS has used CRDM^(TIPS) since November 2018
- **The majority of static data from T2S and TIPS participants already exist** (e.g. parties, user, etc.)
 - Usage for T2 (CLM and RTGS) possible
- „Only“ **adaptations** necessary (non-exhaustive list)
 - change of the linked account from PM account to MCA
 - creation of party service link and service party type (except for T2S and TIPS)
 - creation of new users
 - granting CLM/RTGS-roles
 - creation of the message subscription
 - report configuration for the account statement(s)
 - configuration of further technical addresses
- **T2S will make use of CRDM as of June 2022**

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CRDM – party model



- Every participant in the TARGET services will be created as a „**party**“ in CRDM
- The following **party types** are available:
 - Operator – operator of the TARGET services (4CB)
 - **Central bank** – participating central bank
 - **Payment bank** – i. a. credit institutions, investment firms
 - **Ancillary system** – Ancillary systems that settle in RTGS
 - Central Securities Depository (CSD) – T2S securities side
 - CSD Participant – T2S securities side
- Every party is identified via a **BIC11** which must be unique per currency. One BIC11 is identifying one party.

TARGET2/T2S consolidation

CRDM – party model

- The party model of the TARGET services is based on a **hierarchical three-level structure**.
- The superior party configures the static data for the subordinate party
 - The operator creates the central banks
 - The **central banks create their participants** (payment banks and ancillary systems)

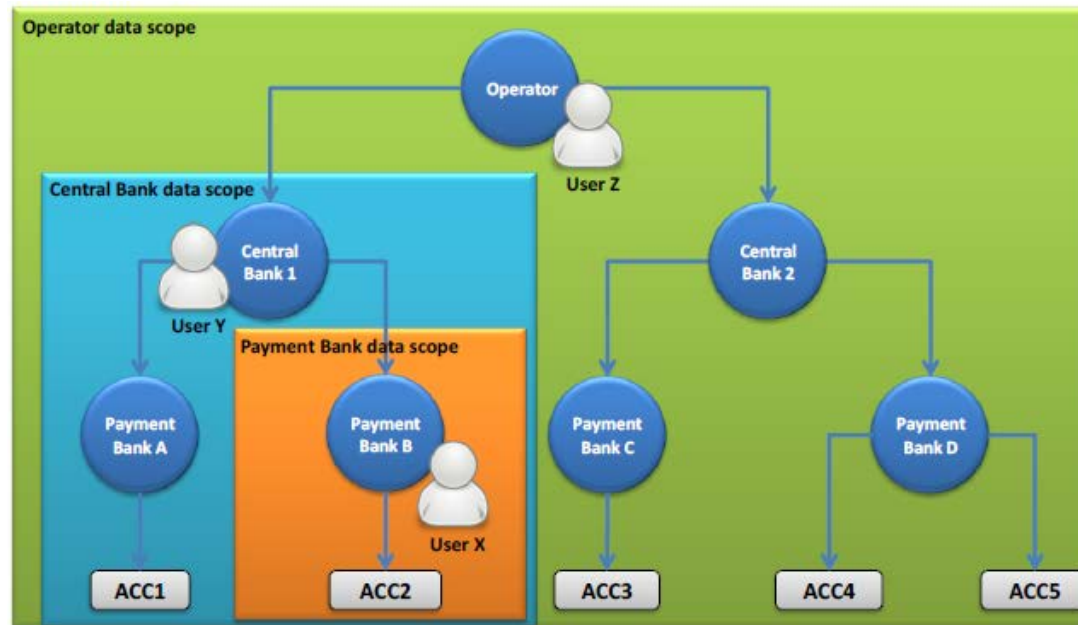


Diagram 3 – Data Scopes

TARGET2/T2S consolidation

CRDM – party model



- Each party will be linked to a service/component via the **party service link**. A party can participate in several services/components (CLM, RTGS, TIPS, ECONS II).
- Additionally the **service party type** defines the business function a party may use
- Each party requires at least one service party type per party service link in CLM, RTGS and TIPS

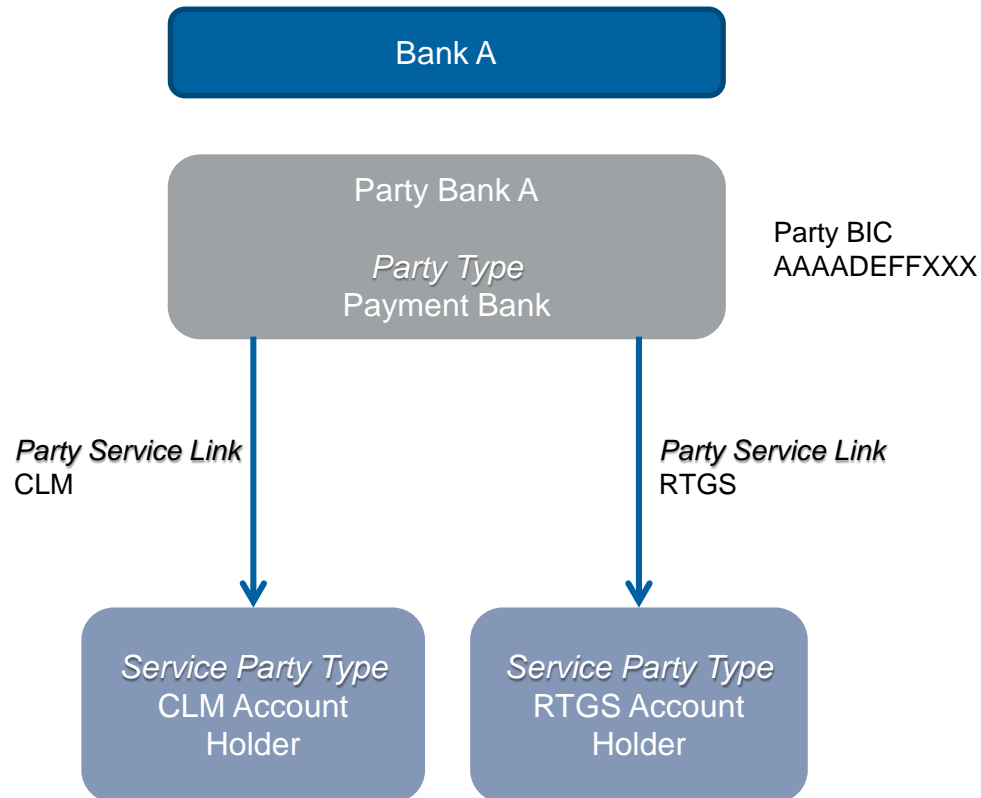
ATTRIBUTE	DESCRIPTION
Service Party Type	<p>Service-specific classification for the Party. Certain values may be used only in conjunction with specific Services and specific Party Types defined at Party level.</p> <p>The exhaustive list of possible values for the TIPS Service is as follows:</p> <ul style="list-style-type: none"> TIPS Operator TIPS Central Bank TIPS Participant TIPS Reachable Party MPL-Only Participant <p>The exhaustive list of possible values for the CLM Service is as follows:</p> <ul style="list-style-type: none"> Operator CLM CB Account Holder CLM CB Technical Account Holder CLM Transit Account Holder CLM Account Holder Institution managing minimum reserve without account in CLM <p>The exhaustive list of possible values for the RTGS Service is as follows:</p> <ul style="list-style-type: none"> Operator RTGS CB Account Holder RTGS Transit Account Holder RTGS Account Holder Ancillary System

7. Party Service Link

TARGET2/T2S consolidation

CRDM – party model

- Example for a payment bank which participates in CLM and RTGS



TARGET2/T2S consolidation

Connection to CLM and participation types in RTGS



- **Type of connection to CLM:**

- Direct participation

- Co-Management

(own account; use of the technical connection of the co-manager)

⇒ further details provided in the CLM section of the presentation

Own account
(MCA)

Own technical
connection



TARGET2/T2S consolidation

Connection to CLM and participation types in RTGS

- **Participation types in RTGS:**

⇒ further details provided in the RTGS section of the presentation

- Direct participation
- Multi-addressee access
- Addressable BIC

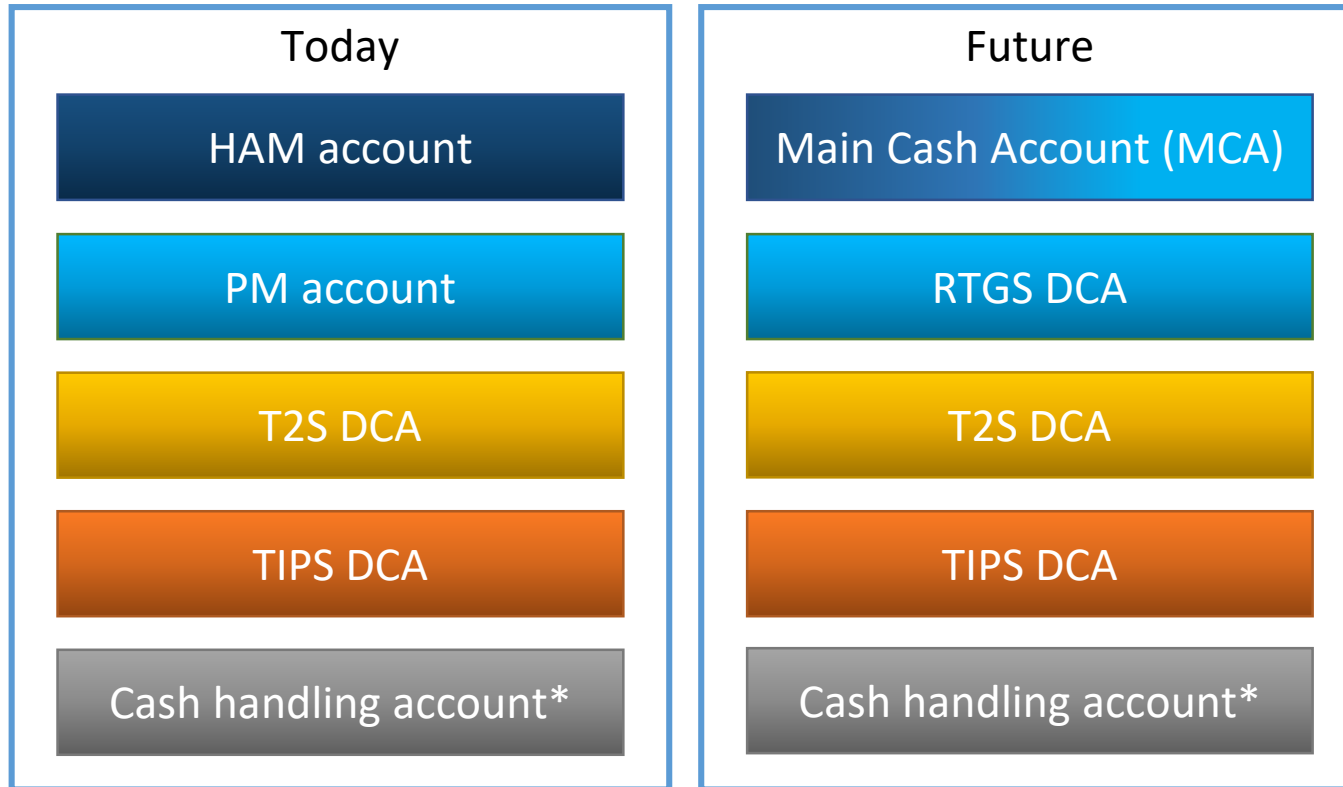
	Own account (RTGS DCA)	Own technical connection
• Direct participation	+	+
• Multi-addressee access	-	+
• Addressable BIC	-	-

The BICs (BIC11) of the participants are part of the RTGS directory representing a compilation of all reachable participants in RTGS.

Information: The Eurosystem decided to discontinue the „indirect participation“ and only use the „addressable BIC“ functionality. The „indirect participation“, that is identical with the „addressable BIC“ will still technically be possible (and will therefore still be part of the UDFS) but will not be offered by the Eurosystem anymore (not part of the Guideline).

TARGET2/T2S consolidation

Account structure



* Cash handling accounts are not part of the TARGET2 single shared platform and will not be part of the future TARGET Services.

TARGET2/T2S consolidation

CRDM – account structure

- In CRDM different accounts for the settlement in the TARGET Services will be created

CLM

Main Cash Accounts

CLM CB Accounts

Overnight Deposit Accounts

Marginal Lending Accounts

CLM Dedicated Transit Accounts

CB ECB Accounts

ECB Mirror Accounts

Details in the **CLM** section of the presentation

RTGS

RTGS Dedicated Cash Accounts

RTGS Sub-Accounts

RTGS CB Accounts

RTGS Dedicated Transit Account

AS Guarantee Funds Accounts

AS Technical Accounts

Details in the **RTGS** section of the presentation

TARGET2/T2S consolidation CRDM – account structure

Central source of liquidity

Main Cash Account

Account BIC
AAAADEFFXXX

mandatory

optional

Account BIC
AAAADEFFXXX

TIPS DCA

Instant payments

Individual payments
Ancillary system
settlement

Account BIC
AAAADEFFXXX

RTGS DCA

RTGS DCA

Account BIC
AAAADEFF123

T2S DCA

Cash leg of a DvP settlement

Account BIC
AAAADEFFXXX

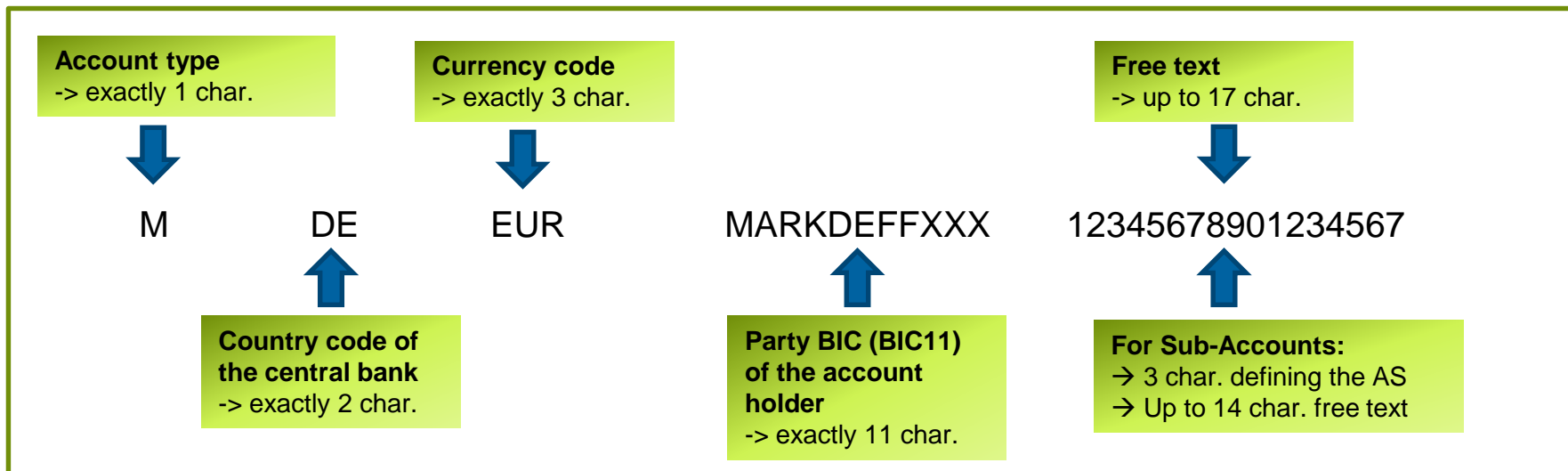
- Each account will be identified with a BIC and an account number.
- The **same BIC** can be used **across all services**, **within the service** it must be **unique per currency**.
- The **account number** must be **unique across all services**.

TARGET2/T2S consolidation

CRDM – naming convention for T2 accounts



- The structure of the **account number** is oriented on the conventions already used for **T2S and TIPS**:



Account	Account type
MCA	M
RTGS DCA	R
T2S DCA	C
TIPS DCA	I

Account	Account type
Overnight Deposit Account	D
Marginal Lending Account (bis Nov 2022)	L
ECONS II	X

Account	Account type
Sub Account	U
Technical Account	T
Guarantee Account	G
CB-ECB Account	E
Transit Account	N

- For the overnight deposit and marginal lending account the party BIC of the institution for which the account was opened will be used (account holder is the Central Bank)

TARGET2/T2S consolidation

CRDM – account(s) for T2 participants



- Depending on the business that shall be settled

Business case	Necessary accounts
Minimum reserve fulfilment	Main Cash Account
Settlement of open market operations	Main Cash Account
Settlement of individual payments	Main Cash Account + RTGS DCA
Participation in ancillary system settlement	Main Cash Account + RTGS DCA + Sub-Account (depending on the AS procedure)
Participation in T2S	Main Cash Account + T2S DCA
Participation in TIPS	Main Cash Account + TIPS DCA

- **Direct debit mandate** – precondition for the use of direct debits in T2
- CLM
 - Direct debits are only possible for the CB – only in exceptional cases a direct debit mandate is necessary
- RTGS
 - Direct debits are possible for all RTGS account holders
 - Bilateral agreements between the RTGS account holders
- **Configuration of the direct debit mandate in CRDM** by the central bank based on the instruction of the RTGS account holder

TARGET2/T2S consolidation

CRDM – opening and closing of an account



- An account (independent of it being an account in CLM or RTGS) has **a limited validity period** (opening date to closing date*)
- Only valid accounts will be taken into account for settlement in a service/component.
- Before an account can be deleted it must be closed.
- The deletion of an account can only be performed if the closing date is in the past.
- **Principle: Closing before deletion**

* The closing date does not need to be provided when opening an account in CRDM.

TARGET2/T2S consolidation

CRDM – opening and closing of an account



- **Closing an account with a residual balance for the next business day**
 - **Positive balance:** automatic generation of a liquidity transfer debiting the MCA/RTGS DCA and crediting the default CB account in CLM/RTGS
 - **Negative balance:** automatic generation of a liquidity transfer debiting the default CB account in CLM and crediting the MCA
 - Same principle applies for the „linked“ marginal lending and overnight deposit accounts
 - **Point of time** during the business day
 - CLM: during the EoD at the event „CB cut-off for marginal lending on request“
 - RTGS: during the EoD at the event „Cut-off for RTGS RTS II“

- **Blocking of a party**

- A participant (Payment Bank or AS) will be blocked by the central bank in CRDM via a „Restriction Type“
- The blocking/unblocking applies **immediately** in **ALL settlement services**
- If a party is blocked this will apply **for all linked cash accounts**
- All (blocked) bookings need to be **confirmed by the central bank**

- **Blocking of a CLM/RTGS account**

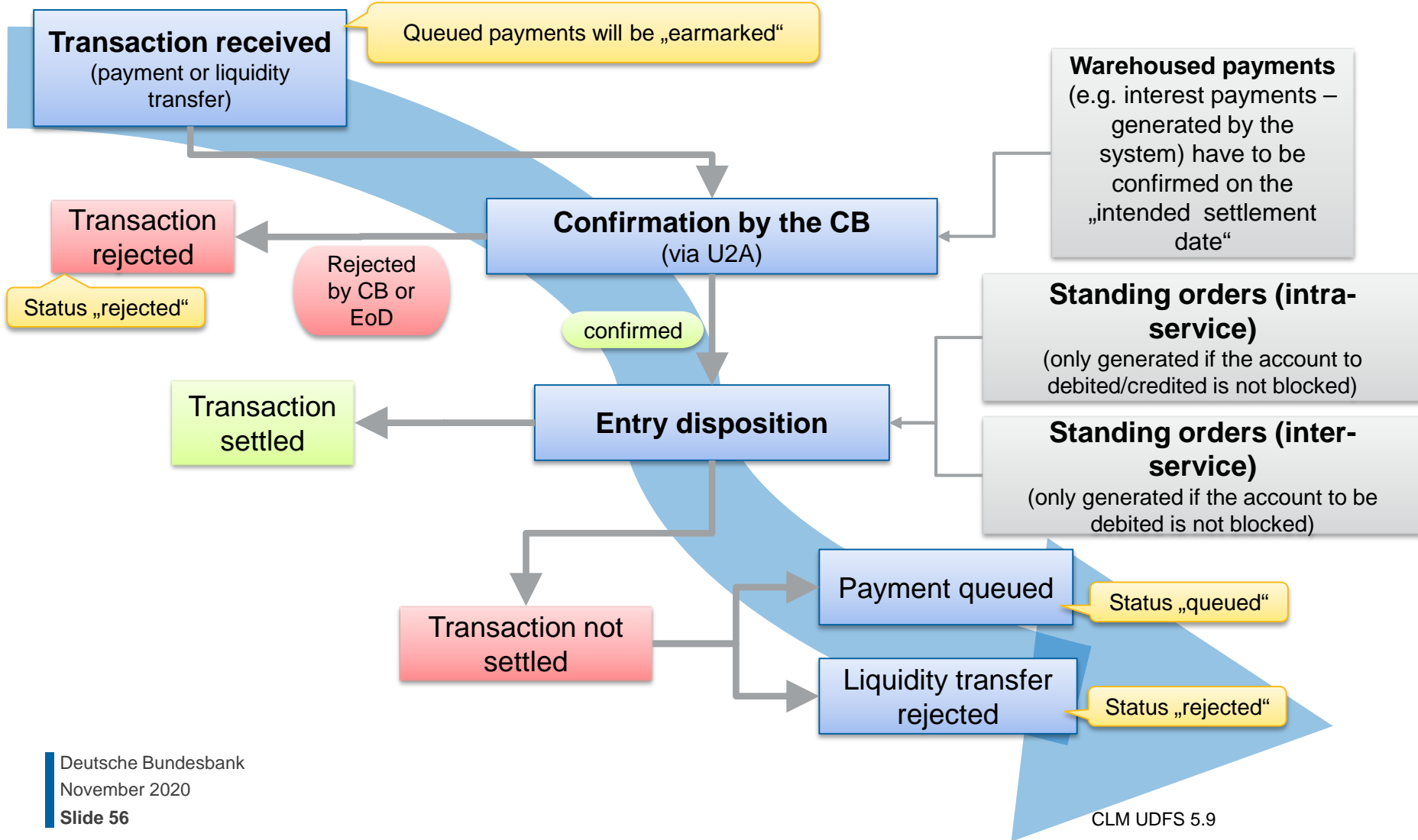
- Blocking/unblocking of an account via „restriction type“ by the central bank in CRDM
- The blocking/unblocking applies **immediately**
- (blocked) bookings need to be **confirmed by the central bank**
- **Blocking is possible for**
 - Debits and credits
 - Debits only
 - Credits only

TARGET2/T2S consolidation

CRDM – Blocking of a party/an account



Impact of blocking in CLM for debits and credits

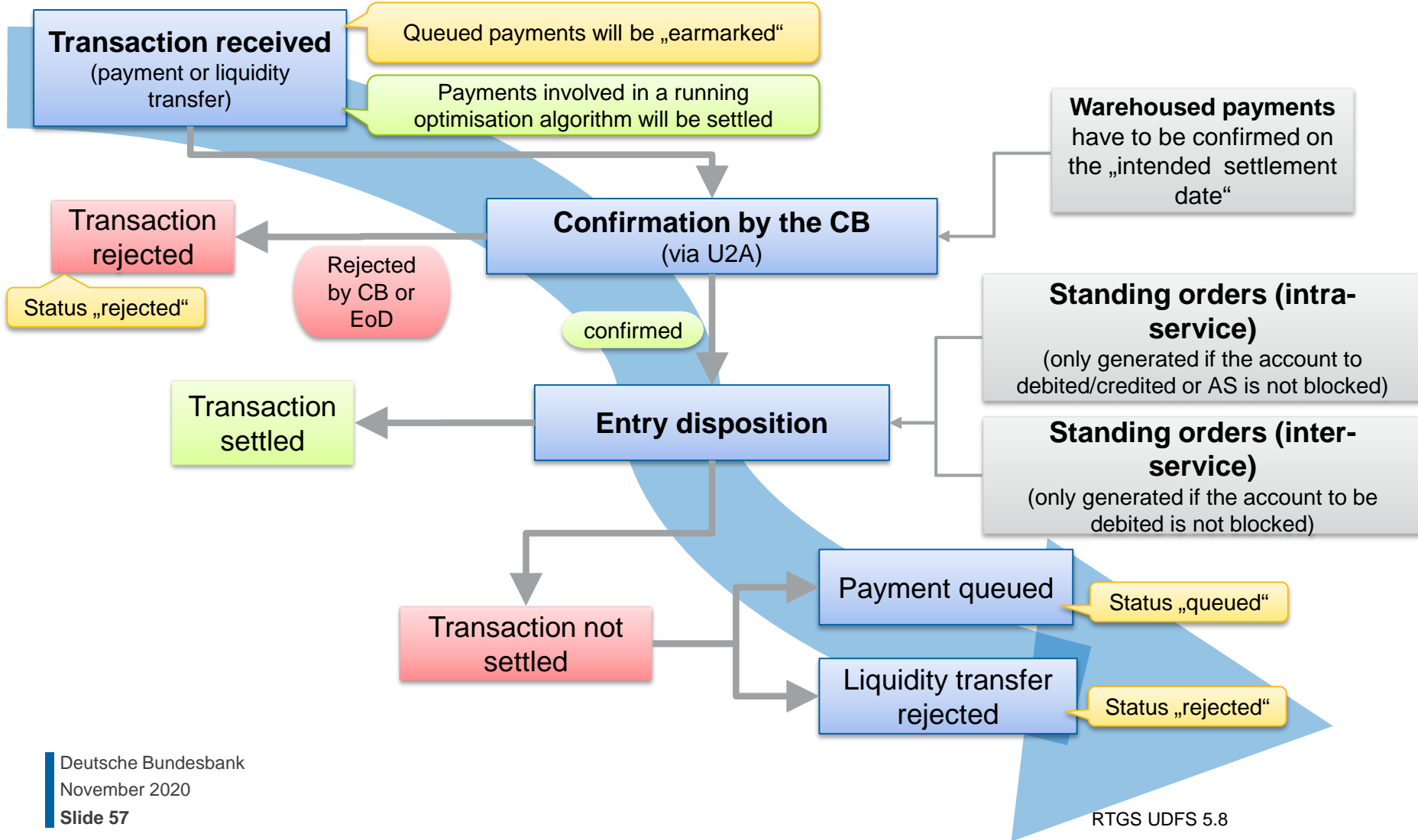


TARGET2/T2S consolidation

CRDM – Blocking of a party/an account



Impact of blocking in RTGS for debits and credits



TARGET2/T2S consolidation

CRDM – Access Rights Management

- Every participant has its own data scope – depending on the **hierarchical three-level structure**.

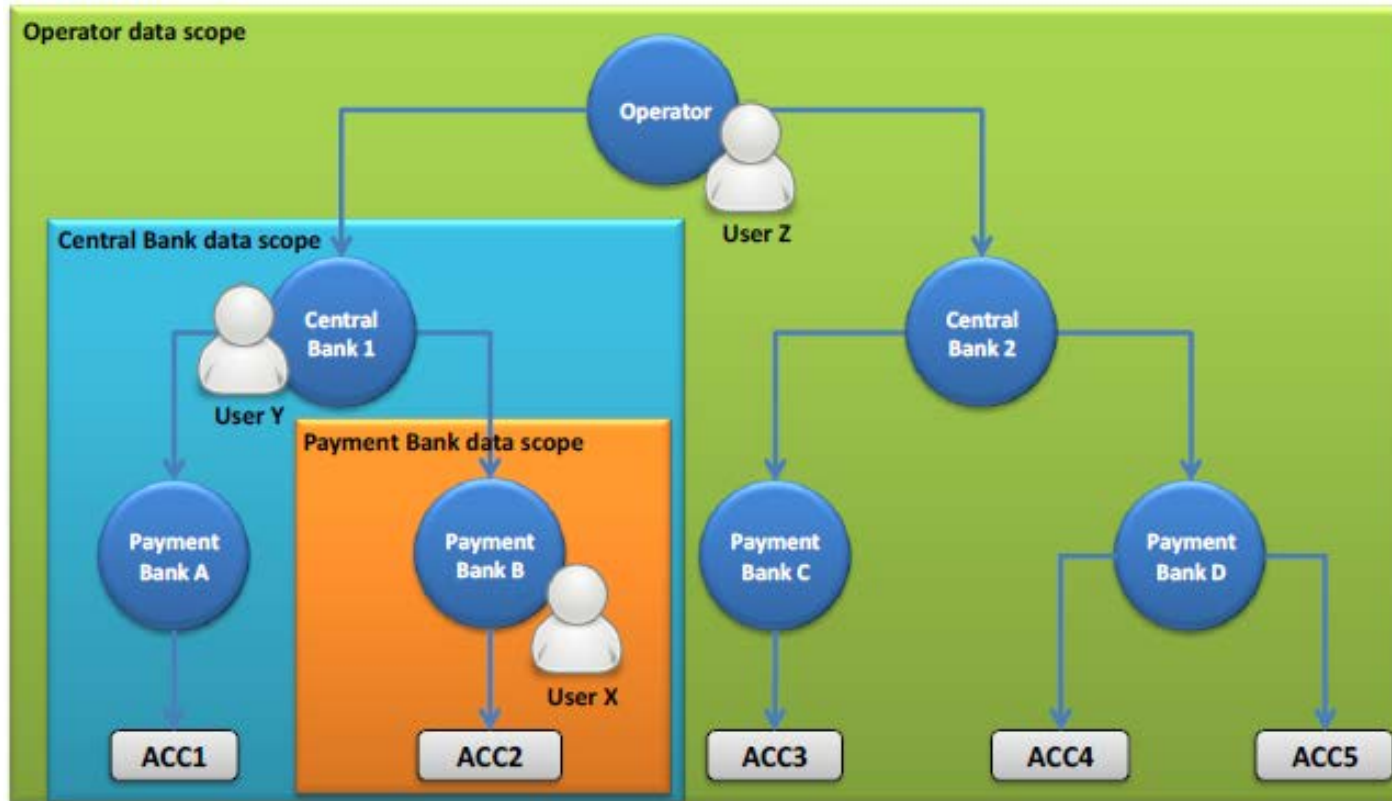


Diagram 3 – Data Scopes

TARGET2/T2S consolidation

CRDM – Access Rights Management



- The Access Rights Management in CRDM distinguishes between
 - Users
 - Functions / privileges
 - Roles
- **User**
 - A user is linked to the same party the creator user belongs to (exception: creation of the administration users by the central bank)
 - The **central bank** creates up to two **administrator users** for its participants (i.e. payment banks and ancillary systems)
 - **Additional users** will be created and maintained by the participants
 - Each user is linked to a DN (the DN is linked to a certificate/token which belongs to a person/application)
 - A user can perform functions in **U2A or A2A** mode
 - If a payment bank participates in **T2S as DCP and/or TIPS** today, the already existing **users can be used for T2** – these do not have to be created again.

- **Privilege**

- A privilege identifies the capability for the execution of one or several user functions
- **CLM/RTGS-privileges** can only be granted to roles
- **CRDM-privileges** can be granted to roles and directly to a user
- Privileges will be granted in **2- or 4-eyes-mode** (queries always in 2-eyes-mode)
- Definition of further criteria possible (admin, deny)
- Contradicting privileges cannot be granted

- **Role**

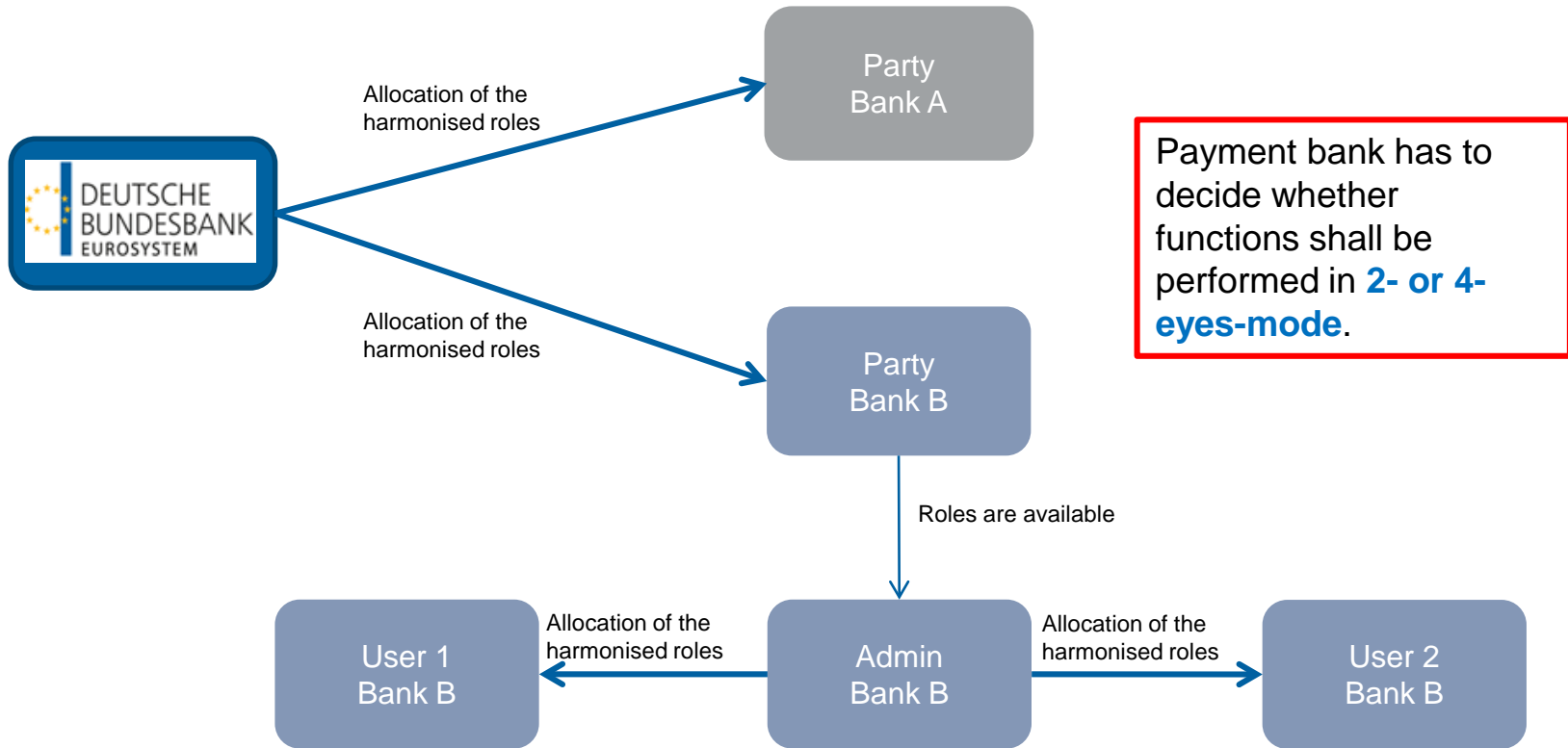
- A role consists of **one or more privileges**
- Contradicting privileges cannot be grouped to a role
- Roles can only be created, maintained or deleted by **central banks**
- Creation of **harmonised roles on Eurosystem-level** (necessary deviations are allowed)
- Large parts of the CRDM-roles already exist (**T2S roles will be used**)

TARGET2/T2S consolidation

CRDM – Access Rights Management



Allocation of one or more roles to a participant



The participants are in charge of performing the access rights management!

Does a participant need a role in 2- or 4-eyes mode?

- **Different treatment in CRDM and CLM/RTGS** regarding the allocation of privileges and roles
 - **CRDM** follows the **T2S-approach**
 - Pre-defined roles created by the central bank will be granted to the party – automatically also the **single privileges** are available
 - A privilege can be granted to a user directly
 - A privilege can be adapted by the participant (e.g. change from 2-eyes to 4-eyes-mode)
 - **CLM/RTGS** follow the **TIPS approach**
 - Pre-defined roles created by the Central Bank will be granted to the party – the **single privileges** are **not** available
 - A privilege can only be granted to roles
 - Only a role can be granted to a party/a user

Does a participant need a role in 2- or 4-eyes mode?

- As soon as a **CRDM function** shall be performed in **A2A** mode (e.g. creation of a standing order) the **role** has to be requested in **2-eyes mode**.
 - If this function shall be performed in **4-eyes mode via U2A**, the payment bank has the **possibility to grant the single privilege in 4-eyes mode to a user**.
- If a CLM/RTGS function shall be performed via **A2A (2-eyes mode)** and in **U2A (4-eyes mode)** the payment bank has to **request the role in 4-eyes mode**.
 - **CLM/RTGS ignores the 4-eyes setting** when a request is sent via A2A.

- Privileges can be revoked from a user (CRDM privileges), a role and/or a party.
- **Revocation of privileges from a user**
 - With immediate effect function cannot be performed anymore
- **Revocation of privileges from a role**
 - Function cannot be performed anymore if the privilege was granted to the user via a role
 - If the privilege was granted directly to the user (only CRDM privileges), the user can still perform the function
 - If the function shall not be performed by any user of the party the central bank has to grant this privilege directly to the party and revoke it again. This triggers a so-called cascade effect which ensures that privileges revoked from a party are also revoked from all the users and roles of the same party.
- **Revocation of privileges from a party**
 - Function can no longer be performed by any user of the party (cascade effect)

- Roles can be revoked from a user and/or a party
- **Revocation of a role from a user**
 - Functions cannot be performed anymore
- **Revocation of a role from a party**
 - Functions can still be performed if the role or a single privilege from the role was granted directly to a user.
 - If the functions shall not be performed by any user of the party, the central bank has to revoke the privileges from the role and delete the role. Afterwards the privileges have to be granted to the party directly and revoked again. This triggers the so-called cascade effect which ensures that privileges revoked from a party are also revoked from all the users and roles of the same party.

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4 Business Day

Overview of the TARGET calendar and the timelines

CLM Timeline

RTGS Timeline

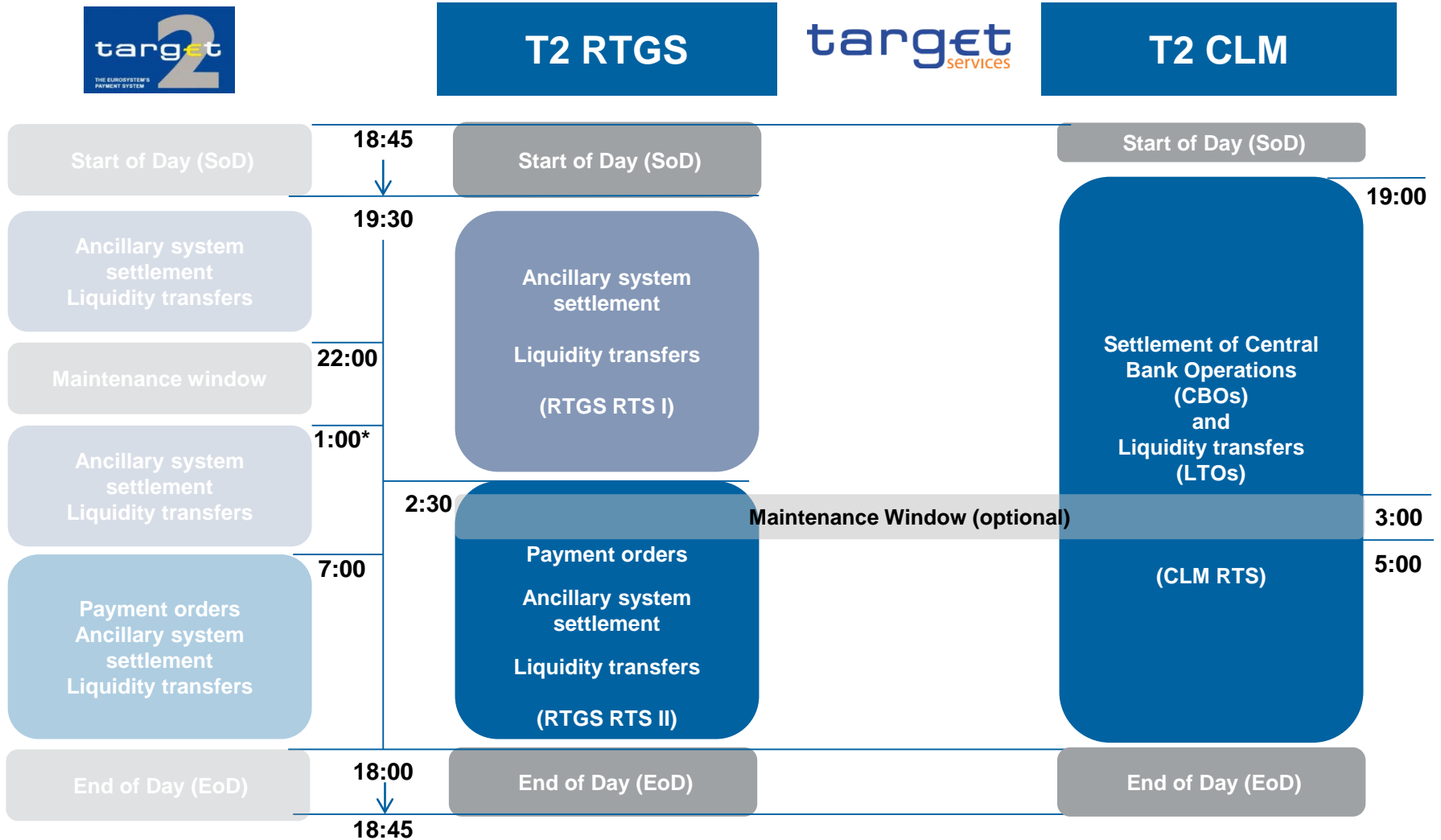
Functional advantages

TARGET calendar

- **No** changes compared to the current TARGET2 calendar
- Change of business day is **synchronised** for T2 and T2S
- T2 and T2S are generally open from Monday to Friday
- **T2 holidays** (for the cash settlement in Euro):
New Year's Day, Good Friday, Easter Monday, Labour Day, Christmas Day, Boxing Day
- Currency specific or service specific holidays are possible (not yet defined)
- T2 business day is decoupled from the calendar day (0:00 till 24:00).
- All times mentioned on the following slides relate to Central European Time (CET).

TARGET2/T2S consolidation

Overview of the TARGET calendar and the timelines



TARGET2/T2S consolidation

Overview of the TARGET calendar and the timelines

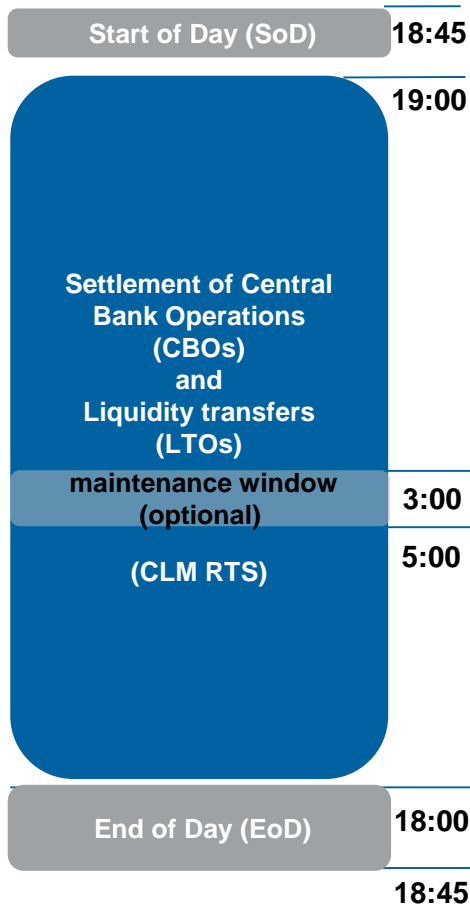
Maintenance window



- **Non-optional** maintenance window on weekends from Saturday 2:30 till Monday 2:30 as well as during T2 holidays.
- **Optional maintenance window** from Tuesday to Friday (3:00 till 5:00)
- During the maintenance window it is not possible to access the **RTGS and CLM GUI, the Data Warehouse and CRDM**. All messages and files sent to T2 will be parked until settlement continues.
- The maintenance window is activated for **all currencies** settling in T2.

TARGET2/T2S consolidation CLM timeline

T2 CLM



SoD

- Processing of standing orders for reservations for central bank operations

CLM RTS

- ~ 19:00 Start of the reimbursement of standing facilities and processing of central bank operations
- ~ 19:30 Start of the processing of all liquidity transfers
- ~ 18:00 Cut-off for
 - All central bank operations except for standing facilities and credit line modifications
 - Liquidity transfers
 - Reservations (incl. return of reserved liquidity)

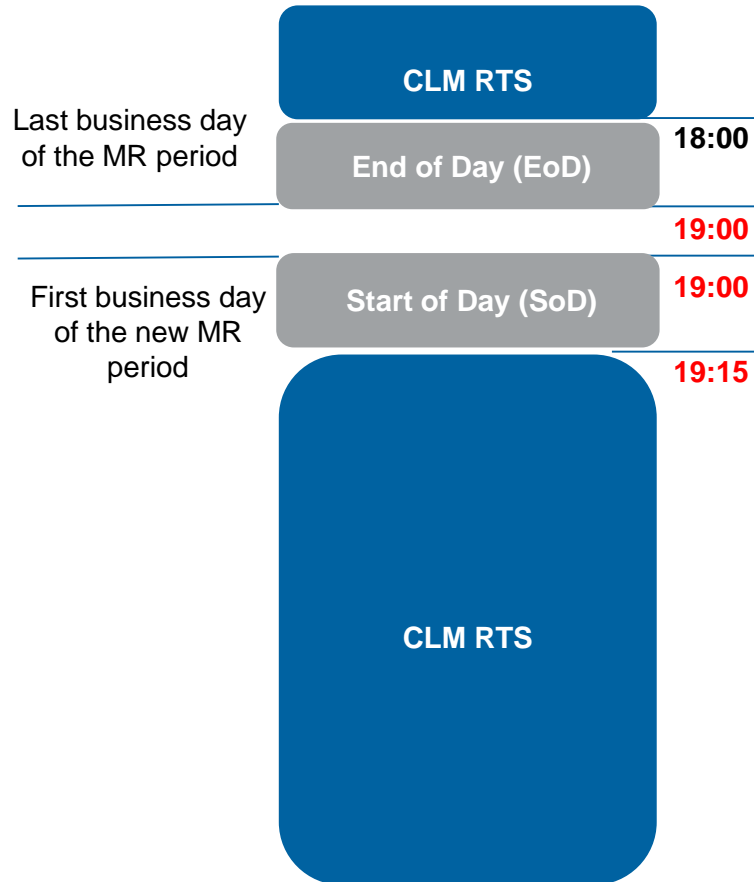
EoD

- ~ 18:15 Cut-off for overnight deposit facility
- ~ 18:40 Cut-off for marginal lending on request and credit line modifications
- After 18:40 potential use of automatic marginal lending
- Calculation of data on minimum reserve (e.g. running average)
- Creation and provision of the statement of accounts

TARGET2/T2S consolidation

CLM timeline

Last business day of the minimum reserve maintenance period



EoD

- **EoD extended by 15 minutes** → postponement of cut-off for standing facilities (to **18:30**) and all following events (e.g. marginal lending on request to **18:55**)
- **Calculation of the minimum reserve fulfilment and excess reserves** of every party and creation of payment orders for interests (processing + 2 business days)

SoD

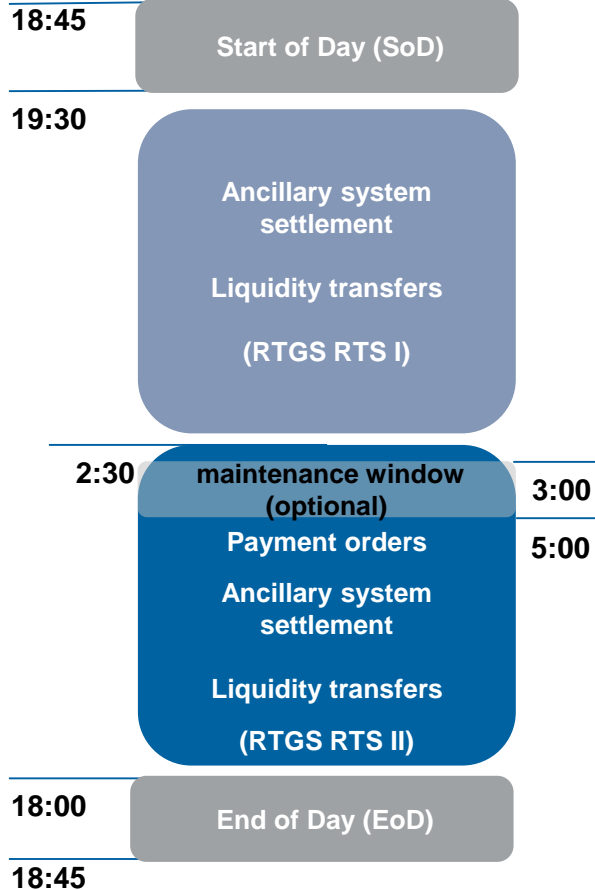
- Postponement from 19:00 to 19:15

RTS

- Postponement (15 minutes) of the start to 19:15, also postponement of the start of liquidity transfer processing

TARGET2/T2S consolidation RTGS timeline

T2 RTGS



SoD

- Processing of standing orders for reservations and limits

RTGS RTS I

- Start of ancillary system settlement
- Processing of all liquidity transfers

RTGS RTS II

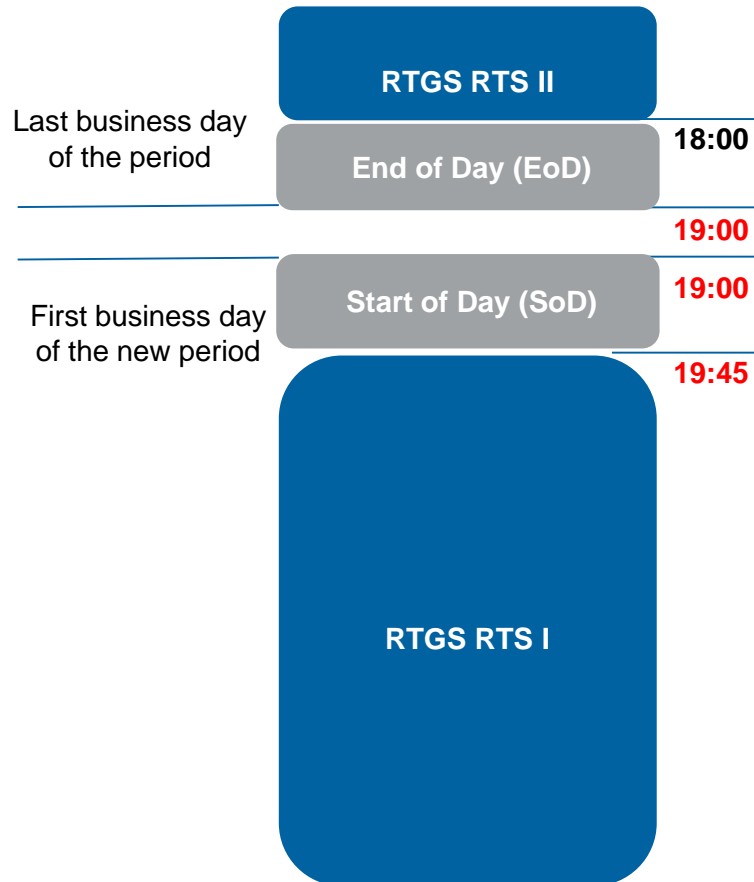
- Continuation of settlement on RTS I
- Processing of customer and interbank payments (as of 2:30)
 - ~ 17:00 Cut-off for customer payments
 - ~ 18:00 Cut-off for all remaining transactions

EoD

- Creation and provision of statement of accounts

TARGET2/T2S consolidation RTGS timeline

Last business day of the minimum reserve maintenance period



EoD

- **EoD in RTGS also extended by 15 minutes** → synchronisation with CLM

SoD

- Extension by 15 minutes to 19:00 – 19:45 to
 - synchronise with CLM
 - Keep 45 minutes for the SoD processes in RTGS

RTGS RTS I

- Postponement (15 minutes) of the start to 19:45, also postponement of the settlement window for AS transfer orders and liquidity transfers

Functional advantages

- **Harmonisation** of T2 timelines (especially with T2S)
- **Extended settlement times** for customer and interbank payments
- Worldwide active participants can offer an **improved and time zone independent service** for settlement in Euro
- **Optional maintenance window** for extending the settlement times mirrors the demand of the banking sector.

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5 Information Management

Overview

Message Subscription

Report Configuration

Broadcasts and Queries

TARGET2/T2S consolidation

Information Management – overview



- A participant can „pull“ various information from the system or can configure the system to send necessary information to him („push“)
- Certain messages (e.g. notifications) and reports **will not be provided automatically**
 - **Error messages** (e.g. not successful technical validation) will be sent **automatically**
 - Positive notifications and further information need to be **ordered**
 - Message subscription
 - Report configuration
- Experiences from **T2S** are taken into account
 - „T2S talks too much“
 - Message subscription and report configuration already exist

TARGET2/T2S consolidation

Message subscription



Only A2A

- CLM and RTGS do not automatically send status updates and notifications to the account holder
 - Ordering via **message subscription** necessary
- Ordering of **messages based on pre-defined parameters** in CRDM
 - CLM and RTGS
 - admi.004 (e.g. broadcast, information on reject- and till-time)
 - camt.019 (e.g. information regarding the status of the business day)
 - camt.054 (debit/credit-Notification)
 - pacs.002 (e.g. notification on the successful settlement)
 - (only) RTGS
 - camt.029 (only in case of a positive forwarding of a recall)
 - CRDM
 - acmt.010 (information on the status of an account opening / modification)
 - reda.016 (information on the status of the creation or modification of a party)
 - camt.025 (information on the status of the creation or update of a standing order for liquidity transfer, limit or reservation)
 - BILL
 - camt.077 (BillingReport)

TARGET2/T2S consolidation

Message subscription



Only A2A

Message Subscription Parameter

MESSAGE TYPE	MESSAGE STATUS	PARTY	CASH ACCOUNT	MULTI-ADDRESSEE BIC	BUSINESS CASE	PRIORITY	UNDERLYING MESSAGE TYPE
SystemEventNotification (admi.004)	No	No	No	No	No	No	No
ReturnBusinessDayInformation (camt.019)	No	No	No	No	No	No	No
ResolutionOfInvestigation (camt.029)	No	No	Yes	Yes	No	No	No
BankToCustomerDebitCreditNotification (camt.054)	No	No	Yes	No	Yes	No	No
PaymentStatusReport (pacs.002)	No	No	Yes	Yes	No	Yes	Yes
AccountRequestAcknowledgement (acmt.010)	Yes	Yes	Yes	No	No	No	No
PartyStatusAdvice (reda.016)	Yes	Yes	No	No	No	No	No
Receipt (camt.025)	No	No	No	No	No	No	No
BillingReport (camt.077)	No	No	No	No	No	No	No

CRDM UDFS Table 32

TARGET2/T2S consolidation

Message subscription



Only A2A

Example for the message subscription of a **camt.054** (credit account A)

MESSAGE SUBSCRIPTION RULE SET					
Name	CREDIT_NOTIFY_ACCOUNT_A				
Description	Receive credit notifications for account A				
Interested Party	Payment Bank A				
Valid From	1-July-2019				
Valid To	-				
RULE SET	VALID FROM	VALID TO	MESSAGE TYPE	CASH ACCOUNT	DEBIT/CREDIT INDICATOR
Rule 1	2019-07-01	-	BankToCustomerDebitCreditNotification	ACCOUNT A	CRDT

- Limitation to certain business cases possible (examples)
 - Only for immediate liquidity transfers
 - Only for automated liquidity transfers or
 - Only for connected payments

(Details are available in CLM UDFS 5.10 and RTGS UDFS 5.9)

TARGET2/T2S consolidation

Report configuration



- Ordering of the **statement of accounts as well as the RTGS Directory in CRDM** via „report configuration“
 - Both will not be provided automatically to the account holder
- The statement of accounts can be ordered **for all CLM and RTGS accounts**
 - Definition of the respective account in CRDM necessary
 - A statement of accounts contains the information of **one account** (deviation from T2S)
- Provision **U2A or A2A**
 - U2A – „pull“ – download from GUI
 - A2A – „pull“ – query via admi.005, provision of camt.053
 - A2A – „push“ – automatic provision at the end of the day as camt.053
- The statement of accounts is created during the **EoD** (18:00-18:45)
 - A statement of account can be queried (U2A or A2A – „pull“) until a new statement of account is created the next business day.

TARGET2/T2S consolidation

Report configuration

- **Parameter** in CRDM (example: CLM, the same applies for RTGS)

Parameter	Mandatory/optional	Possible values	Further information
Report type	Mandatory	Statement of accounts	
Concerned account	Mandatory	Cash Account	
Possible recipient of a report	Mandatory	CLM Actor	
Communication channel	Mandatory	Push mode, pull mode	
Valid from	Optional	Date	If not stated, the next business date shall be used by default.
Valid to	Optional	Date	The field „Valid To“ is the only field that can be amended after the report configuration has been stored.

- Provision to the account holder according to the **routing** configuration
- The statement of accounts can additionally be sent to a **third party** (definition of another technical address necessary)

TARGET2/T2S consolidation

Broadcasts and queries



- **Broadcast** functionality available (U2A and/or A2A)
 - Creation automatically by CLM or RTGS when reaching pre-defined events or by the central bank or the operator
 - U2A-broadcast as „pop-up“-window in the GUI
 - For receiving an A2A-broadcast a message subscription is necessary
- **Queries**
 - **Real-time** (pre-defined) **queries** in CLM and RTGS possible
 - U2A and A2A possible

Query type	CLM	Initiation via GUI (U2A mode)	Initiation via XML message (A2A mode)
Account statement query		X	X
Audit trail for CLM query		X	-
Available liquidity CLM query		X	X
Available liquidity overall query		X	-
Broadcast query		X	-
Cash transfer query		X	X
Current reservations query		X	X
Event query		X	X
File query		X	-
Minimum reserve fulfilment query		X	X
System time query		X	X
Task queue query		X	-

Query type	RTGS	Initiation via GUI (U2A mode)	Initiation via XML message (A2A mode)
Account balance query		X	X
Account statement query		X	X
AS batch query		X	-
Audit trail for RTGS query		X	-
Broadcast query		X	-
Cash transfer query		X	X
Current limits query		X	X
Current reservations query		X	X
Event query		X	X
File query		X	-
Message query		X	-
System time query		X	X
Task queue query		X	-

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6 Central Liquidity Management (CLM)

Overview

Account structure in CLM

Cash Transfer Orders in CLM

Liquidity Management Features in CLM

Central Bank Operations

6 **Central Liquidity Management (CLM)**

Overview

Account structure in CLM

Cash Transfer Orders in CLM

Liquidity Management Features in CLM

Central Bank Operations

TARGET2/T2S consolidation

Central Liquidity Management - overview

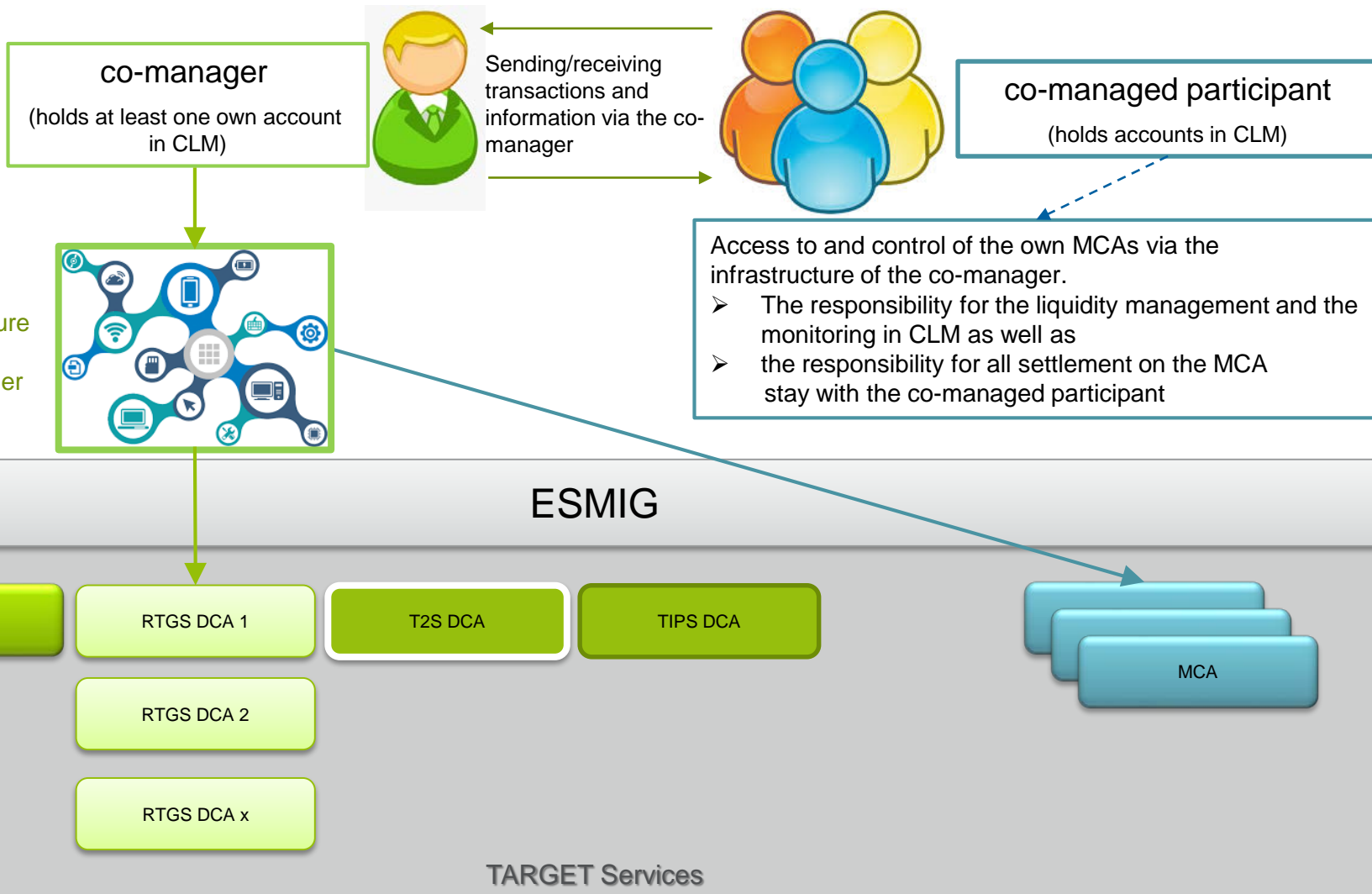


- Central **source of liquidity** for all settlement services (RTGS, T2S and TIPS)
- Central Liquidity Management (CLM) and the Main Cash Account (MCA) are used
 - to hold the liquidity centrally,
 - to connect the credit line,
 - to fulfil the minimum reserve requirement,
 - to participate in central bank operations (e.g. open market operations, standing facilities),
 - cash lodgements and cash withdrawals.
- A **participation** in CLM is mandatory for payment banks, if
 - the **minimum reserves** is held directly or in a pool of reserve accounts and/or
 - at least one **DCA** is opened in another settlement service (RTGS, T2S, TIPS)
- Payment banks can instruct **liquidity transfers** (camt.050) in CLM.
- Participation in CLM and holding one or more MCAs will be free of charge.

- **Outsourcing of activities** to a third party possible
 - Payment bank as co-manager → „CLM Account Holder“ or
 - Central bank as co-manager → „CLM CB Account Holder“
- **Using the technical access of the co-manager** (respective static data need to be defined)
- Identification of the co-manager when the MCA is set up by the central bank
- Automatic **transfer of access rights to the co-manager** (all users of the co-manager will be able to access the co-managed account according to the access rights granted for the own accounts)
- Functions (**U2A and A2A**) include i.a.
 - Instruction of liquidity transfers
 - Creation of reservations
 - Receiving status updates for the sent messages and transfers
 - Creation of message subscription and report configuration
 - Instruction of standing facilities
 - Queries regarding the account, available liquidity and minimum reserves
- Co-management can be set up on a cross border basis

TARGET2/T2S consolidation

Co-management für MCAs im CLM



6 **Central Liquidity Management (CLM)**

Overview

Account structure in CLM

Cash Transfer Orders in CLM

Liquidity Management Features in CLM

Central Bank Operations

Reminder from chapter 3 – General static data setup in CRDM

- In CRDM different accounts will be opened for the settlement in the TARGET Services

CLM

Main Cash Accounts

CLM CB Accounts

Overnight Deposit Accounts

Marginal Lending Accounts

CLM Dedicated Transit Accounts

CB ECB Accounts

ECB Mirror Accounts

RTGS

RTGS Dedicated Cash Accounts

RTGS Sub-Accounts

RTGS CB Accounts

RTGS Dedicated Transit Account

AS Guarantee Funds Accounts

AS Technical Accounts

TARGET2/T2S consolidation

Accounts in CLM



• Main Cash Account (MCA)

- Settlement of **central bank operations, liquidity transfers**, connection of the **credit line**
- Sum of balance + credit line **cannot be negative**
- **Identification** via **BIC11** (unique in CLM per currency) and **account number** (unique across all services/modules)
- Only **payment banks and AS** can open MCAs (party service type „CLM Account Holder“)
- Holding **more than one MCAs possible** – Definition of a **Default MCA** for
 - Central bank operations (i.a. open market operations, standing facilities)
 - Minimum reserve calculation incl. penalties
 - Interest payments
 - Connection of the credit line
- If a party holds at least one MCA and at least one RTGS DCA, a **1:1-link** needs to be defined (precondition for the automated liquidity transfer).
- For **rule-based liquidity transfers** in case of floor/ceiling breach an MCA can be linked with **different MCAs and/or RTGS DCAs**
- A payment bank, that holds an **DCA**, has to hold an **MCA with the same central bank**

CLM
Main Cash Accounts
CLM CB Accounts
Overnight Deposit Accounts
Marginal Lending Accounts
CLM Dedicated Transit Accounts
CB ECB Accounts
ECB Mirror Accounts

TARGET2/T2S consolidation

Accounts in CLM



CLM
Main Cash Accounts
CLM CB Accounts
Overnight Deposit Accounts
Marginal Lending Accounts
CLM Dedicated Transit Accounts
CB ECB Accounts
ECB Mirror Accounts

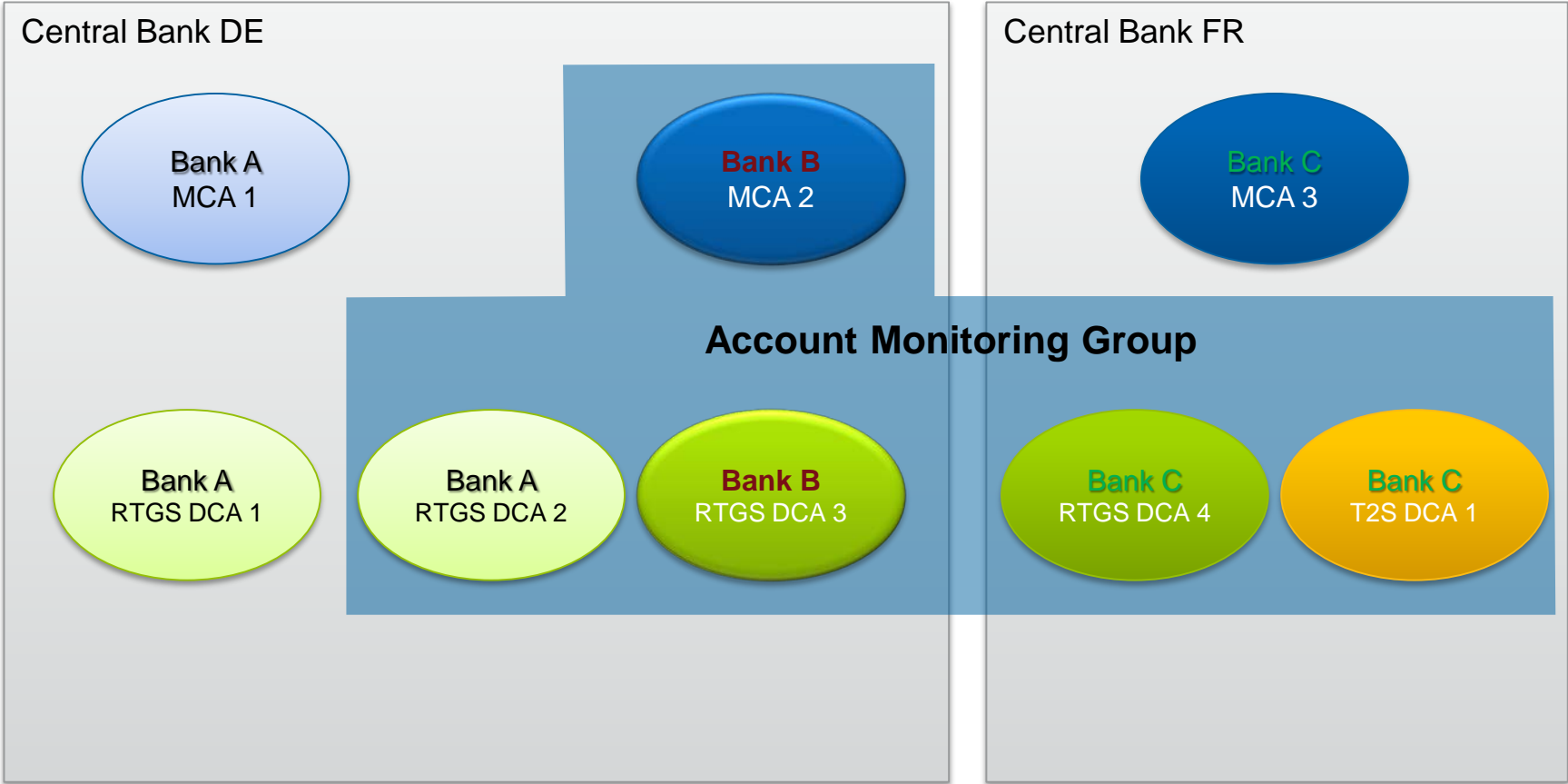
- **Overnight deposit account / marginal lending account**

- Accounts for the settlement of **standing facilities**
- Accounts are technically **owned by the central bank** but are **opened in the name of the participant**
- Access by the actor via the attribute „linked account“
- Opening for the party type „Central Bank“ – Service Party Type „CLM CB Account Holder“
- Identification via **account number** (unique accross all services/modules) - no BIC

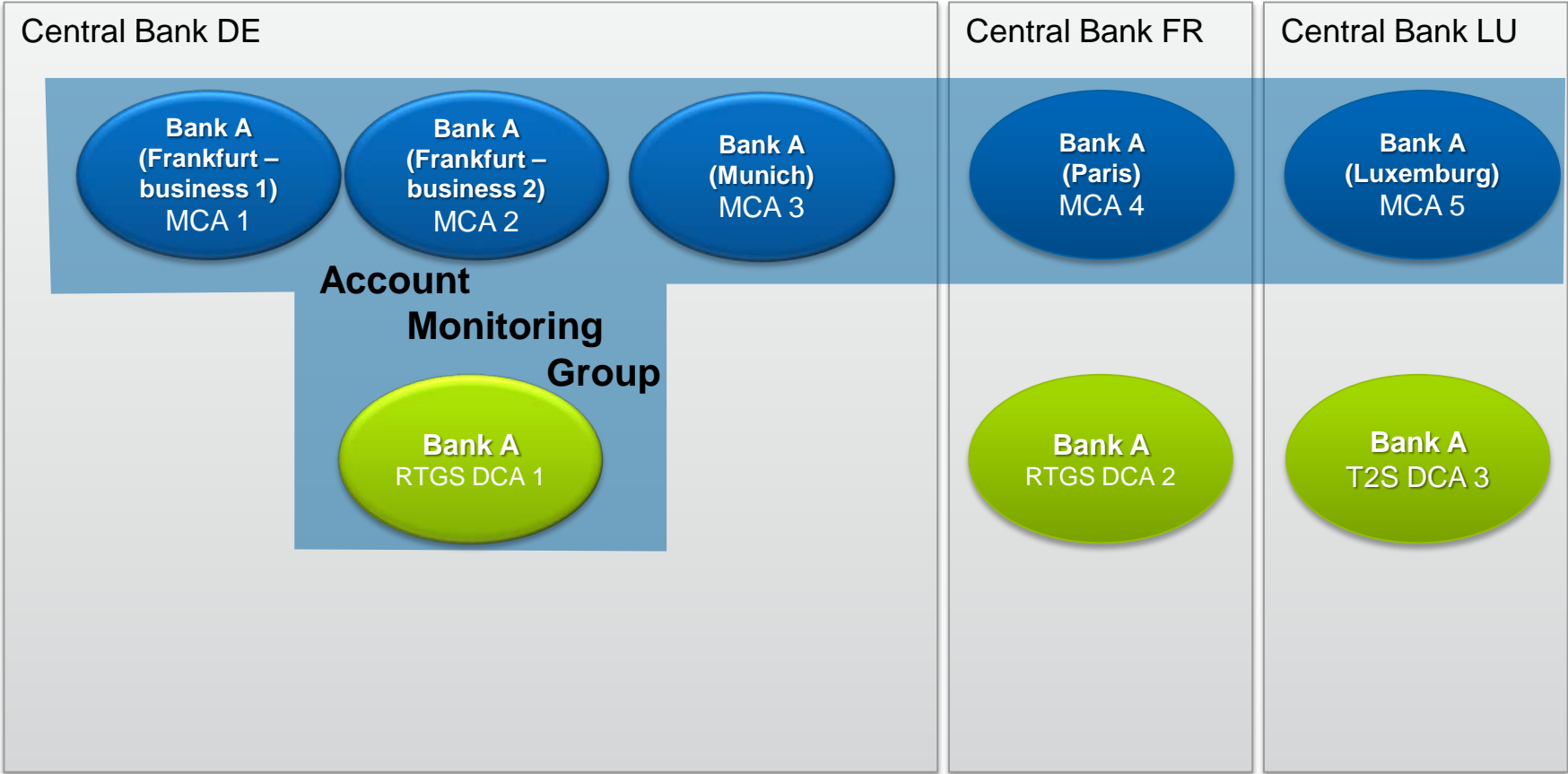
Account Monitoring Group

- **Optional** function
 - to create a group of accounts (**MCAs and DCAs**) in CRDM
 - to **monitor the available liquidity** of the grouped accounts (no settlement of liquidity transfers or other transactions within the group).
- The **administration** of the group is performed by the **CLM/RTGS account holder** in **CRDM in U2A mode**.
 - If an account out of the own data scope is to be added to the group it has to be added by the respective account holder.
 - A CLM account holder will be defined as „Account Monitoring Group Leader“.
 - Only the „Account Monitoring Group Leader“ can see the available liquidity on all accounts.
 - If the Account Monitoring Group Leader changes a new Account Monitoring Group needs to be created.
- An Account Monitoring Group can contain **accounts from different parties** (also held with another central bank).
- A MCA or DCA can be part of different groups.
- All **changes** will be valid as of the next business day.

Account Monitoring Group (example 1)



Account Monitoring Group (example 2)



6 Central Liquidity Management (CLM)

Overview

Account structure in CLM

Cash Transfer Orders in CLM

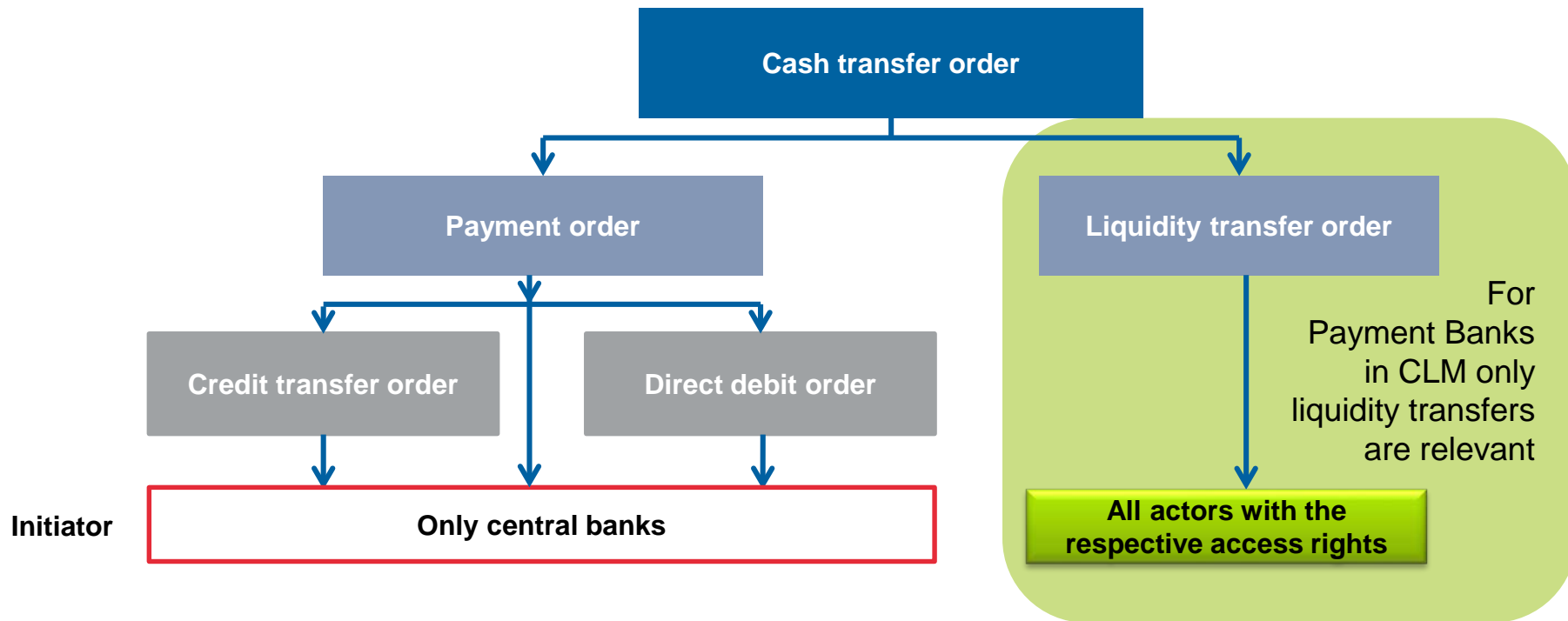
Liquidity Management Features in CLM

Central Bank Operations

TARGET2/T2S consolidation

Cash transfer orders in CLM

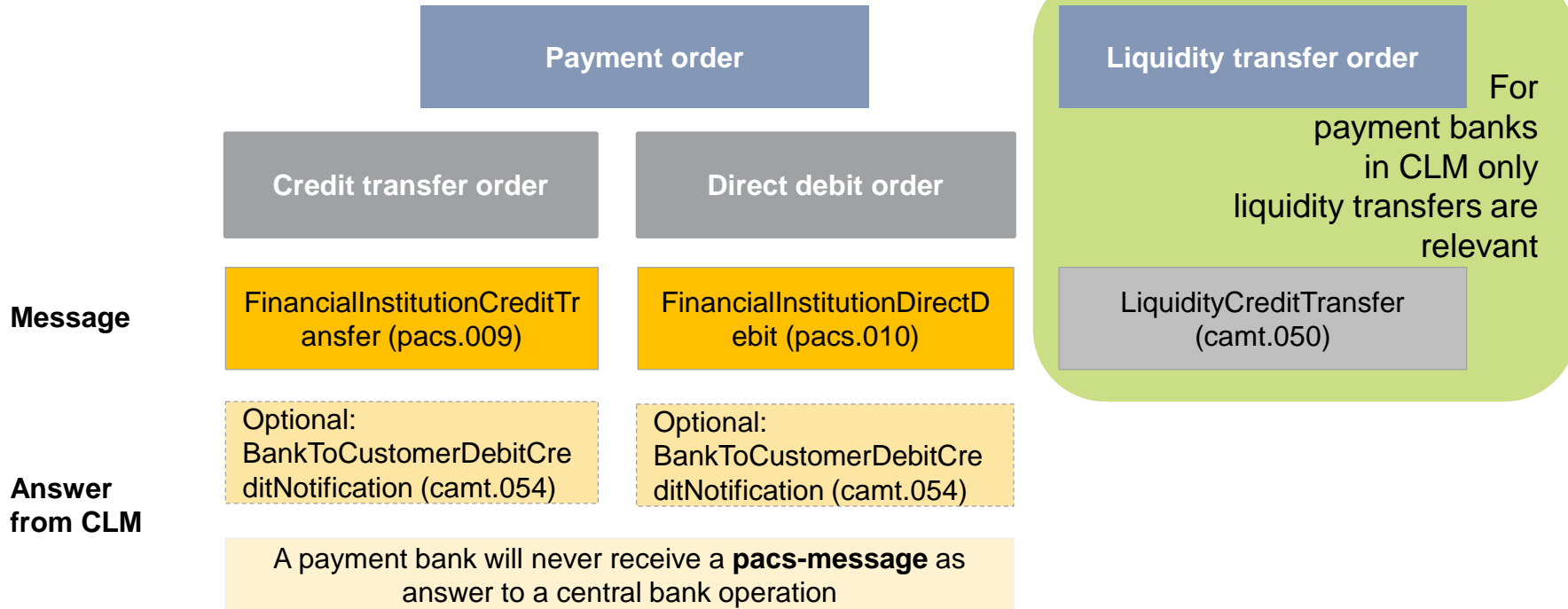
CLM differentiates between the following cash transfer orders



- Initiation via A2A requires the use of ISO 20022 compliant messages. The initiation is also possible via U2A.

TARGET2/T2S consolidation

Cash transfer orders in CLM



Business cases

- Update of credit line
- Standing facilities (partially via liquidity transfers)
- Central bank operations (e.g. main refinancing operations)
- Interest payments regarding central bank operations
- Debiting of invoices
- Cash withdrawals and cash lodgements
- Other operations of the central bank

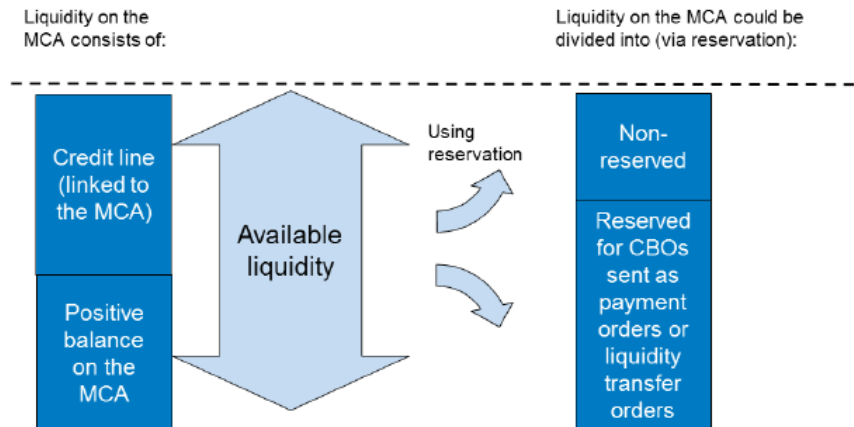
Available liquidity

Available liquidity consists of

- credit line (linked to only one MCA)
- positive balance
- possibly reduced by seizure of funds

Reservation means

- Reserved part for payment orders related to central bank operations and reduction of the credit line*
- Non-reserved part at free disposal

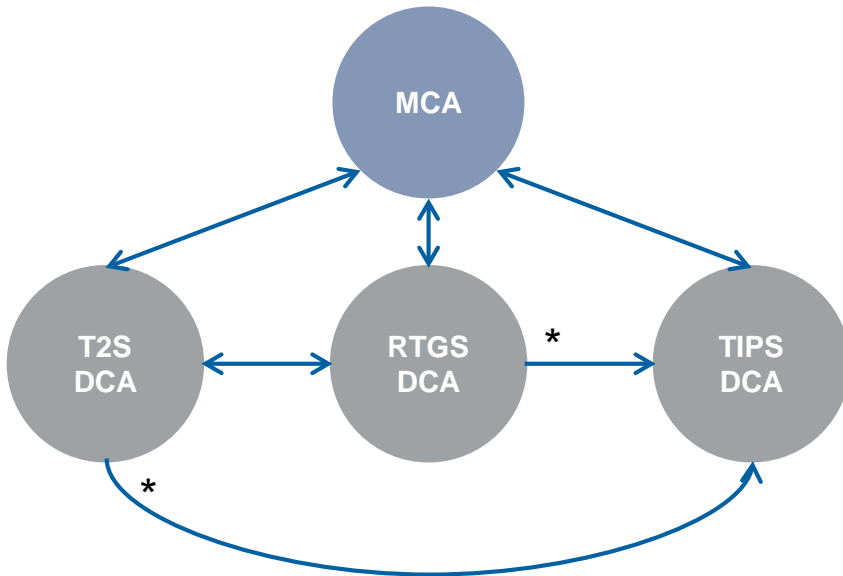


TARGET2/T2S consolidation

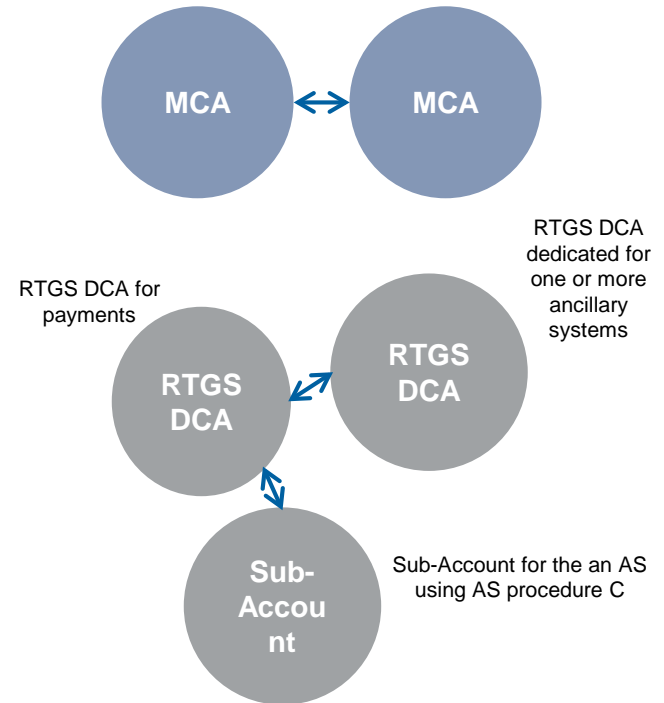
Liquidity transfers - overview

Inter-service liquidity transfer

Intra-service liquidity transfer



Liquidity transfers **between** CLM and RTGS, T2S or TIPS



Liquidity transfers **within** a settlement services

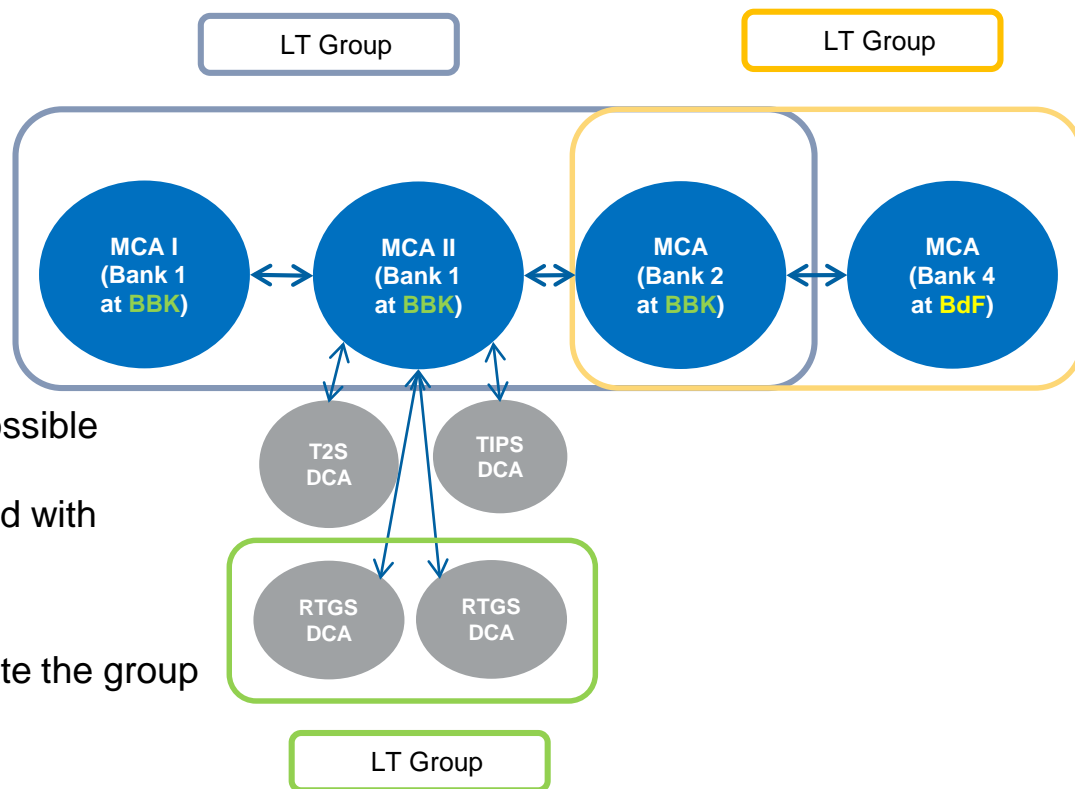
* A TIPS CR has to be approved to introduce this functionality.

TARGET2/T2S consolidation

Liquidity transfers – liquidity transfer group

Pre-condition for intra-service liquidity transfers is the creation of a so-called **liquidity transfer group**.

- Optional grouping of accounts within a settlement service to a **liquidity transfer group (LTG)**. An LTG can be created for CLM as well as for RTGS.
- An MCA / RTGS DCA can be part of **one or more** LTGs.
- Within an LTG MCAs / RTGS DCAs of **different parties** can be grouped (also cross-border).
- **Intra-service** liquidity transfers are only possible between **accounts of the same LTG** (except for transfers with a central bank and with accounts for standing facilities).
- The responsible central bank(s) administrate the group based on the respective order.



Use cases and messages

Initiator	Use case	Message
CLM account holder or authorised CLM actor	<ul style="list-style-type: none">• Between two MCAs (intra, within a liquidity transfer group)• MCA ↔ DCA of different service (inter)• MCA ↔ CB account (in CLM, RTGS or T2S)• MCA ↔ Overnight deposit account• Overnight deposit account → DCA and CB account of different services (inter)• MCA ↔ marginal lending account (CB as only initiator)	LiquidityCredit Transfer (camt.050)

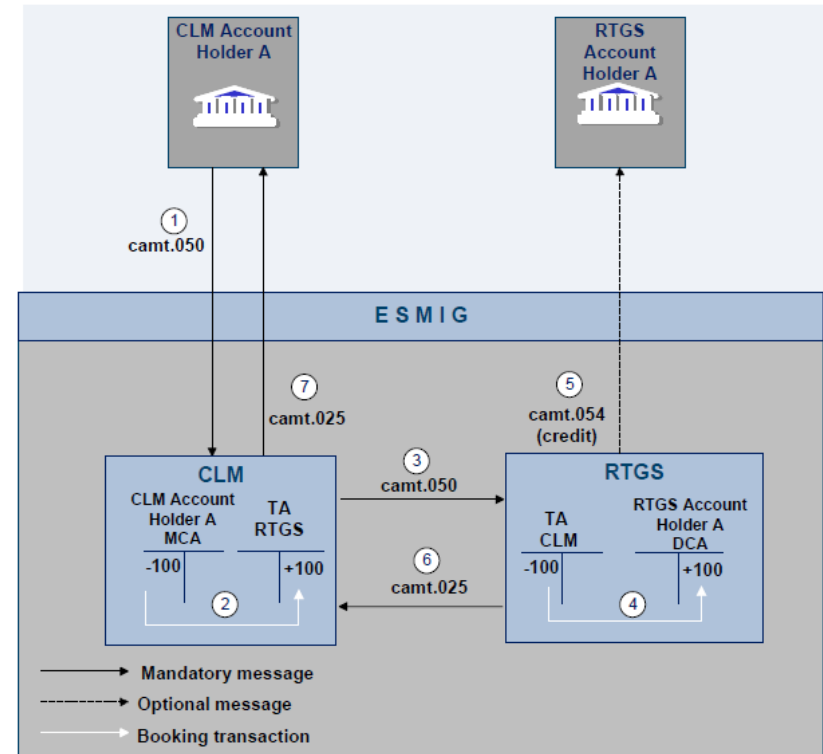
TARGET2/T2S consolidation

Liquidity transfers in CLM – message flow

Example of the message flow

Use case: MCA -> RTGS DCA

- 1 LiquidityCreditTransfer (camt.050) is sent from a CLM account holder via ESMIG to CLM.
- 2 Settlement in CLM.
- 3 LiquidityCreditTransfer (camt.050) is forwarded to RTGS.
- 4 Settlement in RTGS.
- 5 BankToCustomerDebitCreditNotification (camt.054 (credit)) is sent by RTGS via ESMIG to the RTGS account holder (optional).
- 6 A receipt (camt.025) generated in RTGS is sent to CLM.
- 7 A receipt (camt.025) is sent by CLM via ESMIG to the CLM account holder.



Types	CLM
Immediate liquidity transfers	Immediate transfer of liquidity initiated by the account holder or another authorised CLM actor in A2A or U2A
Automated liquidity transfers	Transfer of liquidity initiated by CLM sent to RTGS in order to transfer liquidity from the linked RTGS DCA due to a queued/pending CBO (mandatory)
Rule-based liquidity transfers	Transfer of liquidity initiated by CLM due to a floor and/or ceiling rule (configuration done in CRDM)
Standing orders for liquidity transfers	Recurring transfer of liquidity processed every business day at certain business day events (configuration done in CRDM)

TARGET2/T2S consolidation

Liquidity transfers - types

Liquidity transfers can either

- **push** liquidity to another cash account or
- **pull** liquidity from another cash account (only in CLM).

Liquidity transfer type	Initiator	Use case	Push/Pull	Counterpart cash account in	
Immediate liquidity transfer order	CLM Actor	Intra-service	Push	CLM ³⁶	³⁶ LTG necessary
		Inter-service	Push or pull ³⁷	RTGS, TIPS, T2S	³⁷ only U2A possible
Automated liquidity transfer order	System (CLM)	Inter-service	Pull	RTGS	
Rule-based liquidity transfer order		Inter-service	Push or pull	RTGS	
Standing order liquidity transfer order		Intra-service	Push	CLM ³⁸	³⁸ LTG necessary
	Inter-service	Push	RTGS, TIPS, T2S		

TARGET2/T2S consolidation

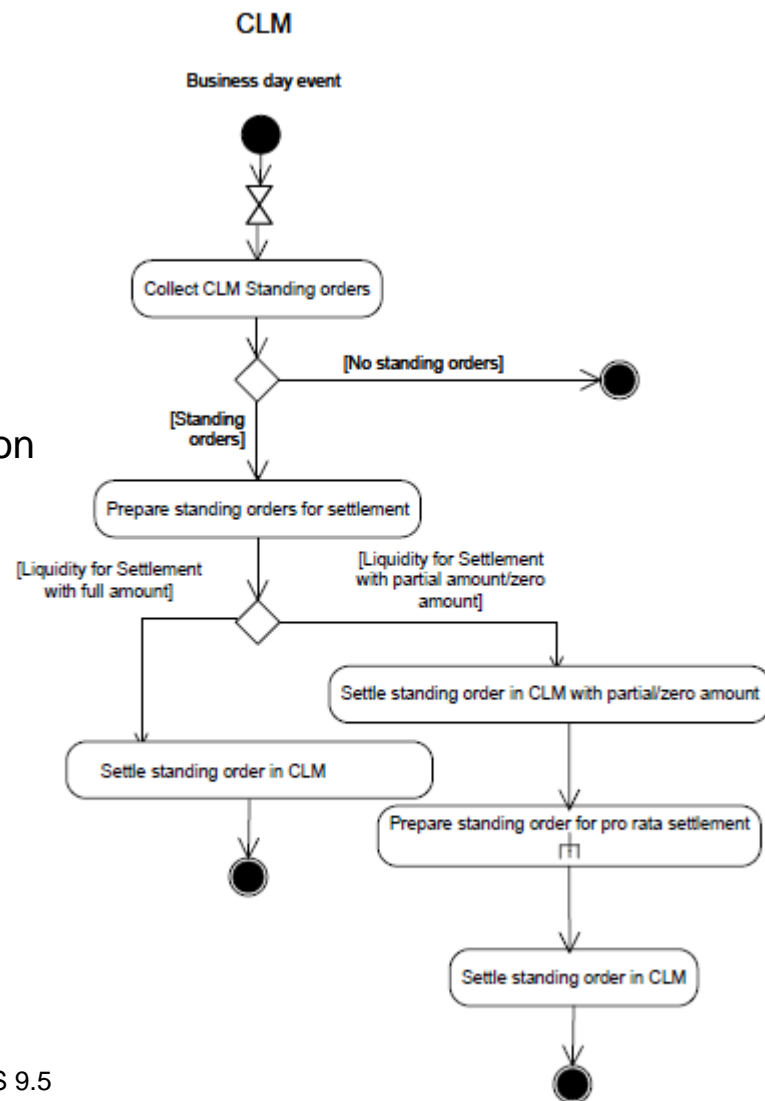
Liquidity transfers – standing orders

- **Recurring order** to transfer liquidity
 - once each business day;
 - at a certain event during the business day;
 - with a pre-defined amount;
 - limited or unlimited.
- The **administration** of the standing order is done by the **account holder in CRDM**.
- Changes will be valid as of the next business day.
- **Use cases** in CLM:
 - Intra-service: MCA → MCA (within a Liquidity Transfer Group)
 - Inter-service: MCA → DCA (RTGS, T2S, TIPS)

TARGET2/T2S consolidation

Liquidity transfers – standing orders

- Standing orders are processed at a certain event during the business day.
- In case of **insufficient funds on the MCA**
 - a partial execution is possible (also with the amount 0,00 €).
 - standing orders with the same execution event will be processed „pro rata“.
 - the amounts not processed due to partial execution will not be queued (i.e. no further processing)



Across services

- **FIFO principle** for the processing of liquidity transfers
- **Intra-service liquidity transfer** only if
 - all MCAs are part of the same liquidity transfer group or
 - a CB account is involved.
- Liquidity transfer are generally **not queued** instead
 - executed immediately (fully, partially) or
 - rejected.
 - Exception: automated liquidity transfers on the RTGS DCA
- **Rule-based liquidity transfers** (floor/ceiling) will only be executed if the account holder has defined them in CRDM in advance.
- Speciality in CLM:
 - **Partial settlement only** for rule-based, automated liquidity transfers and standing orders

Across services

The **order** (priority; 1 = high ...) of the **tapping of liquidity** in CLM is **pre-defined**.

Example central bank operation in CLM

1. Reserved part for CBOs on the MCA
2. Non-reserved part on the MCA
3. Non-reserved part on the RTGS DCA
4. Reserved part for transactions with „high“ priority
5. Reserved part for transactions with „urgent“ priority

Business case CLM	Tapping of liquidity reservation				
	MCA		Linked RTGS DCA ⁴¹		
	CBOs	Non-reserved	Urgent (U)	High (H)	Non-reserved
Credit line decrease	2	1	5	4	3
CBOs (including cash withdrawal; except credit line decrease)	1	2	5	4	3
Liquidity transfer – not related to CBOs		1			

Example Liquidity Transfers in CLM

1. Only non-reserved part of the MCA

Speciality – automated liquidity transfer

- In case of insufficient funds on the MCA for the execution of
 - central bank operations (CBO) or
 - seizure of fundsan **automated liquidity transfer pulling liquidity from the RTGS DCA** is executed.
- The respective order is given **highest priority over all other pending transactions** in RTGS.
 - In case of **insufficient funds** on the RTGS DCA the automated liquidity transfer will be **partially settled** and the remaining part will be **queued - possibly more than once - on top of the queue**.
 - Any **incoming liquidity** on the RTGS DCA is **transferred stepwise to the MCA** in CLM until the original amount of the automated liquidity transfer order is fully executed. Until then the RTGS DCA will be blocked for settlement.
- In case of **incoming liquidity** on the MCA,
 - a **new automated liquidity transfer** with the new amount will be sent to RTGS. The previous order will be rejected by RTGS.
 - the **automated liquidity transfer will be deleted**, if the incoming liquidity on the MCA is sufficient for the execution of the pending CBOs or seizure funds.

6 Central Liquidity Management (CLM)

Overview

Account structure in CLM

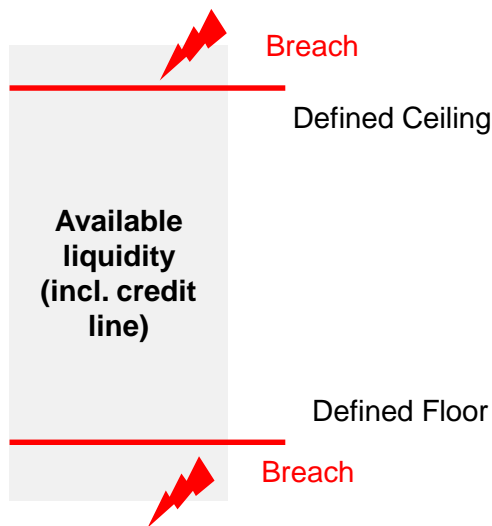
Cash Transfer Orders in CLM

Liquidity Management Features in CLM

Central Bank Operations

floor/ceiling

- **Optional** function
 - defining a **floor** or a **ceiling**.
 - for each MCA / CLM CB account
 - administrated by the **CLM account holder** (or third party).
 - in **CRDM**.



Possible reactions (options)

- that can be combined
- that are chosen by the account holder

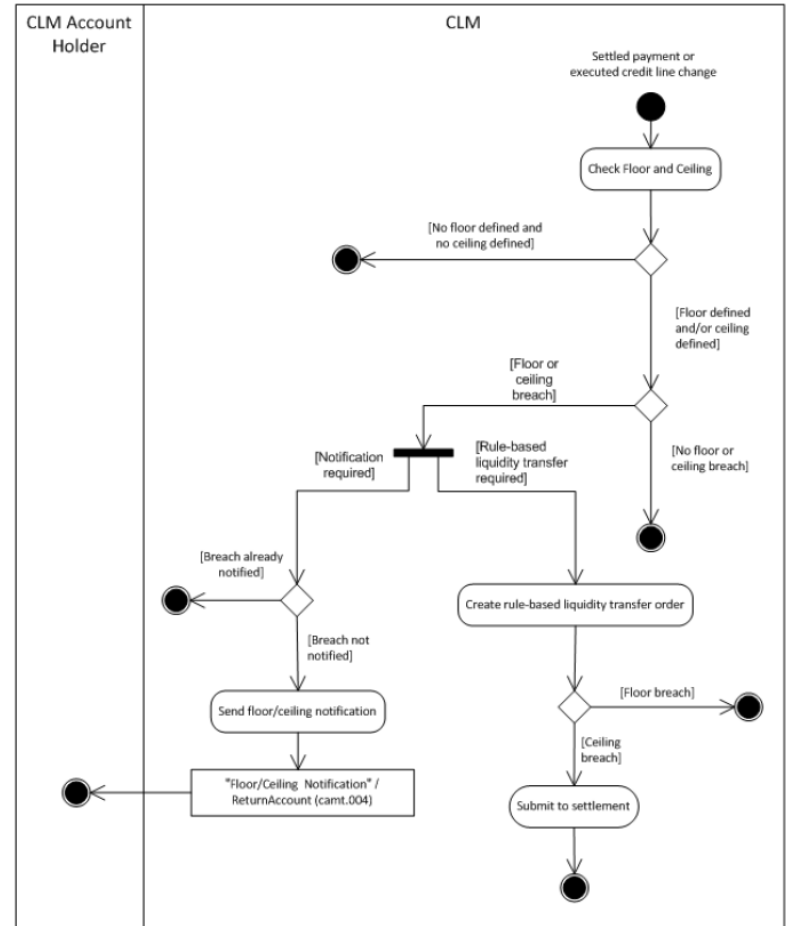
Option 1: CLM **informs** the account holder about the breach. The account holder decides on the next steps.

Option 2: CLM processes a **rule-based liquidity transfer** with the linked account (MCA, RTGS DCA, CLM CB account). Different accounts can be defined for debit/credit.

floor/ceiling

Consideration in the settlement process

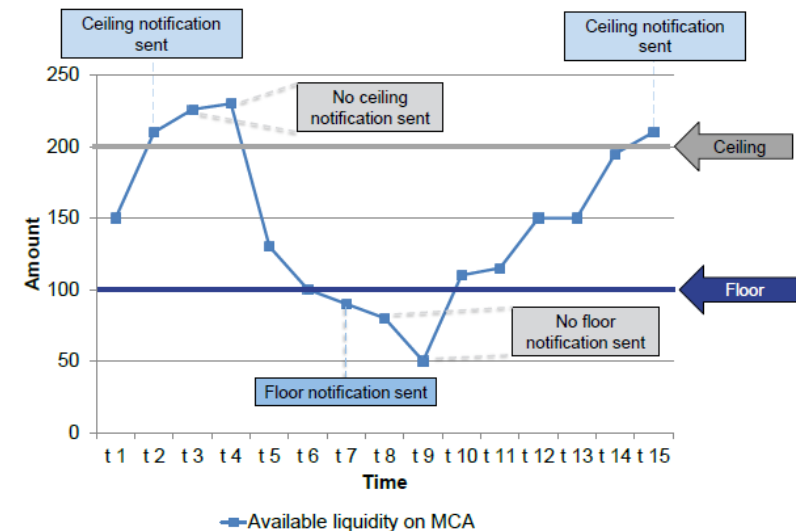
- After the settlement of payments or a change of the credit line, CLM monitors the compliance with the defined floor and ceiling amounts.
- If no floor or ceiling amount was defined this process ends.
- In case of a breach CLM checks which option (1 and/or 2) was chosen by the account holder and initiates the respective process.



floor/ceiling

Option 1 – Notification in case of a breach

- CLM sends a notification in U2A or A2A* mode with the information that a floor or ceiling amount was breached.
- The account holder will be notified with each breach.
- If the available liquidity further decreases after the breach of the floor or further increases after the breach of the ceiling, no additional notification will be provided.

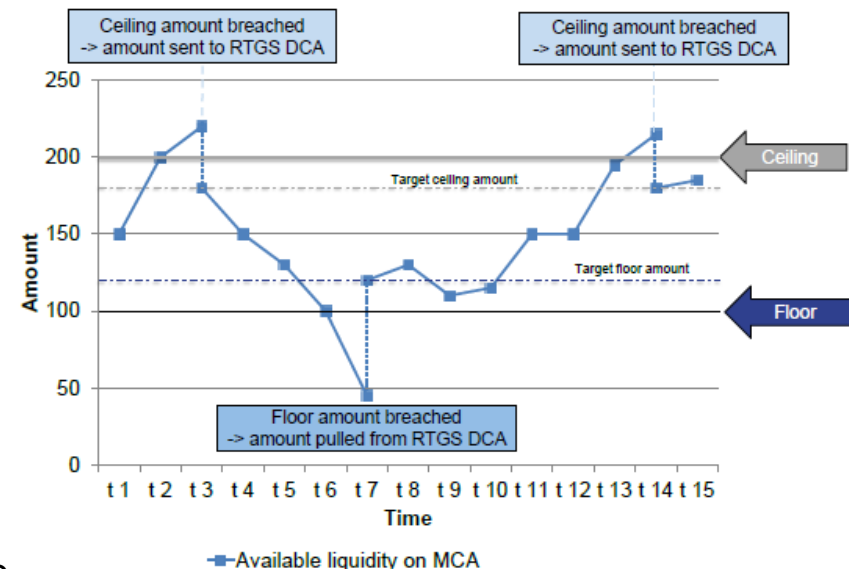


* ReturnAccount (camt.004)

floor/ceiling

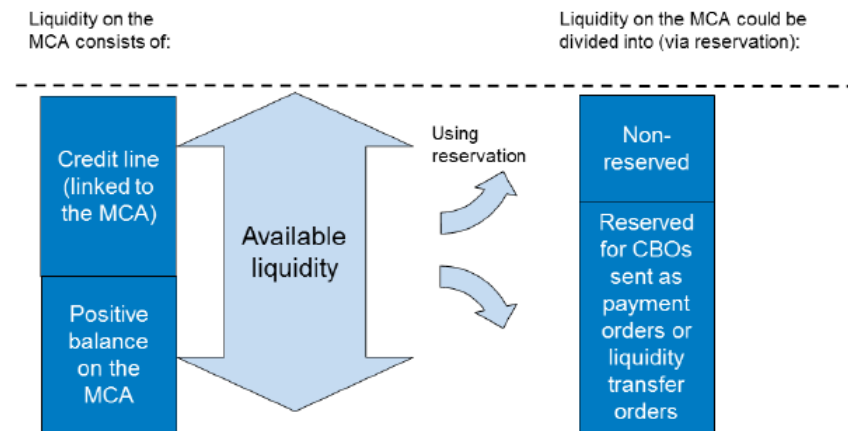
Option 2 – rule-based liquidity transfer in case of a breach

- CLM initiates a rule-based liquidity transfer.
- Case 1: Breach of the floor amount
 - CLM pulls liquidity from the defined account (MCA, CLM CB Account or RTGS DCA)
 - to reach a pre-defined amount (that can be different from the floor amount).
 - In case of insufficient liquidity on the defined account the liquidity transfer will be partially settled. No further settlement attempt takes place.
- Case 2: Breach of the ceiling amount
 - Liquidity transfer to the defined account (MCA, CLM CB Account oder RTGS DCA)
 - The amount to be transferred is the difference between the currently available liquidity on the MCA or CB account and the predefined target amount.



Reservation of liquidity

- Optional function
 - to **reserve** liquidity on the MCA,
 - for the settlement of **central bank operations** (incl. the reduction of the credit line),
 - by the **CLM account holder** (or third party).
 - **Current** reservation with **immediate effect**
 - **Standing order reservation**
- Liquidity can be reserved during the whole business day (excl. maintenance window) in **A2A or U2A mode**.
- If the „non-reserved“ amounts of the available liquidity are not sufficient for the reservation
 - the reservation will be settled partially.
 - the pending value will be placed in the queue until the target amount is reached.



Reservation of liquidity

Standing order reservation

- The administration is done in **CRDM**.
- The **creation** is done in **U2A** mode. **Modifications can be done in U2A and/or A2A**.
- The reservation will be settled **every day during the start of day** with the defined amount.
- Reservations that were **not fully settled until the end of day** (due to lack of liquidity) will be **rejected**.
- The creation, modification and deletion (by setting to 0,00) are **valid as of the next business day**.

Reservation of liquidity

Current reservation

- The creation and administration is done in **CLM**.
- The reservation is **immediately and only valid** on the current business day.
- During the business day modifications of the amount (incl. setting to 0.00) are possible.
- This functionality may also be used for seizure of funds by central banks.
- Reservations will be deleted, if
 - the event „Cut-off for CLM RTS“ is reached (exception: reservations for seizure of funds)
 - the reservation was recalled or
 - a new reservation was entered in CLM.

Principles of liquidity management – summary

- CLM allows the reservation of a pre-defined amount for **central bank operations** (incl. the reduction of the credit line).
- In case of insufficient liquidity on the MCA for the settlement of central bank operations or seizure of funds, the missing liquidity will be pulled from the linked RTGS DCA (**automated liquidity transfer**)
- The following sequence applies:

Business case	Tapping of liquidity reservation				
	MCA		Linked RTGS DCA ⁴¹		
	CBOs	Non-reserved	Urgent (U)	High (H)	Non-reserved
Credit line decrease	2	1	5	4	3
CBOs (including cash withdrawal; except credit line decrease)	1	2	5	4	3
Liquidity transfer – not related to CBOs		1			

⁴¹Related to automated liquidity transfer due to queued/pending CBO or credit line decrease

6 Central Liquidity Management (CLM)

Overview

Account structure in CLM

Cash Transfer Orders in CLM

Liquidity Management Features in CLM

Central Bank Operations

TARGET2/T2S consolidation

Overview of the central bank operations



Central bank operations that settle on the **default MCA**:

- Update of the **credit line**
- Marginal lending and overnight deposits (**standing facilities**)
- **Open market operations**, e.g. main and longer refinancing operations
- **Interest payments** regarding...
 - Standing facilities, minimum reserves, excess reserves
 - Accounts subject to other purposes of interest calculation
 - Any other activity carried out by CBs in their capacity as CB of issue.

Operations that settle on **any MCA**:

- Debit of **invoice***
- **Cash withdrawals and cash lodgements**
 - At the Bundesbank the cash handling account will be used for cash withdrawals
 - Cash lodgements generally will be executed on the T2 cash account
- **Liquidity transfers**

* For the debit of invoices another MCA can be defined.

TARGET2/T2S consolidation

Overview of the central bank operations categories



Central bank operation	Initiation via
Update of the credit line	ModifyCreditLine* Connected Payment
Standing facilities (manually) <ul style="list-style-type: none"> • Marginal lending on request - execution • Overnight deposit – creation • Overnight deposit – reduction of the amount before the EoD (reverse order) 	Liquidity transfer (A2A or U2A)
Standing facilities (automated) <ul style="list-style-type: none"> • Automated marginal lending • Marginal lending reimbursement (on request or automated) • Overnight deposit refund 	CLM
Debit of the invoice amount	Direct debit (only A2A)

*not used by Bundesbank

TARGET2/T2S consolidation

Overview of the central bank operations categories

Central bank operation	Initiation via
<p>Cash withdrawals and cash lodgements*</p> <p>Monetary policy operations (except for standing facilities)</p> <p>Any other activity carried out by CBs in their capacity as CB of issue</p>	<p>Credit transfer / Direct debit</p>
<p>Interest Payment</p> <ul style="list-style-type: none"> • Marginal Lending • Overnight deposit • Minimum reserves • Excess reserves • Other possible activities 	<p>CLM</p>

*For the cash withdrawals the cash handling accounts will be used.

TARGET2/T2S consolidation

Overview of the central bank operations categories



Summary

- Central bank operations can be initiated in A2A and (partially) in U2A mode
- **Payment orders** can only be sent by central banks in CLM
- **Liquidity transfers** can be initiated by all CLM actors with the necessary privileges
- Central bank operations like interest payments, use of automated marginal lending and reimbursement of standing facilities will be processed **automatically** in CLM

- Possibilities for the **minimum reserve fulfilment** in CLM:
 - Direct
 - Indirect through a leading CLM account holder (CLM UDFS v2.1 chapter 3.3 and 5.5.1)*
 - In a pool of reserve accounts of several parties
 - Not subject to minimum reserves (e.g. (non-)Euro CBs or investment firms)
- **Direct holding of minimum reserves**
 - Considering own **accounts** (MCAs, DCAs in RTGS, T2S and TIPS) **of the same party**
 - Definition of a **leading CLM account holder** (CLM account holder himself) for the
 - Minimum reserve management
 - Calculation and settlement of interest on minimum reserves, excess reserve and other purposes
 - Definition of a **default MCA** (also used for central bank operations)

*Currently it is planned to not use this functionality by Deutsche Bundesbank. The indirect holding of minimum reserves will, like today in TARGET2-Bundesbank, be managed outside of T2.

- **Holding minimum reserves in a pool of reserve accounts of several parties**
 - Possibility to hold minimum reserves on accounts (in CLM, RTGS, T2S and TIPS) **across different parties** (CLM account holder at the same central bank)
 - Taking into account the balances on all accounts belonging to the pool
 - Definition of a **leading CLM account holder** is necessary
 - Pooling is only possible at the same central bank – **no cross-border pooling**
 - Interest payments are settled on the **default MCA of the leading CLM account holder**

Please note: A pool may only consist of parties belonging to the same legal entity!

TARGET2/T2S consolidation

Minimum reserve fulfilment in CLM



- Different amounts will be taken into account
 - **Minimum reserve requirement:** Amount that needs to be held on average within the maintenance period
 - **Minimum reserve fulfilment:** Amount that was held on average during the maintenance period
 - **Excess reserve:** Amount that was on average held above the minimum reserve requirement
 - Breakdown in a two-tier system – exempt and non-exempt tier
- Current decision of the Governing Council to introduce a two-tier system for remunerating excess liquidity holdings has not yet been taken into account in the UDFS v2.1
 - Update foreseen for UDFS Version 2.2
 - Changes on the basis of CSLD CR 0031 are considered

- CLM needs the **EoD balances of all relevant accounts held in the TARGET Services** (provision through general ledger files)
 - Balances on MCAs in CLM
 - Balances on DCAs in RTGS, T2S, TIPS
 - Only in exceptional cases balances can only be held overnight on **cash handling accounts***

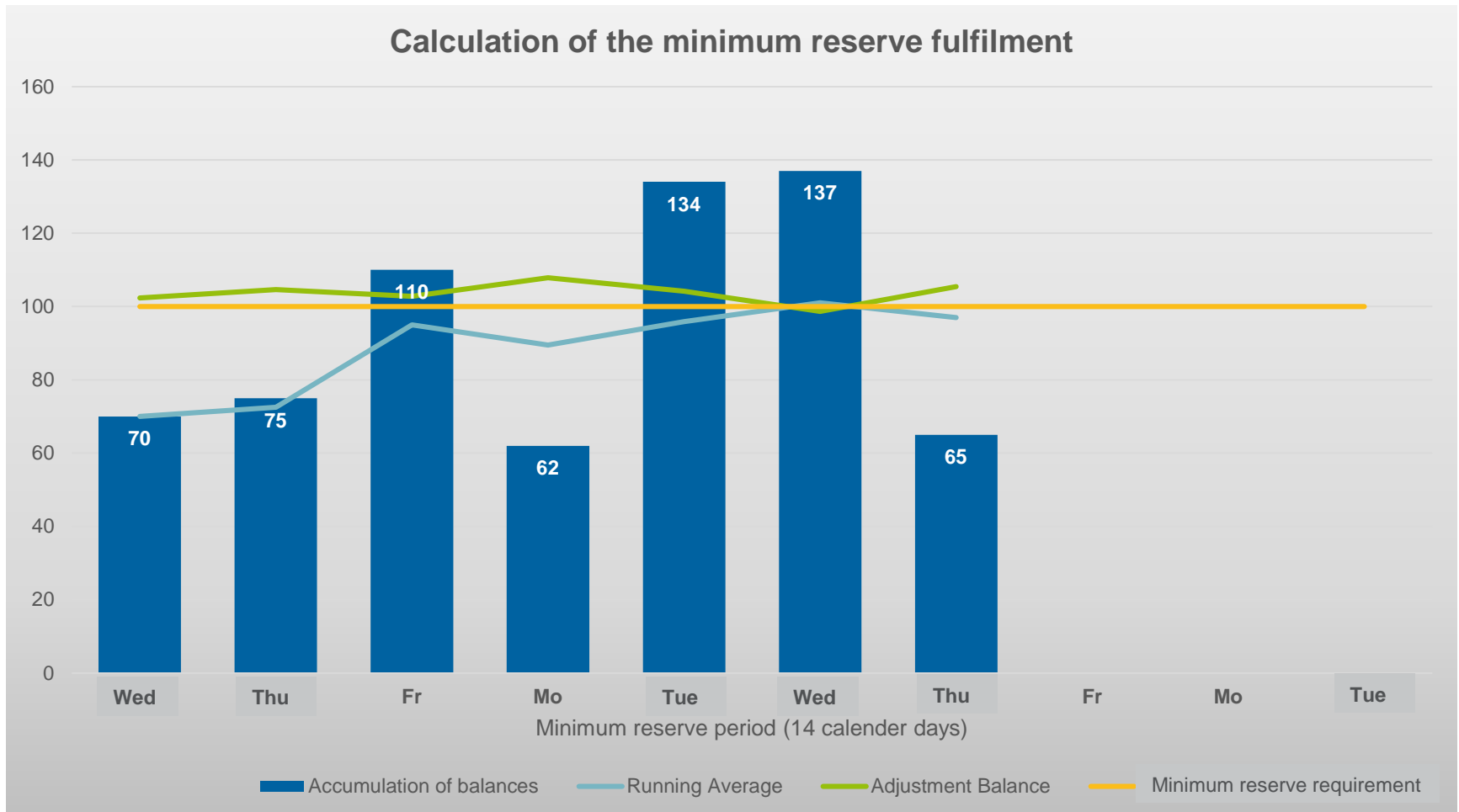
Daily calculations

- Having received all EoD balances to be considered, CLM executes the following calculations for the current maintenance period on a daily basis
 - **Accumulation of balances:** Building the sum of all relevant EoD balances of the cash accounts to be included in the minimum reserve requirement
 - **Running average:** Calculated as the arithmetic mean of the accumulated balances from the first business day of the current maintenance period until the day before the next business day
 - **Adjustment balance:** CLM compares the running average with the minimum reserve requirement for the whole period and shows the amount to be held in average during the remaining period in order to fulfil the reserve requirement.
- The calculations are performed for each party or for the pool of reserve accounts..

* In this case balances will be included in the minimum reserve calculation if requested by the participant and at the discretion of Deutsche Bundesbank.

TARGET2/T2S consolidation

Calculation of the minimum reserve fulfilment



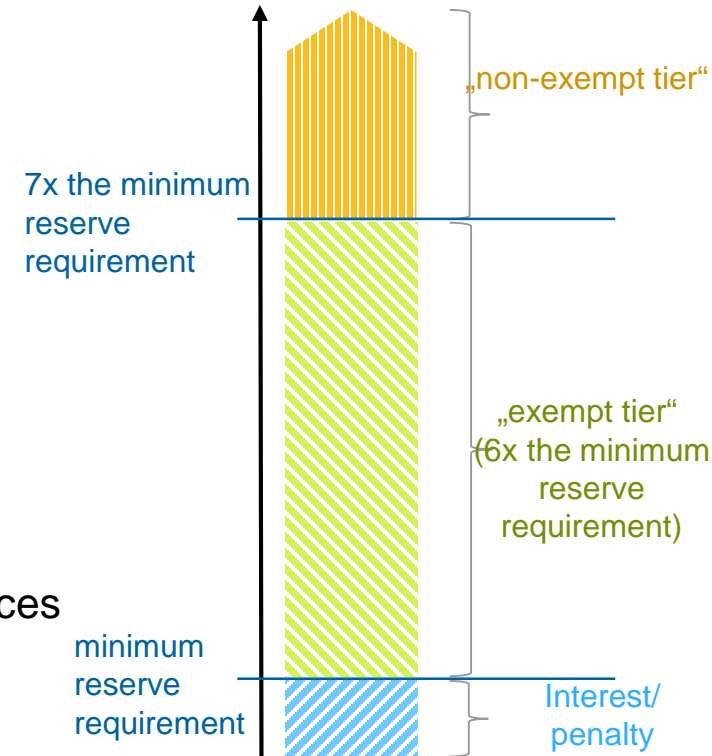
* The values represented by lines correspond to the values valid at the end of the day. These values will be visible in CLM as of the next business day.

TARGET2/T2S consolidation

Calculation of the minimum reserve fulfilment

Periodic calculations

- At the end of the **maintenance period** CLM calculates
 - The **interest** to be paid to the party or the pool for holding the minimum reserves
 - **Penalties**, for the amount that was missing for fulfilling the minimum reserve:
 - **The „exempt tier“ incl. the interest**
(currently the minimum reserve requirement multiplied with 6 is currently free of interest)
 - **The „non-exempt tier“ incl. the interest**
 - **Interest for other possible purposes**
- If the minimum requirement is set to 0 all positive balances will be handled like the „non-exempt tier“.



Generate payment orders

- At the end of the maintenance period CLM creates the following payment orders
 - **Interest payment** for the minimum reserve fulfilment
 - In case of an interest rate of 0.00 % no payment order is created.
 - **Payment orders related to penalties**
 - The central bank has to decide on the penalty rate and authorise the penalty
 - **Interest payment** for the „*exempt*“ and „*non-exempt*“ tier
 - In case of an interest rate of 0.00 % no payment order is created.
- **Example I: CLM account holder receives interest**
 - Credit on the Default MCA of the leading CLM account holder and debit on the CLM CB accounts of the central bank (pacs.009)
- **Example II: CLM account holder has to pay interest**
 - Debit on the Default MCA of the Leading CLM Account Holder and Credit in the CLM CB Account of the Central Bank (pacs.010)

TARGET2/T2S consolidation

Standing facilities



- With the help of standing facilities liquidity can be absorbed or provided **overnight**.
- Two types
 - **Overnight deposit facility**
 - **Marginal lending facility**
 - Marginal lending on request
 - Automatic marginal lending
- Both will be booked in CLM as **central bank operations**.
- Can be used by **monetary policy counterparties**.

- The central bank creates an **overnight deposit account** in the name of the monetary policy counterparty (**owner** of the account is the **central bank**)
 - Access for the CLM account holder through the attribute „linked account“
- Liquidity will be manually transferred to the overnight deposit account (camt.050 or U2A)
 - Liquidity can be provided from an MCA, RTGS DCA, T2S DCA, TIPS DCA or a sub-account
- The CLM account holder can send a liquidity transfer to **reduce the overnight deposit facility** until the „*General cut-off for standing facilities*“ (reverse transaction)
(18:15 / 18:30 on the last day of the minimum reserve period)
- Liquidity transfers will be executed immediately and will not be placed in the queue or partially settled.
- The **reimbursement and interest payment** are performed on the **next business day** ~ 19:00.

Reimbursement on the next business day

- CLM generates the following cash transfer orders around 19:00
 - Liquidity transfer for the **reimbursement** to the default MCA of the CLM account holder
 - **Positive interest rate:** Payment order for the interest payment crediting the default MCA of the CLM account holder
 - **Negative interest rate:** Payment order for the interest payment debiting the default MCA of the CLM account holder
 - **Interest rate of 0.00%:** no payment order generated
- The reimbursement and interest payment are two independent cash transfers.

TARGET2/T2S consolidation

Standing facilities – marginal lending on request



- Bundesbank opens a **marginal lending account** for monetary policy counterparties (**owner** is the **central bank**)
 - Access of the CLM account holder through the attribute „linked account“
- Marginal lending on request is requested by the **CLM account holder with the central bank**
- Marginal lending on request can be requested until „*CB cut-off for the use of marginal lending on request*“ (18:40 / 18:55 on the last day of the minimum reserve period)

- The **reimbursement on the next business day (t+1)** and the processing of the **interest** will take place in CLM at around 19:00
 - CLM generates a liquidity transfer for the reimbursement and a payment order for the interest payment
 - CLM uses the interest rate for the marginal lending
- The **liquidity transfer for the reimbursement** debits the MCA of the CLM account holder and credits the marginal lending account
- The **payment order for the interest** credits the account of the central bank and debits the MCA of the CLM account holder
 - In case of an interest rate of 0.00 % no payment order is generated

TARGET2/T2S consolidation

Standing facilities – automatic marginal lending



- Automatic marginal lending is used to **turn an intraday credit into an overnight credit**, if the aggregated balance of an institution is negative
 - Aggregated balance: Sum of all balances of a party's DCAs and MCAs
- Pre-condition for the use of the automatic marginal lending is being a **monetary policy counterparty**
- This is an automatic process performed by CLM at the end of the business day
 - Before initiating the calculation CLM needs to receive all EoD balances from RTGS, TIPS and T2S
 - Debiting the marginal lending account via a connected payment

Reimbursement on the next business day

- The payment orders for the **reimbursement** of the automatic marginal lending and the **interest payment** are **automatically generated** by CLM
 - **Reimbursement:** CLM generates a connected payment debiting the MCA of the CLM account holder and crediting the marginal lending account
 - **Interest payment:** „normal“ payment order
 - In case of an interest rate of 0.00% no payment order is generated

TARGET2/T2S consolidation

Update of the credit line



- The central bank administrates the credit line, which is linked to the default MCA of the CLM account holder, through
 - Modify Credit Line (will be used as of the introduction of ECMS in November 2023)
 - Connected payments (used by BBk as of November 2022)

Connected payments

- Payment orders instructed by the central bank with a concurrent change of credit line
 - If only the credit line is to be changed, the amount indicated in the connected payment is 0.
 - The delta amount will be included in the connected payment
- Settlement of connected payments not possible
 - between „*CB cut-off for marginal lending on request*“ and „*Start of CLM RTS*“ (t+1)
 - during the maintenance window
- **Decrease of the credit line**: pacs.009
- **Increase of the credit line**: pacs.010
- Connected Payments will **never be queued**, instead they are either settled immediately or rejected

TARGET2/T2S consolidation

Scope of the cash handling accounts

Background

- Decision of the Governing Council

[...] **funds** might be reflected **outside of T2 as long as these funds are** (i) fully **committed for cash withdrawals**; and (ii) are **only held intraday**.



Consequence for the scope of the cash handling accounts:

Change needed, because as of the go live of the TARGET2/T2S consolidation positive balances may only be held outside T2 (MCAs and/or RTGS DCAs) if

- **funds are fully committed for cash withdrawals** and
- **are only held intraday**.

Effects on the liquidity management

Since positive balances must not be held overnight:

- **Cancellation of the (precautionary) liquidity coverage on the previous business day**
 - As of November 2021 the (automated) liquidity coverage for cash withdrawals on the cash handling accounts can be instructed on the same business day from 02:30 onwards in T2.
- **The transfer of positive balances to T2 (MCA, RTGS DCA) needs to be instructed by the account holder at the end of the day.**

Recommendation for easing the liquidity management:

Avoid positive balances at the end of the day

- **Cash lodgements only on the RTGS DCA or the MCA?**
 - **Cash lodgements on cash handling accounts** are still possible (e.g. for sameday cash withdrawals) but the **remaining positive balances have to be transferred to T2 at the end of the day.**
- **Settlement of invoices, refund of surpluses/deficits resulting from cash withdrawals/cash lodgements will not be possible anymore?**
 - Recommendation: Use of an internal cash account (Caution: T2 accounts are not directly reachable via SEPA).

Effects on the cheque transactions on cash handling accounts

- **No issuance of crossed cheques drawn on cash handling accounts** because positive balances or accounts may only be held or opened outside of T2 for cash withdrawals.
 - Use of crossed cheques drawn on T2 accounts (MCAs and/or RTGS DCAs) will (still) be possible
 - Issuance of cashier's cheques drawn on cash handling accounts for customers will be still possible but disposition problem exists (when will the customer withdraw the amount?)
- **Special case: Issuance of guaranteed Bundesbank cheque**
 - Use of guaranteed Bundesbank cheques drawn on a cash handling account will (still) be possible. The coverage (cheque amount plus fee) needs to be – like today – provided on the cash handling account on the day the cheque will be guaranteed and transferred to an internal Bundesbank-account.
 - After 15 days (guarantee period) the cheque amount will be transferred to a **pre-defined MCA or RTGS DCA**.

TARGET2/T2S consolidation

Cash withdrawals and cash lodgements



- Until further notice **cash handling accounts** are used
- Multi-stage process
 - a) **Provide liquidity** on the cash handling account
Cash withdrawal (not part of this presentation)
 - b) **Transfer of positive balances from the cash handling account**
 - c) **Cash lodgements on T2 accounts**
- **A – Provide liquidity** on the cash handling account
 - **A.1:** from CLM MCA through camt.050 by the CLM account holder (or third party) via T2
 - **A.2:** from RTGS DCA through pacs.009 by the RTGS account holder (or third party) via T2
 - **A.3:** from RTGS DCA through pacs.008 by the RTGS account holder (or third party) via T2

Today: Liquidity provision on the day before (TARGET2 opens at 7:00)

In future: Liquidity can and should be provisioned same-day (T2 opens at 02:30)

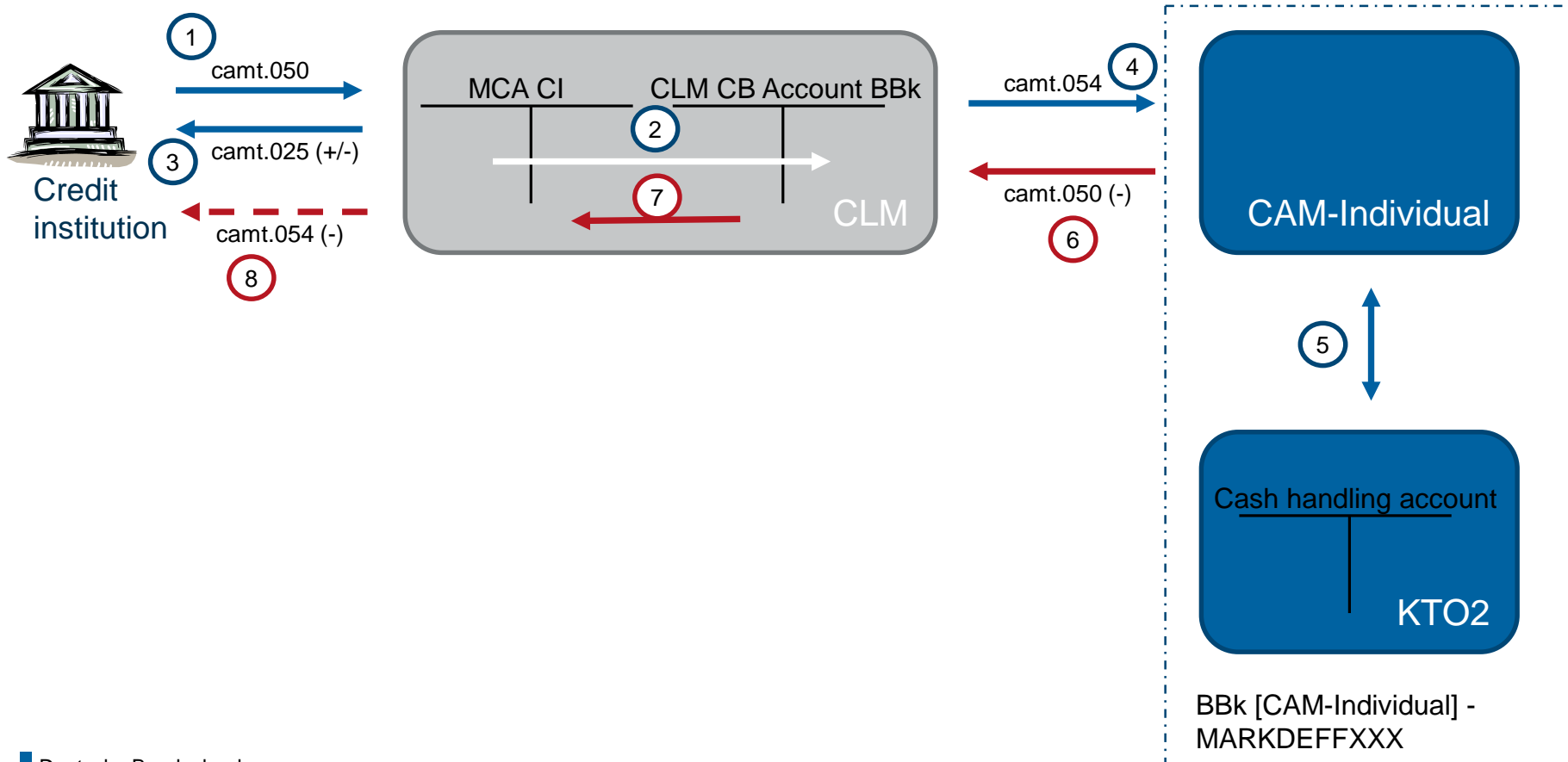


TARGET2/T2S consolidation

Provide liquidity on the cash handling account



Variant A.1: from CLM MCA through camt.050 via T2

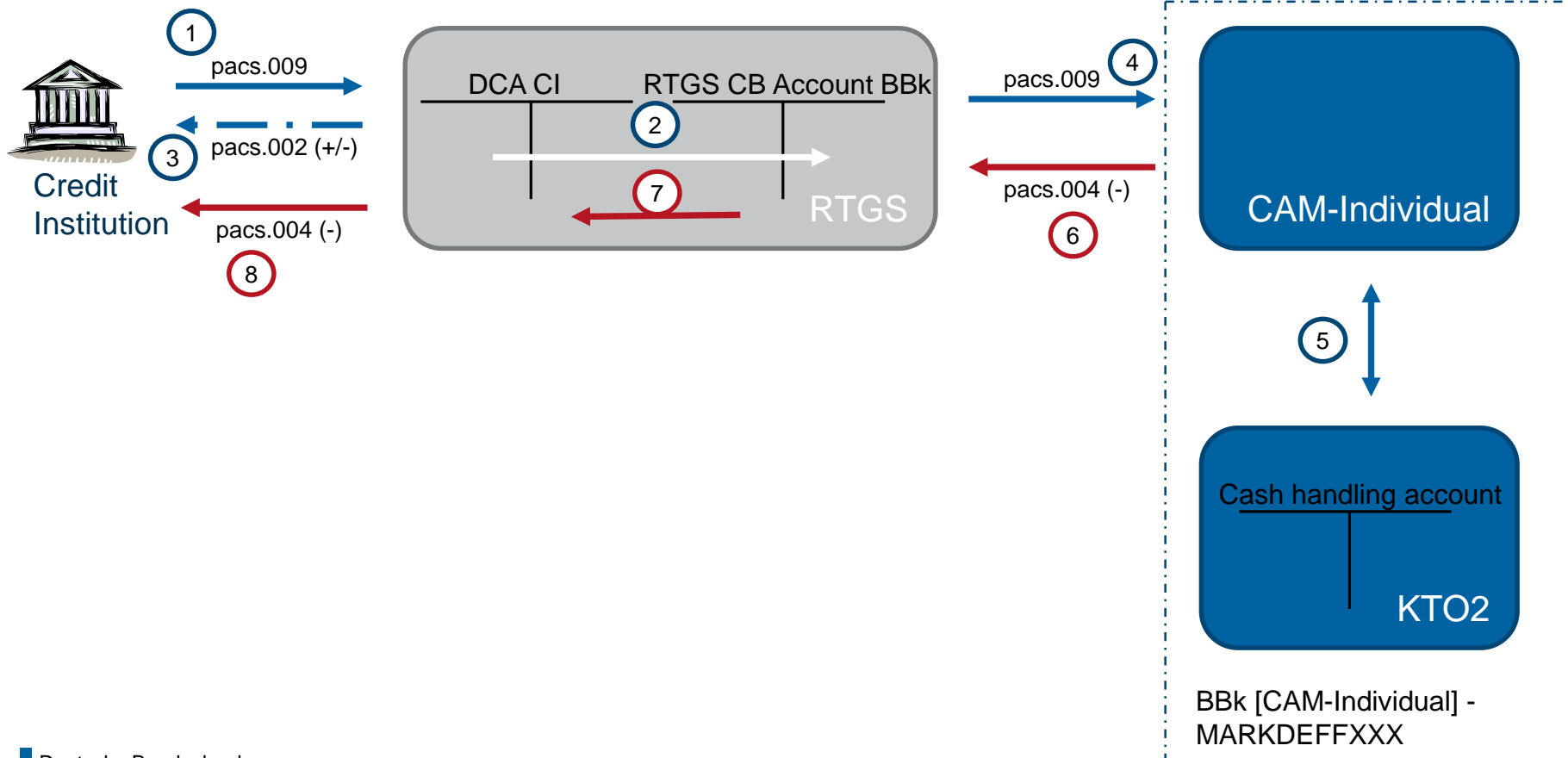


TARGET2/T2S consolidation

Provide liquidity on the cash handling account



Variant A.2: from RTGS DCA through pacs.009 via T2

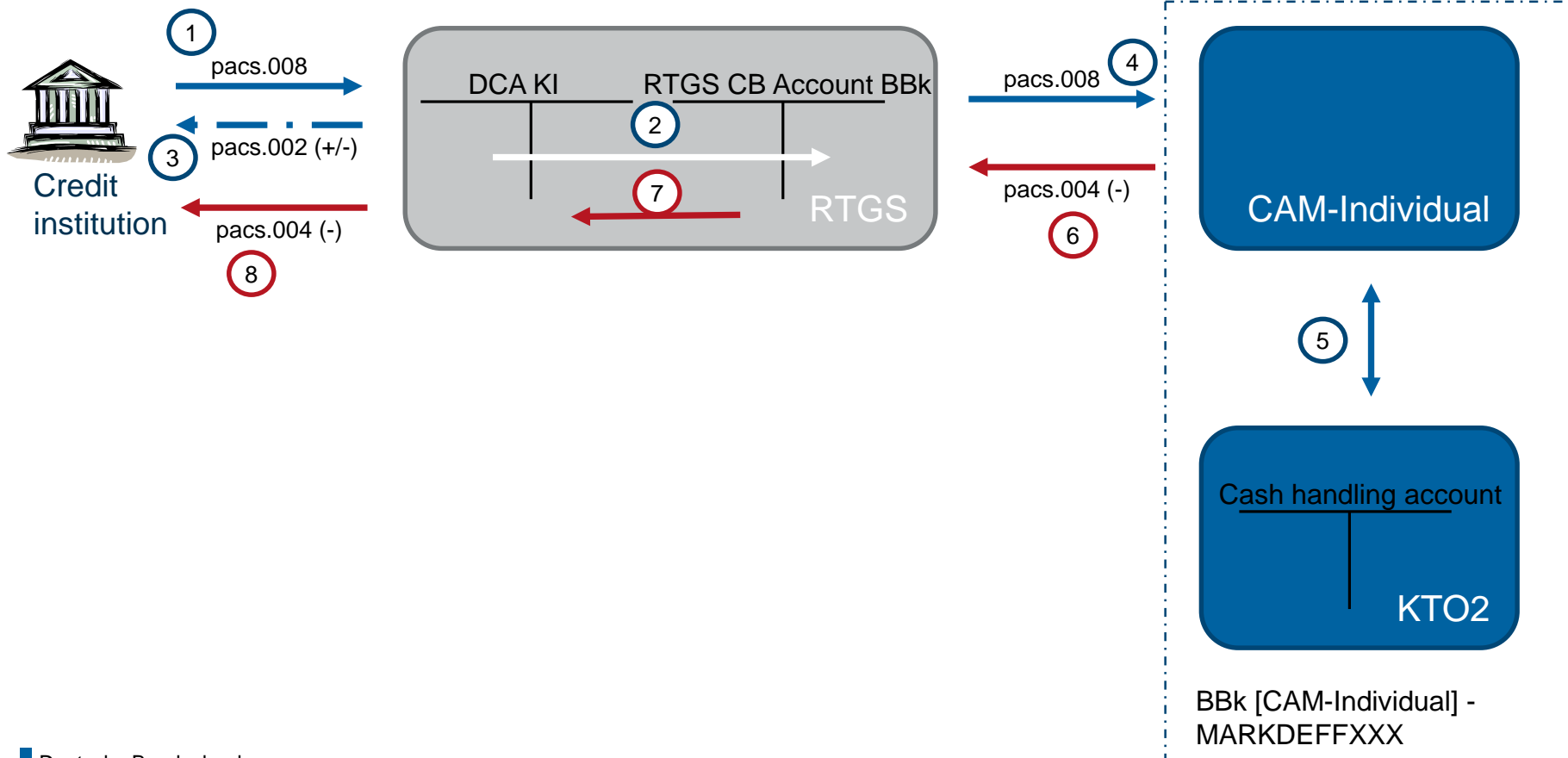


TARGET2/T2S consolidation

Provide liquidity on the cash handling account



Variant A.3: from RTGS DCA through pacs.008 via T2



TARGET2/T2S consolidation

Transfer of positive balances from the cash handling account



- **B - Transfer of positive balances from the cash handling account**

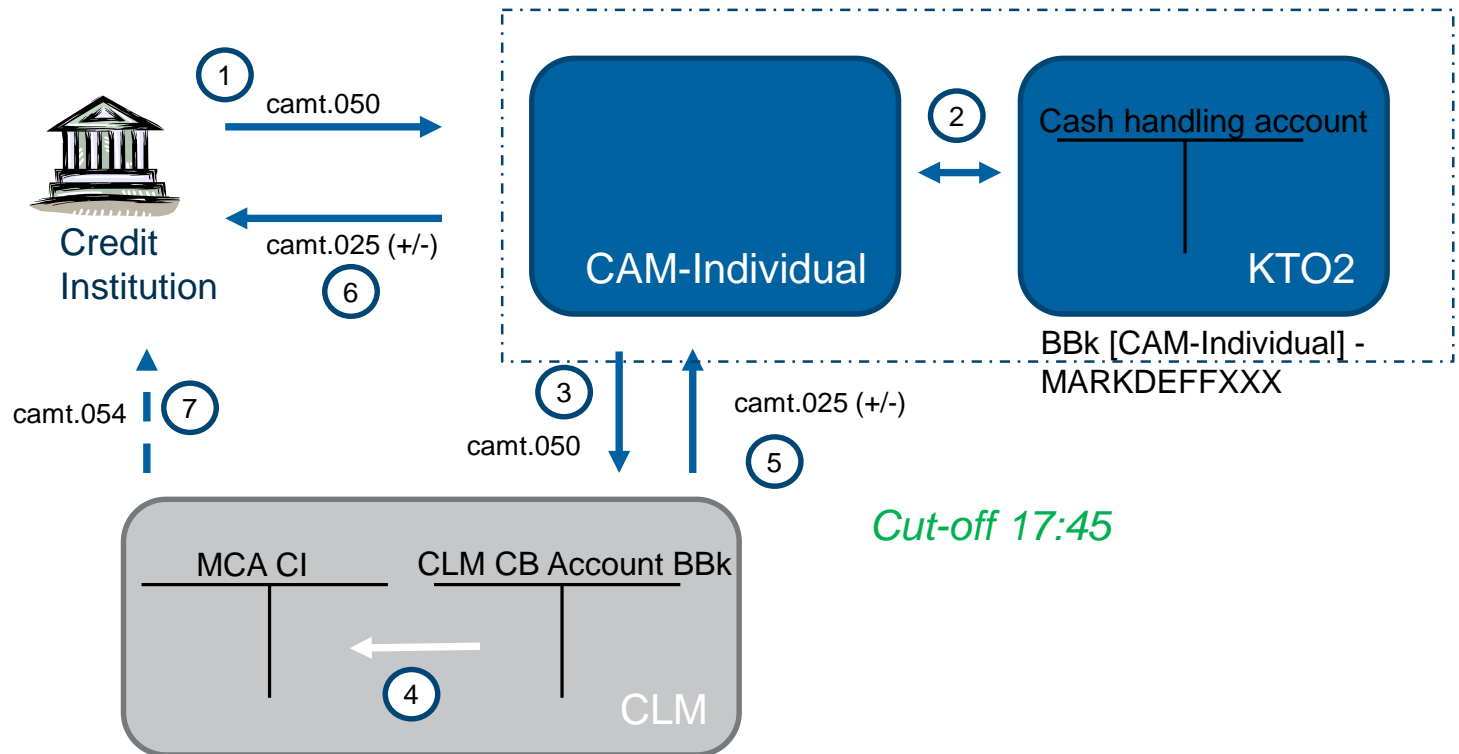
- **B.1:** to an CLM MCA through camt.050 by the account holder (or third party) via BBk [CAM-Individual]
- **B.2:** to an RTGS DCA through pacs.009 by the account holder (or third party) via BBk [CAM-Individual]
- **B.3:** to an RTGS DCA through pacs.008 by the account holder (or third party) via BBk [CAM-Individual]

TARGET2/T2S consolidation

Transfer of positive balances from the cash handling account



Variant B.1: to an CLM MCA through camt.050 via BBk [CAM-Individual]

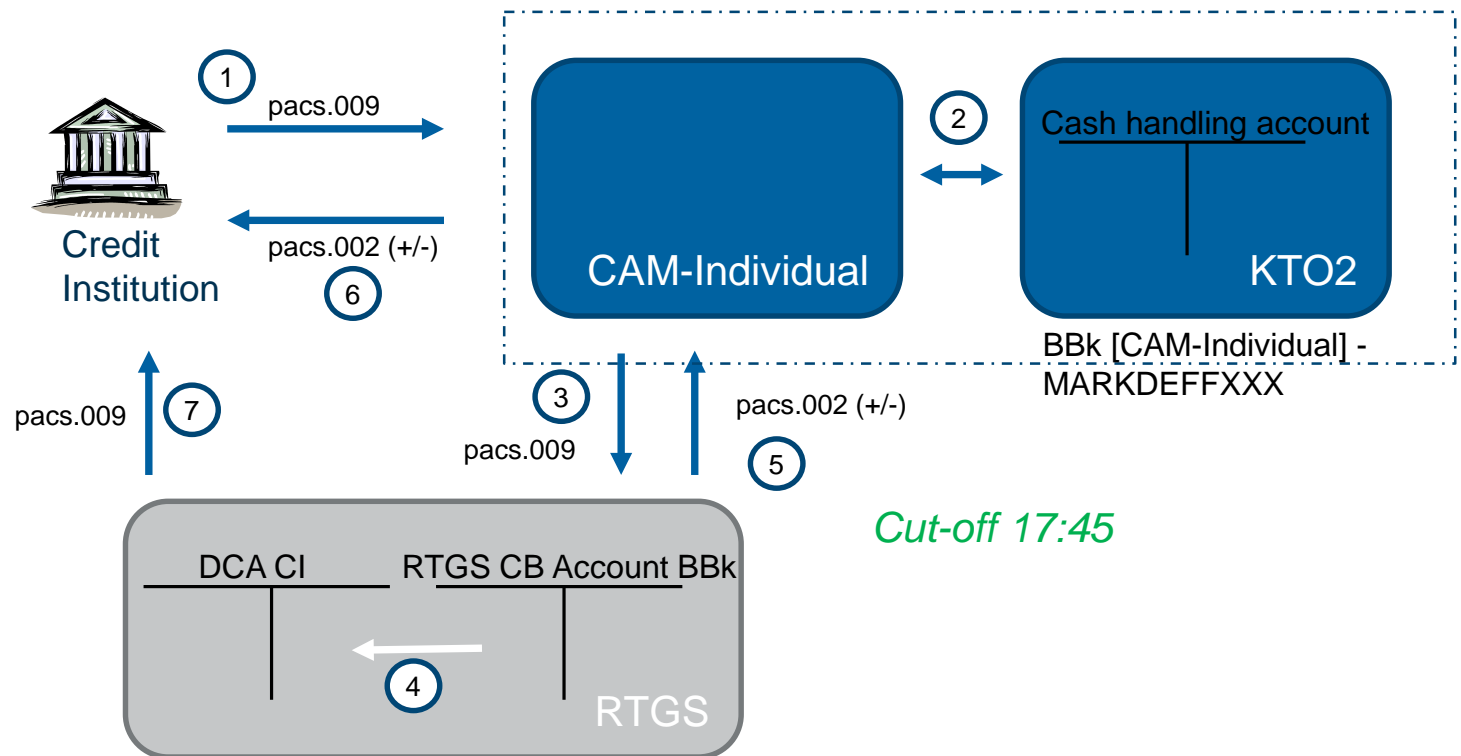


TARGET2/T2S consolidation

Transfer of positive balances from the cash handling account



Variant B.2: to an RTGS DCA through pacs.009 via BBk [CAM-Individual]

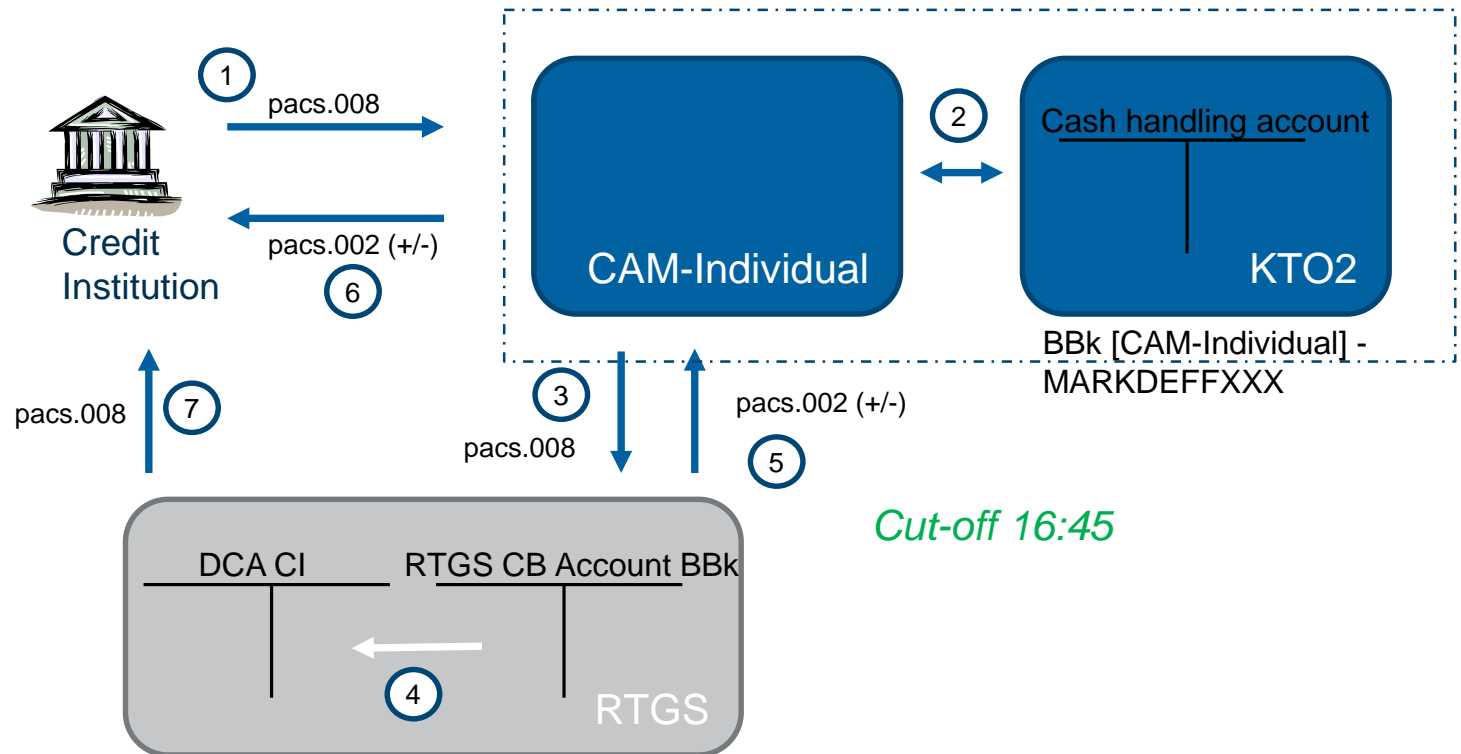


TARGET2/T2S consolidation

Transfer of positive balances from the cash handling account



Variant B.3: to an RTGS DCA through pacs.008 via BBk [CAM-Individual]



TARGET2/T2S consolidation

Cash lodgements on T2 accounts



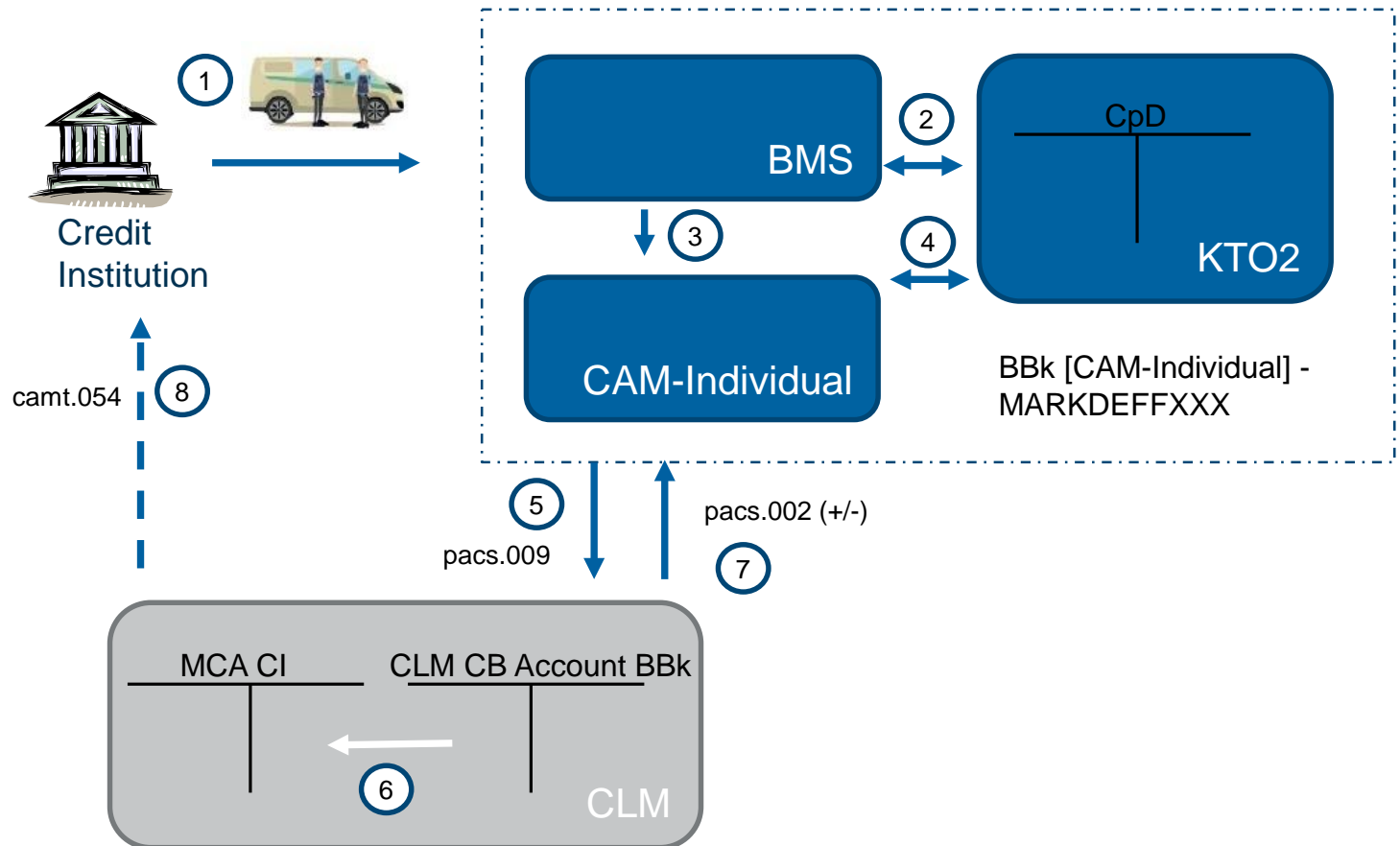
- **C – Cash lodgements**

- C.1: on an CLM MCA (through pacs.009 by BBk); provision of a camt.054 (optional)
 - C.2: on an RTGS DCA (through pacs.009 by BBk); provision of a pacs.009
 - C.3: on an RTGS DCA (through pacs.008 by BBk); provision of a pacs.008
-
- An internal IBAN of the credited account can be provided
-
- Cash lodgements can still be booked on a cash handling account – the positive balance has to be transferred to T2 at the end of the day

TARGET2/T2S consolidation

Cash lodgements on T2 accounts

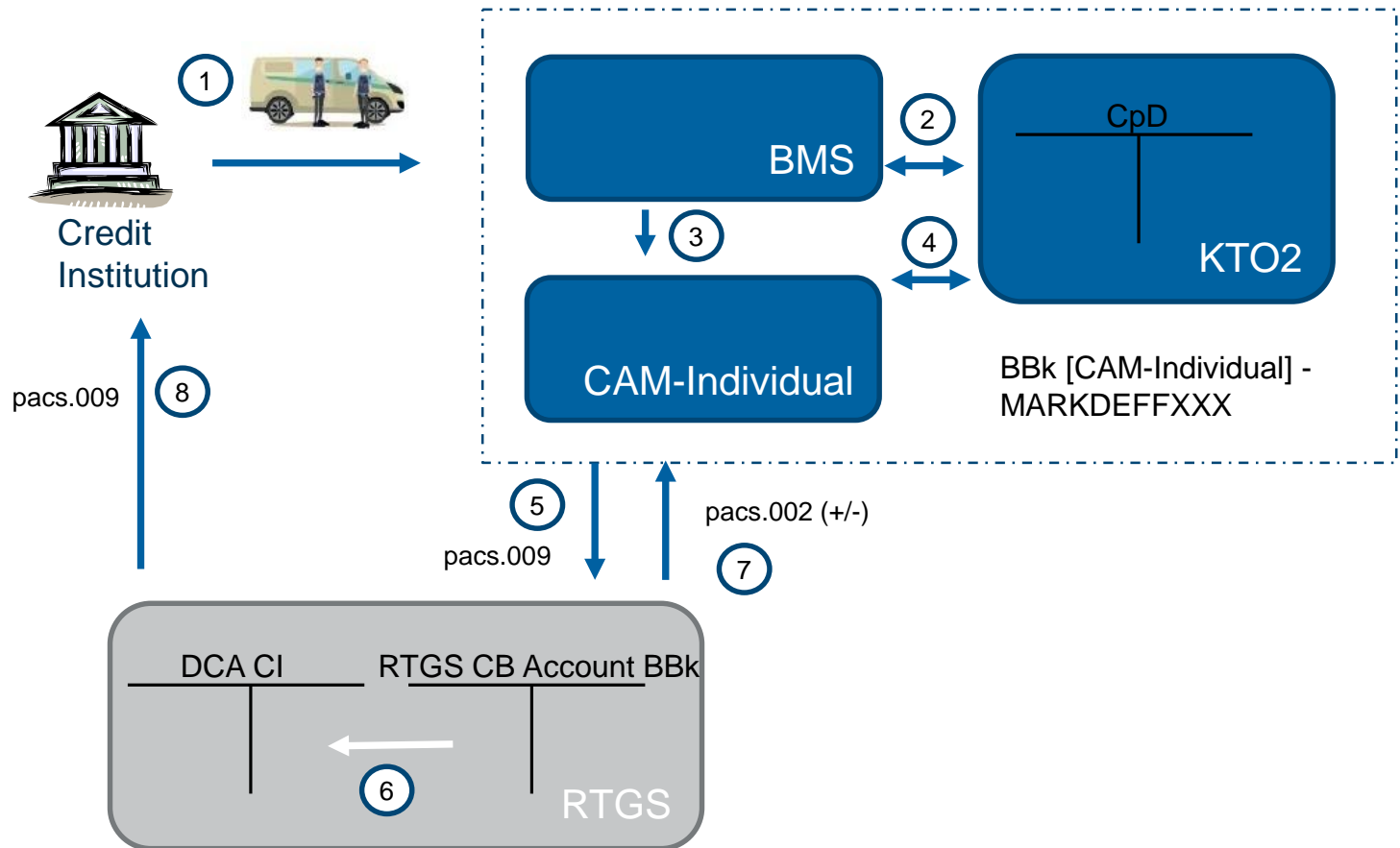
Variant C.1: on an CLM MCA through pacs.009, provision of an optional camt.054



TARGET2/T2S consolidation

Cash lodgements on T2 accounts

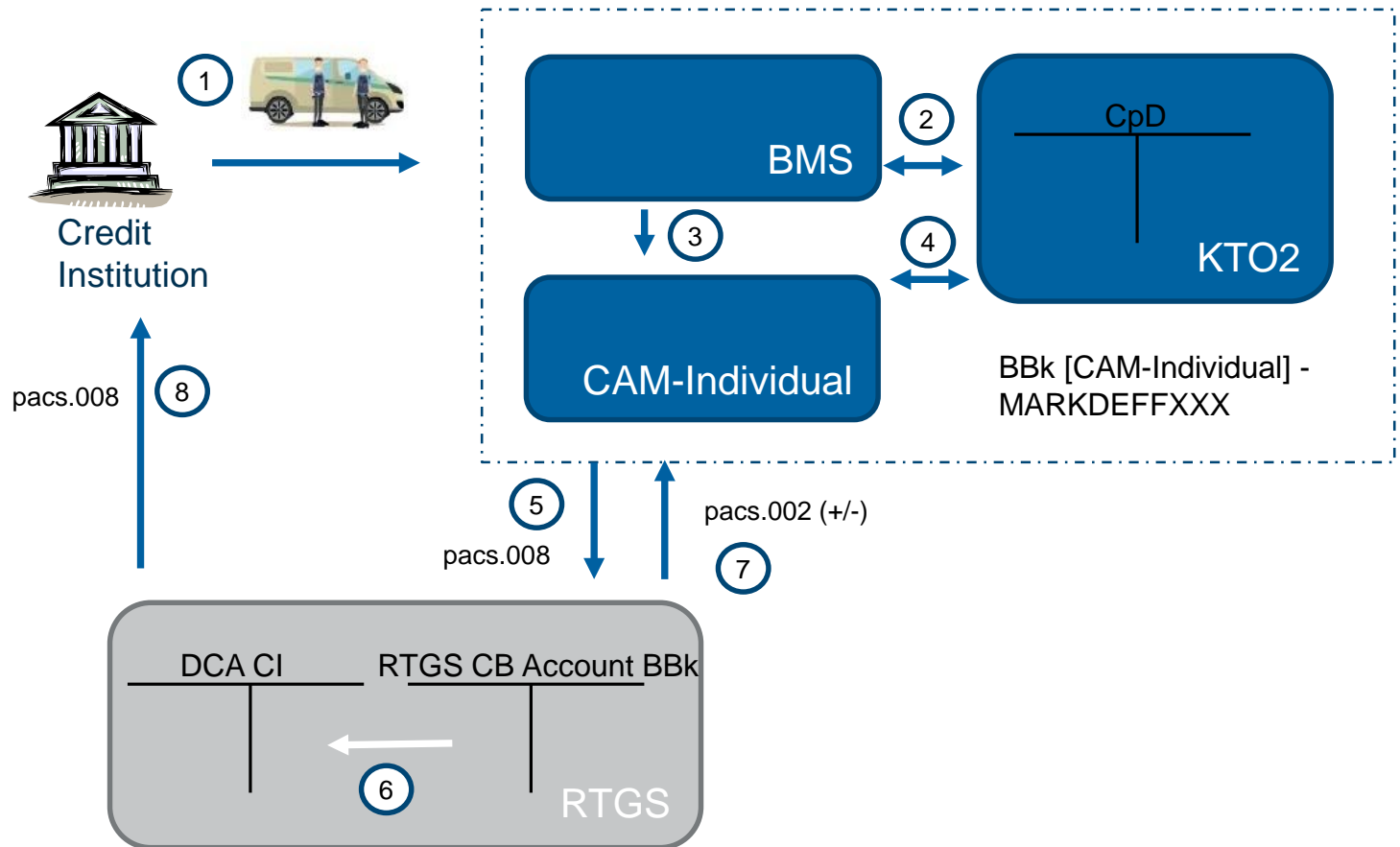
Variant C.2: on an RTGS DCA through pacs.009, provision of a pacs.009



TARGET2/T2S consolidation

Cash lodgements on T2 accounts

Variant C.3: on an RTGS DCA through pacs.008, provision of a pacs.008



- 1 Overview of the TARGET Services
- 2 Communication with the TARGET Services
- 3 General static data setup in CRDM
- 4 Business Day
- 5 Information Management
- 6 Central Liquidity Management (CLM)
- 7 Real-Time Gross Settlement (RTGS)**

7 Real-Time Gross Settlement (RTGS)

Overview

Account structure in RTGS

Participation types in RTGS

Liquidity transfers in RTGS

Payments in RTGS

Liquidity management features in RTGS

Ancillary system settlement

7 Real-Time Gross Settlement (RTGS)

Overview

Account structure in RTGS

Participation types in RTGS

Liquidity transfers in RTGS

Payments in RTGS

Liquidity management features in RTGS

Ancillary system settlement

TARGET2/T2S consolidation

Real-Time Gross Settlement – overview



- RTGS is used for the settlement of **individual payments** and/or **ancillary system settlement**
 - Settlement on the **RTGS DCA** (Dedicated Cash Account)
 - Liquidity management
 - Individual payments
 - Ancillary system settlement (AS procedure A, B, D, E)
 - ⇒ Liquidity provision on the AS technical account
 - Liquidity provision on the cash handling accounts
 - Cash lodgements
- See information on the cash withdrawals and cash lodgements
- Settlement on **sub-accounts** of the RTGS DCA
 - Ancillary system settlement (AS Procedure C)
 - **Participation** in RTGS is **optional** – only necessary if the payment bank settles individual payments or participates in the ancillary system settlement

7 Real-Time Gross Settlement (RTGS)

Overview

Account structure in RTGS

Participation types in RTGS

Liquidity transfers in RTGS

Payments in RTGS

Liquidity management features in RTGS

Ancillary system settlement

Reminder from chapter 3 – General static data setup in CRDM

- In CRDM different accounts will be opened for the settlement in the TARGET Services

CLM

Main Cash Accounts

CLM CB Accounts

Overnight Deposit Accounts

Marginal Lending Accounts

CLM Dedicated Transit Accounts

CB ECB Accounts

ECB Mirror Accounts

RTGS

RTGS Dedicated Cash Accounts

RTGS Sub-Accounts

RTGS CB Accounts

RTGS Dedicated Transit Account

AS Guarantee Funds Accounts

AS Technical Accounts

• RTGS Dedicated Cash Account (RTGS DCA)

- Settlement of **individual payments** and **ancillary system transfers**
- One RTGS DCA can be used **for one or more ancillary systems**
- Only **positive balances** are possible – liquidity resulting from a credit line has to be transferred from the MCA
- **Identification** through **BIC11** (unique in RTGS per currency) and **account number** (unique across all services/modules)
- Only **payment banks and AS** (with derogation) can hold RTGS DCAs (party service type „RTGS account holder“)
- Holding of **more than one RTGS DCA** possible – definition of a **default RTGS DCA**
- If a party holds at least one MCA and at least one RTGS DCA, a **1:1-Link** has to be defined (pre-condition for automated liquidity transfers)
- For **rule-based liquidity transfers** regarding floor/ceiling **different MCAs can be linked**.
- A payment bank, that holds an RTGS DCA, has to hold an **MCA** with the same central bank.

RTGS
RTGS Dedicated Cash Accounts
RTGS Sub-Accounts
RTGS CB Accounts
RTGS Dedicated Transit Account
AS Guarantee Funds Accounts
AS Technical Accounts

TARGET2/T2S consolidation

Accounts in RTGS



- **RTGS sub-account**

- **Sub-account** linked with exactly one RTGS DCA for AS settlement (**AS Procedure C**)
- Only **positive balances** possible
- **Payment banks and central banks** can hold RTGS sub-accounts (party service type „RTGS account holder“ or „RTGS CB account holder“)
- Identification through **account number** (unique across all services/modules) – no BIC

- **AS guarantee funds account**

- Account for the AS settlement, in case one/several settlement banks fail (only AS procedure A and B)
- Only **positive balances** possible
- **Payment banks, AS and central banks** can hold AS guarantee funds accounts (party service type „RTGS account holder“ or „RTGS CB account holder“)

RTGS
RTGS Dedicated Cash Accounts
RTGS Sub-Accounts
RTGS CB Accounts
RTGS Dedicated Transit Account
AS Guarantee Funds Accounts
AS Technical Accounts

TARGET2/T2S consolidation

Accounts in RTGS



- **AS technical account**

- **Technical account** for collecting the credits and debits resulting from AS settlement
- **Payment orders** from/to RTGS DCAs are possible
- AS and central banks can hold AS technical accounts (Party service type „ancillary system“ or „RTGS CB account holder“)

RTGS
RTGS Dedicated Cash Accounts
RTGS Sub-Accounts
RTGS CB Accounts
RTGS Dedicated Transit Account
AS Guarantee Funds Accounts
AS Technical Accounts

7 Real-Time Gross Settlement (RTGS)

Overview

Account structure in RTGS

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Liquidity transfers in RTGS

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Liquidity management features in RTGS

Ancillary system settlement

TARGET2/T2S consolidation

Participation types in RTGS



- Different **participation types** in RTGS (see following slides)
- A direct participant (equal to the RTGS account holder) can offer his RTGS DCA for the settlement of payments by third parties.
- In CRDM the attribute „**authorised account user**“ will be used for the definition of the different participation types

Participation types

- **Direct participation**

- Direct access to RTGS – account holder of at least one RTGS DCA
- A published BIC11 is necessary (published in the SWIFT BIC directory)
- Provision of indirect access for third parties possible
- Responsible for the liquidity management and monitoring in RTGS as well as for all transactions settled on the RTGS DCA

- **Multi-addressee access**

- Branches of the RTGS account holder or institutions of the same group
- Direct technical connection to RTGS – no own RTGS DCA
- Settlement on the RTGS DCA of the direct participant
- A published BIC11 is necessary (published in the SWIFT BIC directory)
- Submitting/receiving payments directly to/from RTGS (without involvement of the direct participant)

- **Addressable BIC**

- Settlement on the account of a direct participant – not account holder
- Correspondent or branch of a correspondent of the RTGS DCA holder
- Indirectly addressable
- Published BIC11 necessary (published in the SWIFT BIC directory)
- Submitting/receiving payment via the direct participant
- Located within/outside the European Union or the EEA

- **Indirect participation**

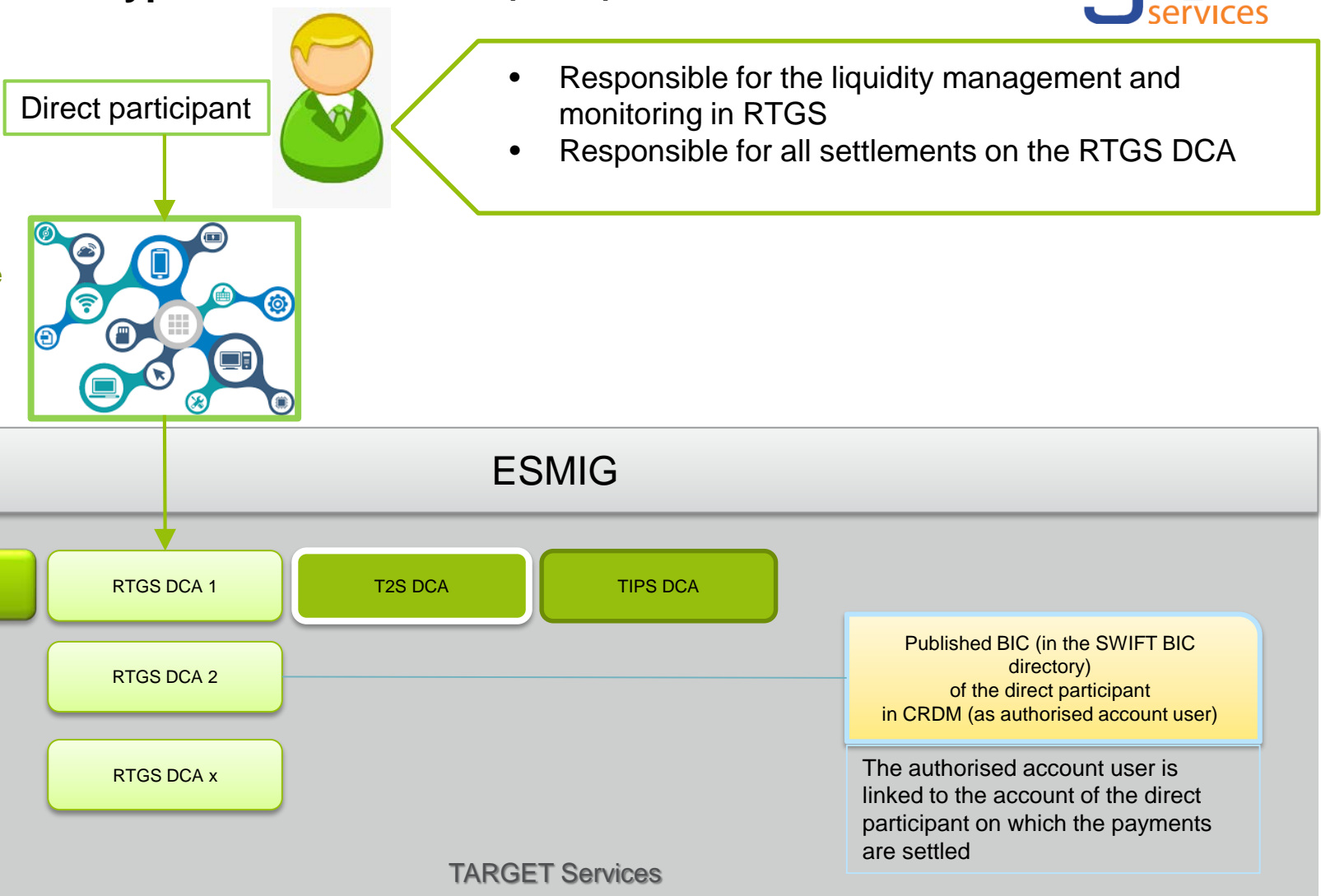
Information: The Eurosystem decided to discontinue the „indirect participation“ and only use the „addressable BIC“ functionality. The „indirect participation“, which is identical with the „addressable BIC“ will still technically be possible (and will therefore still be part of the UDFS) but will not be offered by the Eurosystem anymore (not part of the Guideline).

Publication in the RTGS Directory

- The publication in the RTGS directory will be administrated on account level

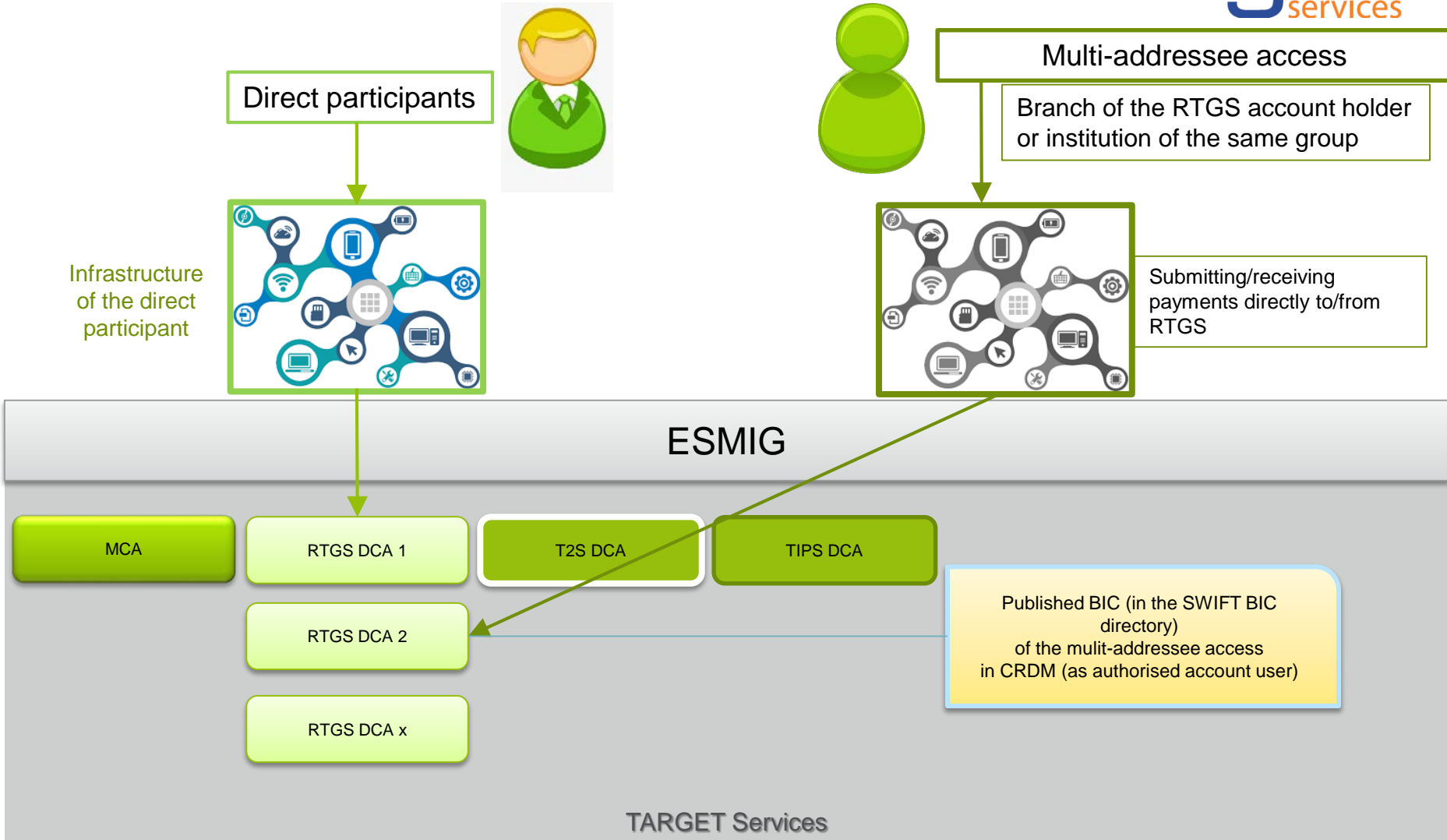
TARGET2/T2S consolidation

Participation types in RTGS – direct participant



TARGET2/T2S consolidation

Participation types in RTGS – Multi-Addressee Access



TARGET2/T2S consolidation

Participation types in RTGS – Addressable BIC



Direct participant



Submitting/receiving payments via the direct participant



Addressable BIC

correspondent or branch of the RTGS account holder; located within/outside the Union or EEA

Infrastructure of the direct participant



ESMIG

MCA

RTGS DCA 1

T2S DCA

TIPS DCA

RTGS DCA 2

RTGS DCA x

Published BIC (in the SWIFT BIC directory) of the Addressable BIC in CRDM (as authorised account user)

TARGET Services

TARGET2/T2S consolidation

Participation types in RTGS

Comparison

Feature	Direct participant	Indirect Participant/addressable BIC	Multi-addressee access
Sending and receiving cash transfer orders	Directly	Via Direct Participant	Directly
Own cash account in RTGS	Yes	No	No
Liquidity provisioning	On its cash account in RTGS	By Direct Participant	By Direct Participant
Liquidity control	By itself	By Direct Participant	By Direct Participant
Addressability	Directly	By Direct Participant	Directly
Publication in RTGS Directory	As Direct Participant	As Indirect Participant/addressable BIC	As multi-addressee access

Table 7 - Comparison of participation types according to the RTGS Directory

- **„Address book“** for addressing payments in RTGS
 - Compilation of all addressable participants (BIC11) on the basis of the authorised account user (via the authorised account user the participation type is defined)
 - Accounts marked as unpublished are not included in the directory

- Provision as **flat file in a xml envelope**
 - No fundamental changes in the structure of the RTGS directory compared with the TARGET2 directory

- **Daily creation**
 - complete version
 - or
 - delta version (only changes compared to the previous version)

- Automatic provision (A2A) or manual query in CRDM (U2A)
 - Report configuration necessary

TARGET2/T2S consolidation RTGS directory



- Structure of the RTGS directory

O/M ³⁵	FIELD No.	FIELD NAME	FORMAT	DESCRIPTION	O/M ³⁵	FIELD No.	FIELD NAME	FORMAT	DESCRIPTION
M	1	BIC	CHAR(11)	BIC that uniquely identifies a RTGS Participant. This BIC is for information purpose only and cannot be used to address payments.	M	10	Valid To	DATE(YYYYMMDD)	Date up to which the entry is valid. Value "99991231" is used whenever the ending of validity has not been specified.
M	2	Addressee BIC	CHAR(11)	BIC to be used in the message business header to address payments. It is equal to the Account BIC except for Multi-Addressee BICs.	M	11	Participation Type	CHAR(2)	Exhaustive list of possible values for the entry: 01 – Direct 02 – Indirect 03 – Multi addressee – Credit Institutions 04 – Multi addressee – Branch of Direct Participant 05 – Addressable BIC - Correspondent 06 – Addressable BIC – Branch of Direct Participant 07 – Addressable BIC – Branch of Indirect Participant 08 – Addressable BIC – Branch of correspondent
M	3	Account BIC	CHAR(11)	BIC identifying the RTGS DCA or CB Account.					
M	4	Institution Name	CHAR(105)	It is the name stored in the CRDM BIC Directory together with the Addressee BIC.					
O	5	City Heading	CHAR(35)	It is the name of the city where the RTGS Participant is established.					
O	6	National Sorting Code	CHAR(15)	It is the National Sorting Code of the RTGS Participant.					
O	7	Main BIC Flag	CHAR(1)	Specifies if the BIC could be used to address the payments if the sender has no other information where to send to.					
M	8	Type of Change	CHAR(1)	Exhaustive list of possible values: A – Added M – Modified D – Deleted U – Unchanged					
M	9	Valid From	DATE(YYYYMMDD)	Date from which the entry is valid.					

Table 53

TARGET2/T2S consolidation

RTGS directory

- RTGS directory structure (A, B and C represent different BICs)

BIC	Addressee	Account BIC	Participation Type
A (Participation type «01-direct»)	A (Participation type «01-direct»)	A (Participation type «01-direct»)	01 - Direct
B (Participation type «Multi-addressee»)	B (Participation type «Multi-addressee»)	A (Participation type «01-direct»)	03/04 – Multi-addressee
C (Participation type «Addressable BIC»)	A (Participation type «01-direct»)	A (Participation type «01-direct»)	05/06/07/08 – Addressable BIC

↳ BIC of the authorised account users

7 Real-Time Gross Settlement (RTGS)

Overview

Account structure in RTGS

Participation types in RTGS

Liquidity transfers in RTGS

Payments in RTGS

Liquidity management features in RTGS

Ancillary system settlement

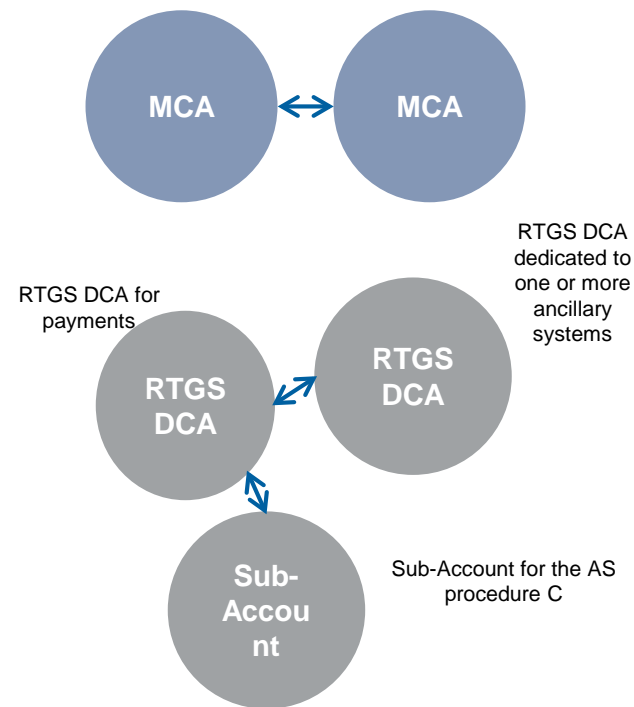
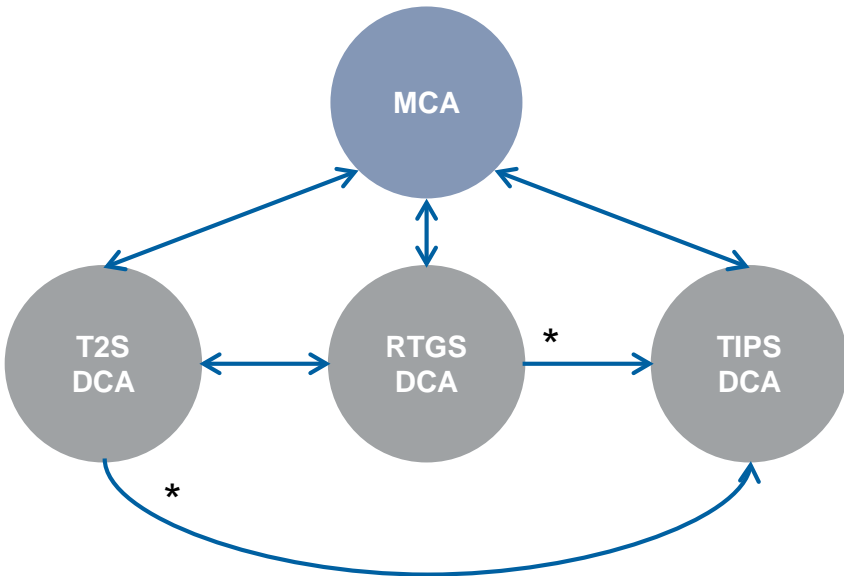
TARGET2/T2S consolidation

Liquidity transfers – overview



Inter-service liquidity transfer

Intra-service liquidity transfer



Liquidity transfers **between** CLM and RTGS, T2S or TIPS

Liquidity transfers **within** a settlement services

* A TIPS CR has to be approved to introduce this functionality.

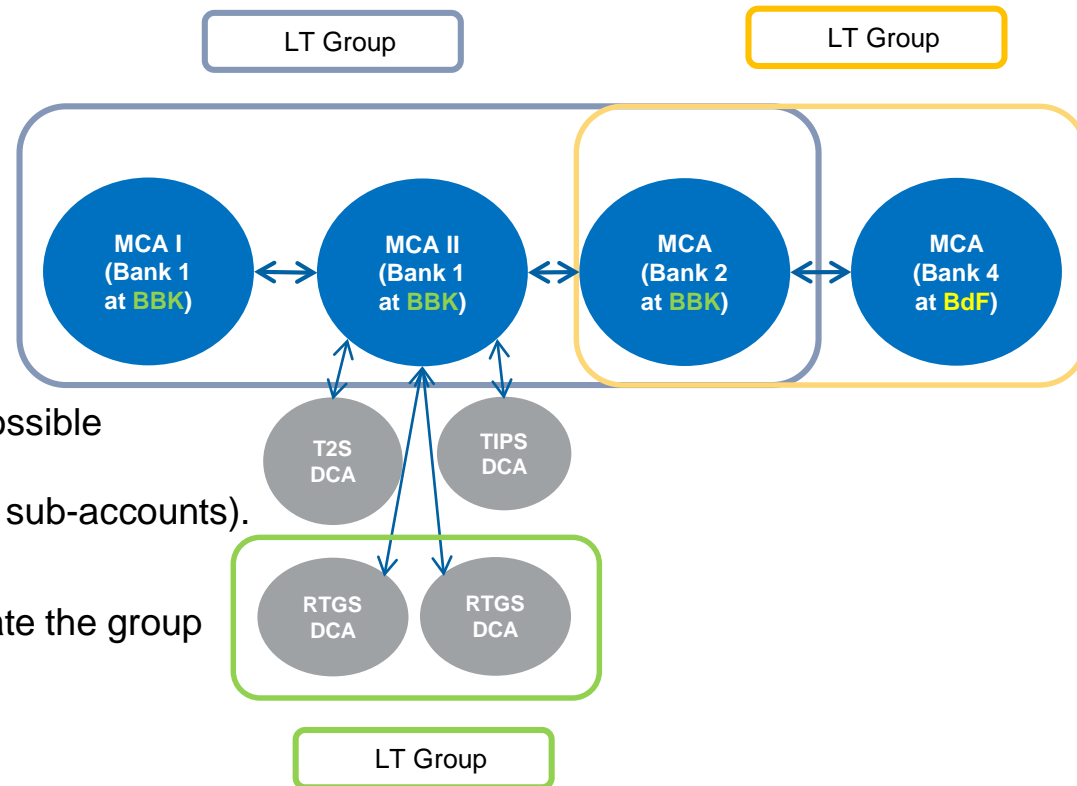
TARGET2/T2S consolidation

Liquidity transfers – Liquidity Transfer Group

in accordance with CLM

Pre-condition for intra-service liquidity transfers is the creation of a so-called **liquidity transfer group**.

- Optional grouping of accounts within a settlement service to a **liquidity transfer group (LTG)**. An LTG can be created for CLM as well as for RTGS.
- An MCA / RTGS DCA can be part of **one or more** LTGs.
- Within an LTG MCAs / RTGS DCAs of **different parties** can be grouped (also cross-border).
- **Intra-service** liquidity transfers are only possible between **accounts part of the same LTG** (except for transfers with a central bank or sub-accounts).
- The responsible central bank(s) administrate the group based on the participant's order.



Use cases and messages

Initiator	Use cases	Message
RTGS account holder or authorised RTGS actor	<ul style="list-style-type: none"> • Between two RTGS DCAs (intra, liquidity transfer group) • RTGS DCA → CB account in RTGS or another service (CLM, T2S) • RTGS DCA ↔ Sub-Account (intra, AS procedure C) • MCA, Overnight Deposit Account, T2S DCA, TIPS DCA ↔ Sub-account (inter, AS procedure C) • RTGS DCA ↔ Overnight Deposit Account (inter) • RTGS DCA ↔ T2S DCA (inter) • RTGS DCA ↔ TIPS DCA (inter) • RTGS DCA ↔ MCA (inter) 	LiquidityCreditTransfer (camt.050)
RTGS account holder or authorised RTGS actor	<ul style="list-style-type: none"> • RTGS DCA → AS technical account (intra, AS procedure D) 	FinancialInstitutionCreditTransfer (pacs.009)
Ancillary system	<ul style="list-style-type: none"> • RTGS DCA → Sub-account (intra, AS procedure C) • RTGS DCA → AS technical account (intra, AS procedure D) 	ASTransferInitiation (pain.998)

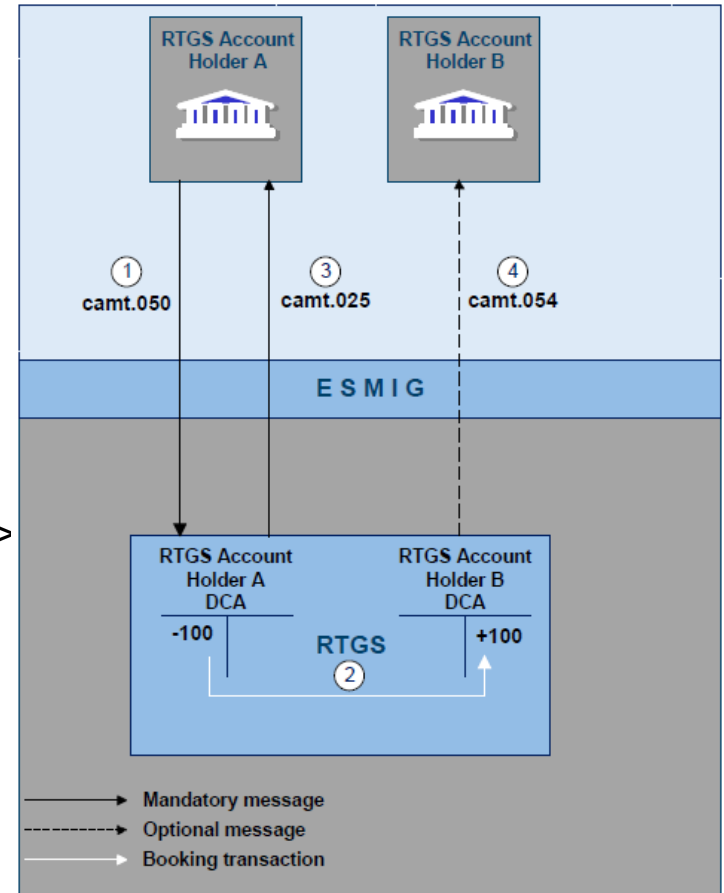
TARGET2/T2S consolidation

Liquidity transfers in RTGS

Example of the message flow

Use case: DCA -> DCA (initiated by the RTGS account holder)

- 1 RTGS account holder A sends a LiquidityCreditTransfer (camt.050) via ESMIG to RTGS.
- 2 Processing in RTGS
- 3 RTGS sends a notification (receipt (camt.025)) via ESMIG to the RTGS account holder A.
- 4 RTGS sends a BankToCustomerDebitCreditNotification > (camt.054) via ESMIG to RTGS account holder B (optional).



TARGET2/T2S consolidation

Liquidity transfers – types

Types	RTGS
Immediate liquidity transfer	Initiated by the account holder or another authorised RTGS actor (A2A or U2A)
Rule-based liquidity transfer	Pre-defined transfer due to <ul style="list-style-type: none">• breach of a floor or ceiling• for queued payments with the priority urgent and high, as well as AS transfers• for queued payments with the priority urgent and AS transfers
Standing order for liquidity transfer	recurring transfer at a defined business day event

Automated liquidity transfers will not be created in RTGS. Only automated liquidity transfers created by CLM will be placed on top of all queues!

TARGET2/T2S consolidation

Liquidity transfers – types

Liquidity transfers can either

- **push** liquidity to another cash account or
- **pull** liquidity from another cash account.

Liquidity transfer type	Description
Immediate liquidity transfer order	Immediate transfer of liquidity initiated by the RTGS Account Holder or another authorised RTGS Actor in A2A or U2A.
Rule-based liquidity transfer order	Transfers of liquidity initiated by RTGS due to a: <ul style="list-style-type: none"> floor and/or ceiling rule (configuration in CRDM); pending urgent payment order, AS transfer order or high priority payment order rule (configuration in CRDM).
Standing order liquidity transfer order	Recurring transfer of liquidity initiated by RTGS every business day at configured certain business day events (for standing order liquidity transfer orders not related to ancillary systems) or at the start of procedure (for standing order liquidity transfer orders related to ancillary systems) (configuration in CRDM).

RTGS

TARGET2/T2S consolidation

Liquidity transfers in RTGS – standing orders

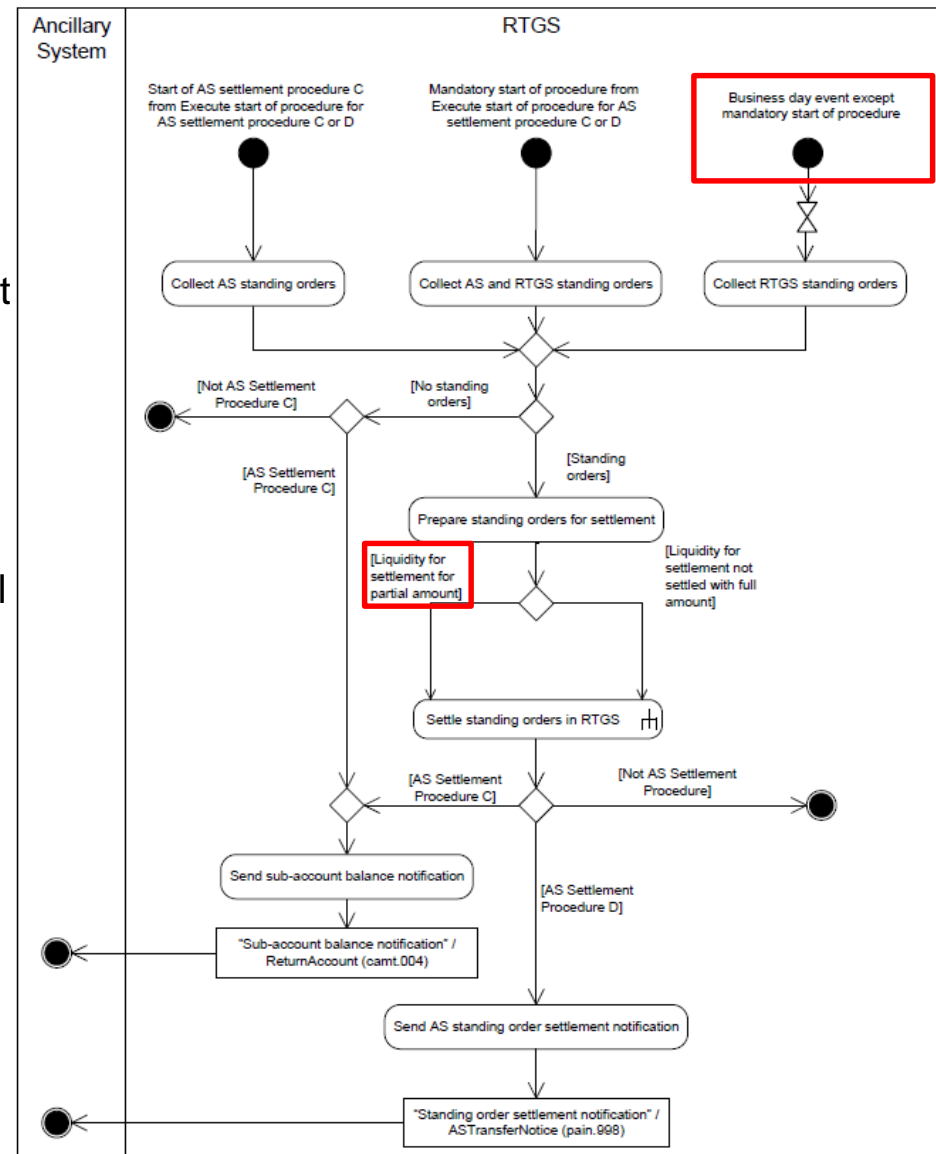
- **Recurring order** to transfer liquidity
 - once each business day,
 - at a certain event during the business day,
 - a pre-defined amount,
 - limited or unlimited.
- The **administration** of the standing order is done by the **account holder** in **CRDM**.
- Modifications of standing order are valid as of the next business day.
- **Use cases** in RTGS:
 - Intra-service:
 - RTGS DCA → DCA (within a liquidity transfer group)
 - RTGS DCA → Sub-Account at the start of the mandatory procedure (AS procedure C)
 - RTGS DCA → Sub-Account at the start of the optional procedure (AS procedure C)
 - RTGS DCA → AS Technical Account at the start of the mandatory procedure (AS procedure D)
 - Inter-service:
 - RTGS DCA → MCA
 - RTGS DCA → DCA of another service (T2S, TIPS)

TARGET2/T2S consolidation

Liquidity transfers – standing orders

- In case of **insufficient liquidity on the RTGS DCA**

- the order will be executed partially (0.00 € possible).
- standing orders defined for the same event will be executed „pro rata“. This also applies to standing orders by AS settlement banks with the beginning of the mandatory procedure.
- standing orders for the optional procedure of AS settlement will be rejected (no partial execution).
- standing orders will never be queued (no further settlement attempt).



Across services

- **FIFO principle** for the processing of liquidity transfers
- **MCA transactions** have a **higher priority** than transactions on the RTGS DCA.
- **Intra-service liquidity transfer** only if
 - all RTGS DCAs are part of the same liquidity transfer group or
 - it is a liquidity transfer between an RTGS DCA and the linked Sub-Account or
 - a CB account is involved.
- Liquidity transfer are generally **not queued** instead
 - executed immediately (fully, partially) or
 - rejected.
 - Exception: automated liquidity transfers on the RTGS DCA
- **Rule-based liquidity transfers** (floor/ceiling → see liquidity management) will only be executed if the account holder defined these in CRDM in advance.

Across services

The **sequence** (priority; 1 = hoch ...) of the **tapping of liquidity** in RTGS is **pre-defined**.

Example liquidity transfers

1. Non-reserved amount of the RTGS DCA (liquidity for „normal“ payments)
2. Reserved amount for cash transfers with high priority
3. Reserved amount for cash transfers with urgent priority

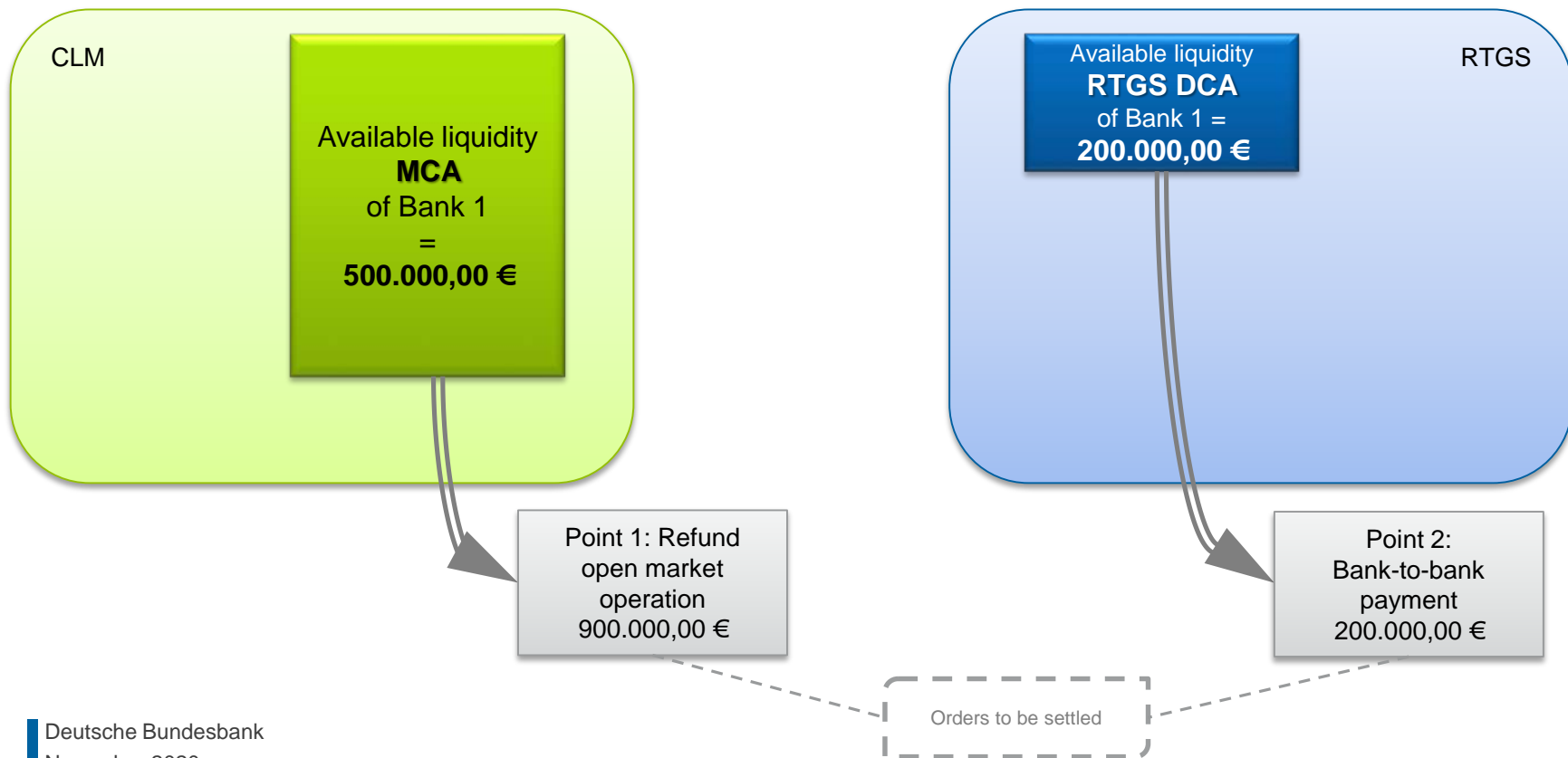
Business case	Tapping of liquidity reservations				
	RTGS DCA			CLM MCA	
	Urgent (U)	High (H)	Available liquidity for normal payments	CBOs	Non-reserved
Liquidity transfer	3	2	1		
U payment/ancillary system transfer	1	3	2		4 ²⁶
H payment		1	2		3 ²⁷
N payment			1		

Speciality – automated liquidity transfer

- In case of insufficient funds on the MCA for the execution of
 - central bank operations (CBO) or
 - seizure of fundsan **automated liquidity transfer pulling liquidity from the RTGS DCA** will be executed.
- The respective order will be **treated with the highest priority and before all other pending transactions** in RTGS.
 - In case of **insufficient funds** on the RTGS DCA, the automated liquidity transfer will be partially settled and the remaining part will be **queued** on top of the queue (possibly several times).
 - Any **incoming liquidity** on the RTGS DCA is **transferred stepwise to the MCA** in CLM until the initial amount of the automated liquidity transfer order is fully executed. **Until then the RTGS DCA will be blocked for settlement.**
- In case of **incoming liquidity** on the MCA,
 - a **new automated liquidity transfer** with the new amount will be sent to RTGS. The previous order will be rejected by RTGS.
 - the **automated liquidity transfer will be deleted**, if the incoming liquidity on the MCA is sufficient for the execution of the pending CBOs or seizure funds.

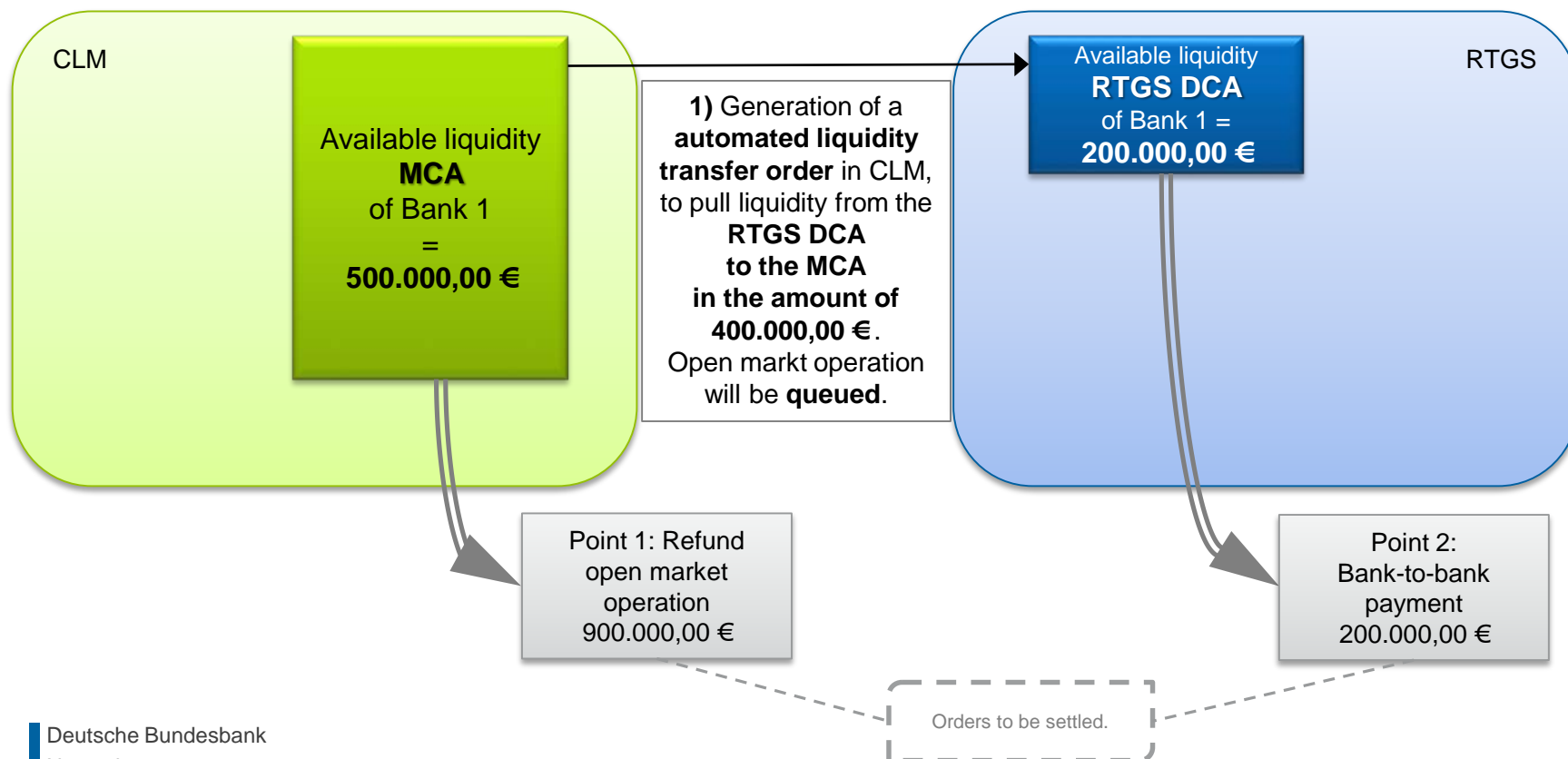
Special case – automated liquidity transfer - example

Initial situation



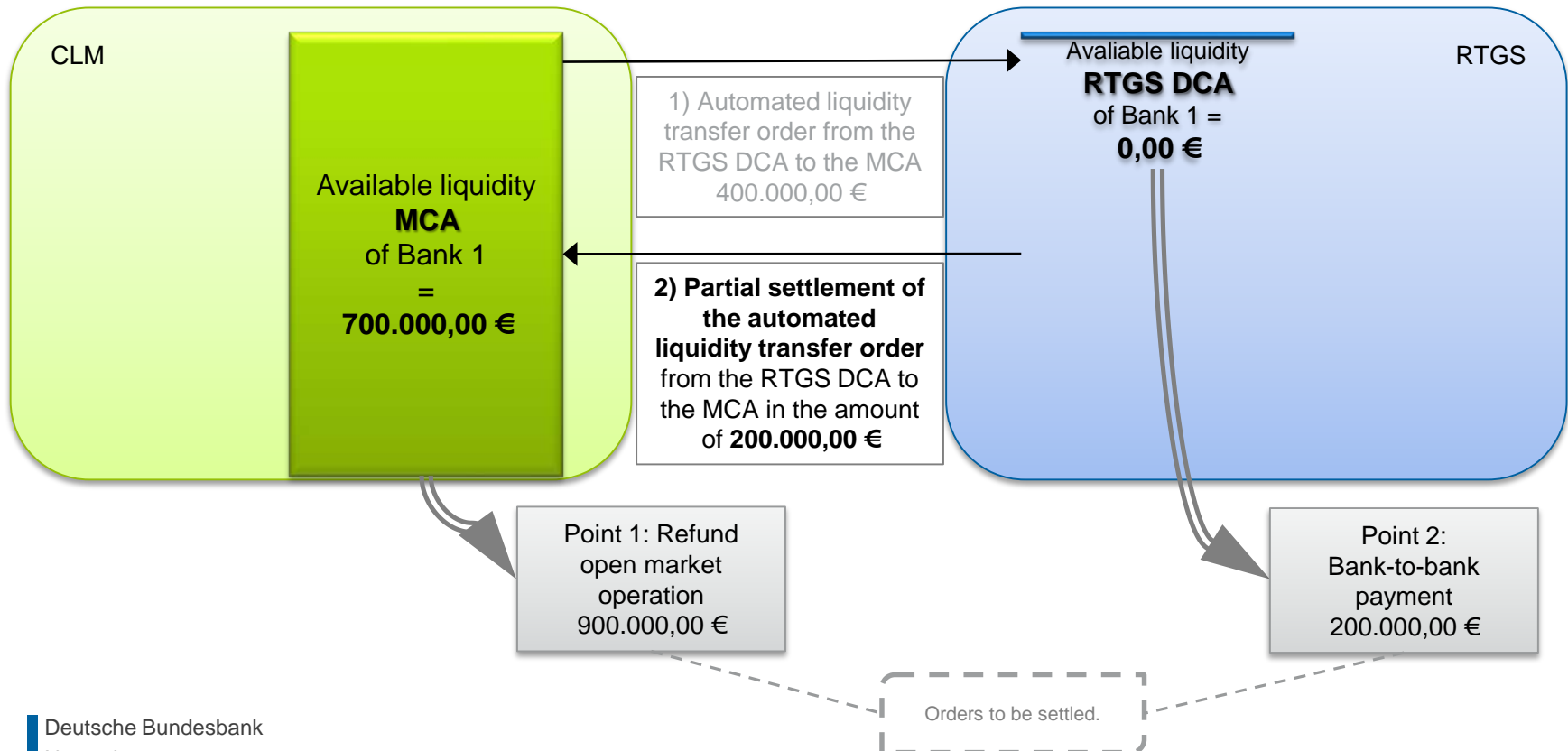
Special case – automated liquidity transfer - example

What happens with the orders to be settled?



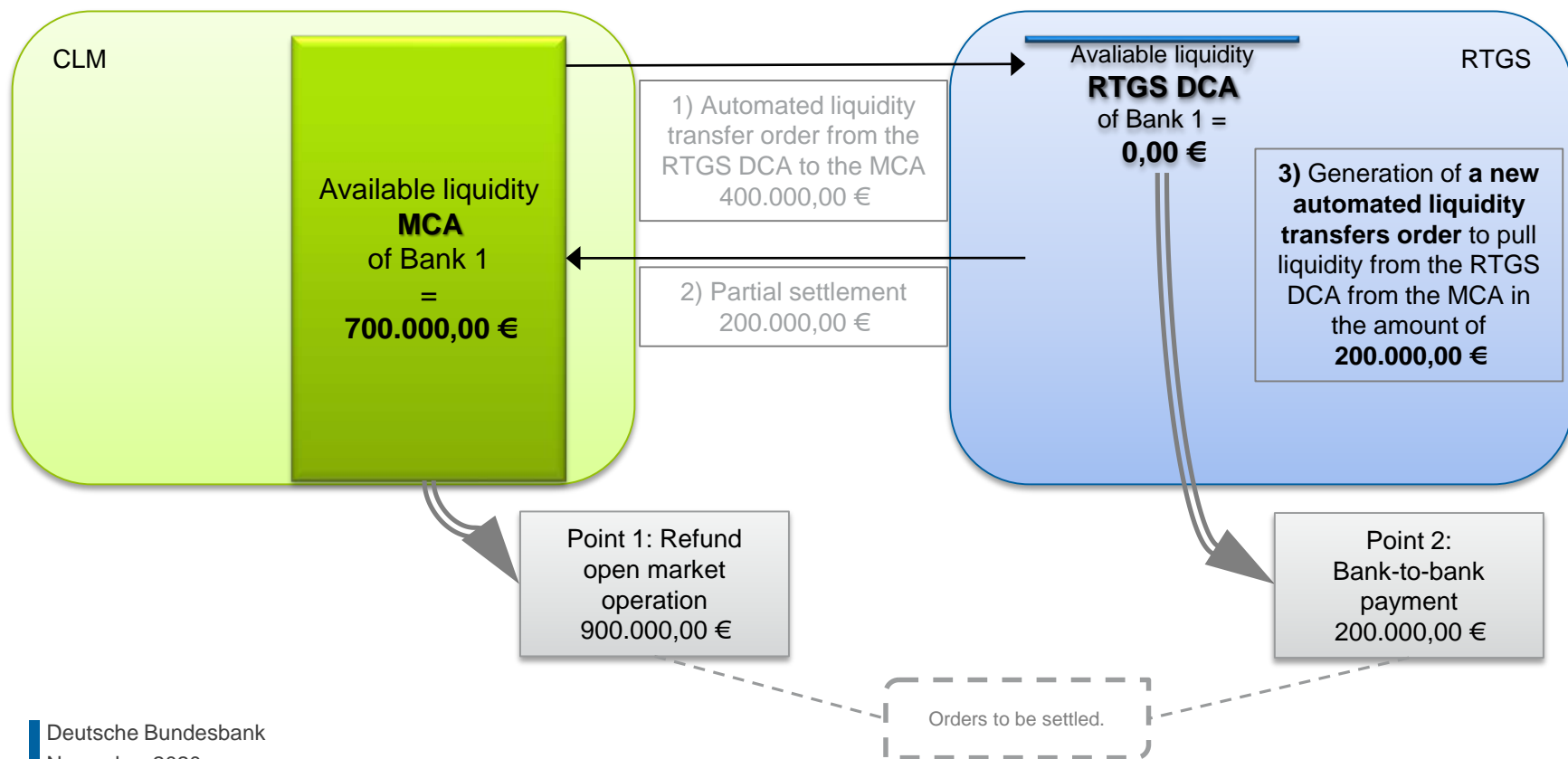
Special case – automated liquidity transfer - example

What happens with the orders to be settled?



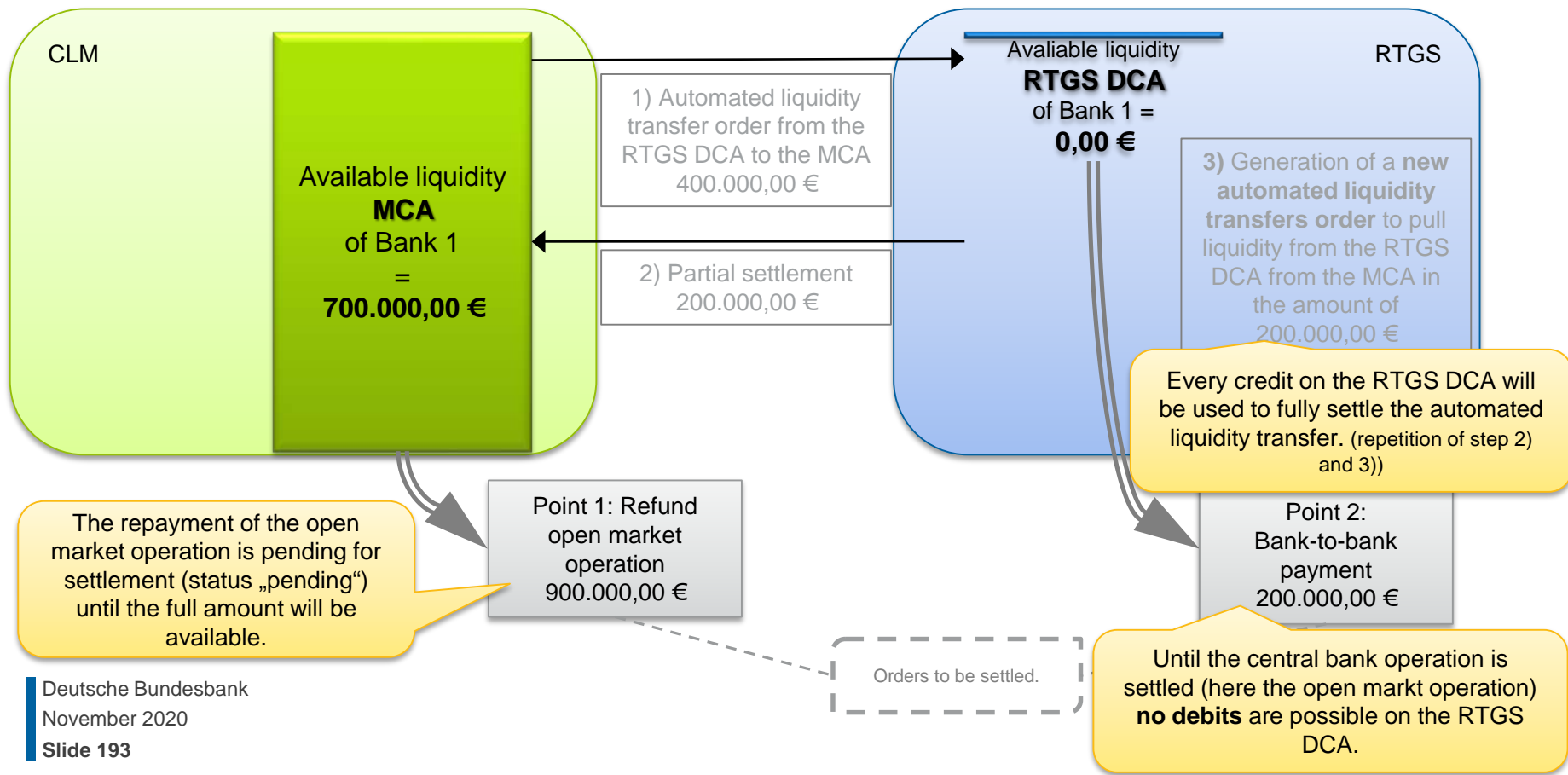
Special case – automated liquidity transfer - example

What happens with the orders to be settled?



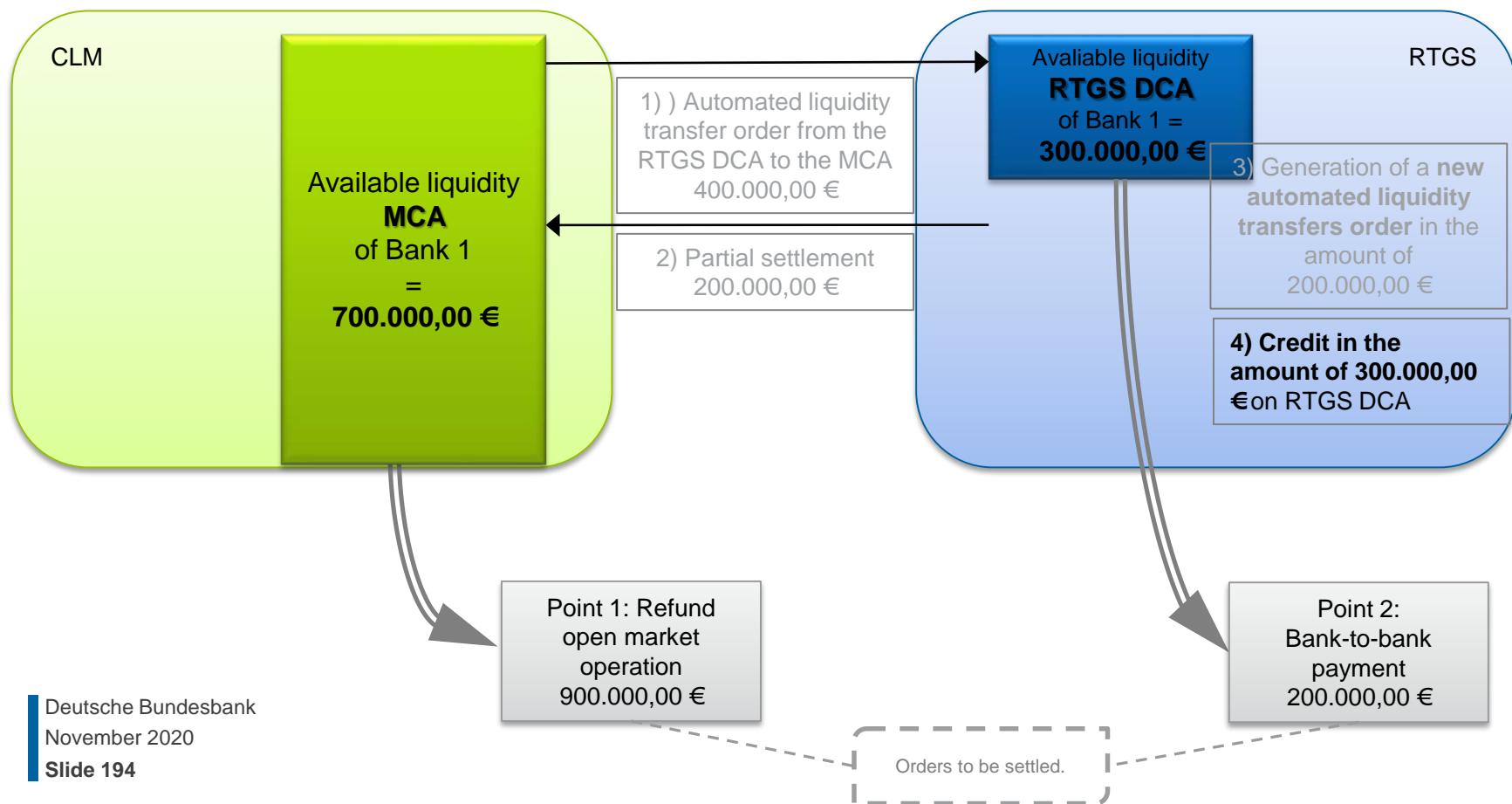
Special case – automated liquidity transfer - example

What happens with the orders to be settled?



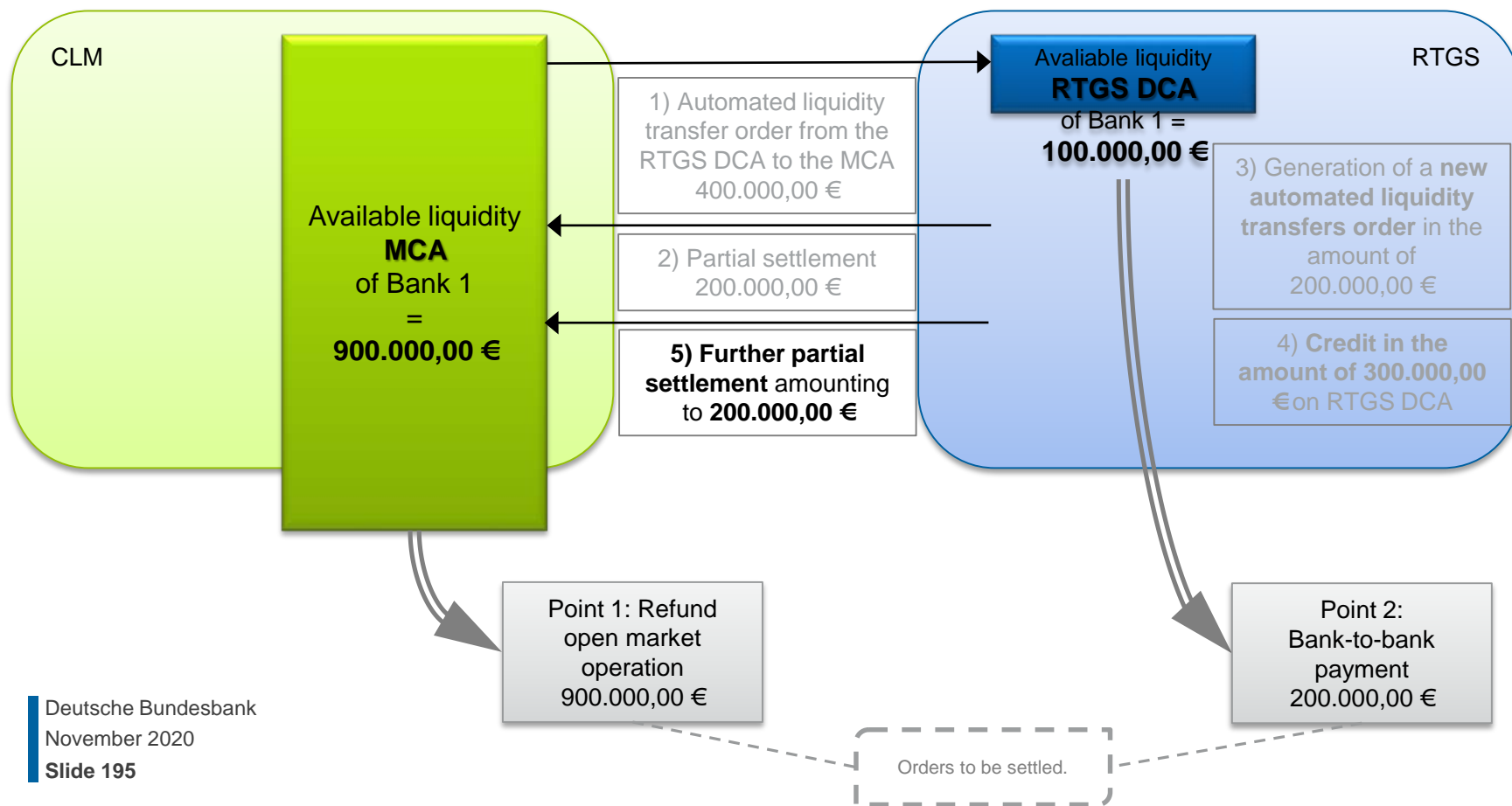
Special case – automated liquidity transfer - example

What happens with the orders to be settled?



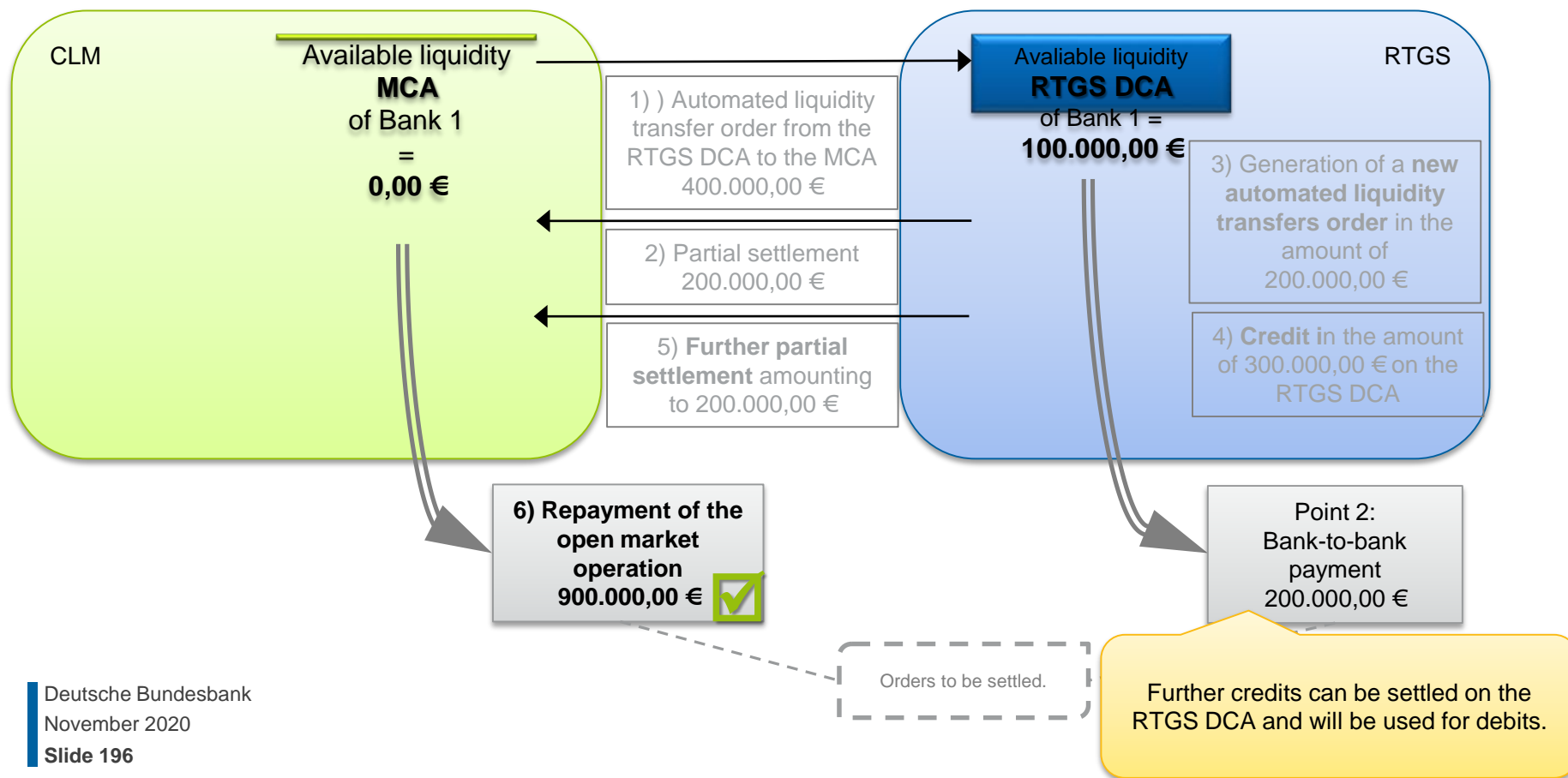
Special case – automated liquidity transfer - example

What happens with the orders to be settled?



Special case – automated liquidity transfer - example

What happens with the orders to be settled?



Specialties in RTGS

Specialties in RTGS:

- **Partial settlement** only for
 - rule-based liquidity transfers, standing orders and
 - liquidity transfers initiated by ancillary systems (AS procedure C and D).
- Execution of **intra-service liquidity transfers** only if
 - all DCAs in RTGS belong to the same liquidity transfer group (in accordance with CLM)
 - a CB account is involved (in accordance with CLM)
 - it is a transfer between an RTGS DCA and a sub-account (AS procedure C) or
 - it is a transfer between an RTGS DCA and an AS technical account (AS procedure D).

7 Real-Time Gross Settlement (RTGS)

Overview

Account structure in RTGS

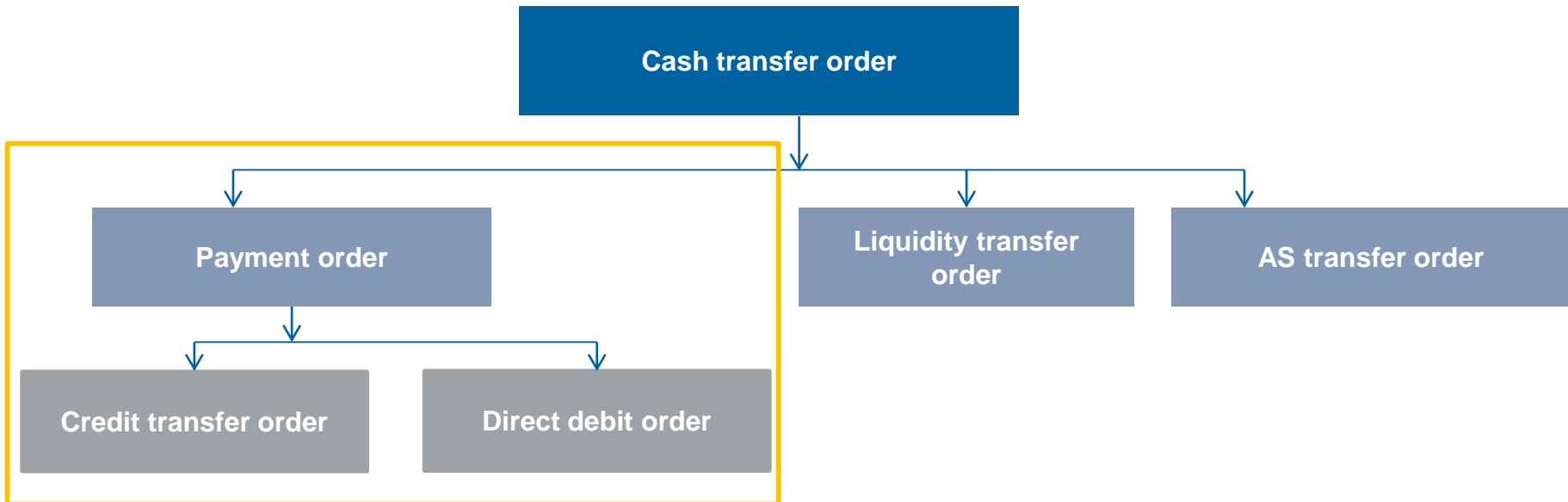
Participation types in RTGS

Liquidity transfers in RTGS

Payments in RTGS

Liquidity management features in RTGS

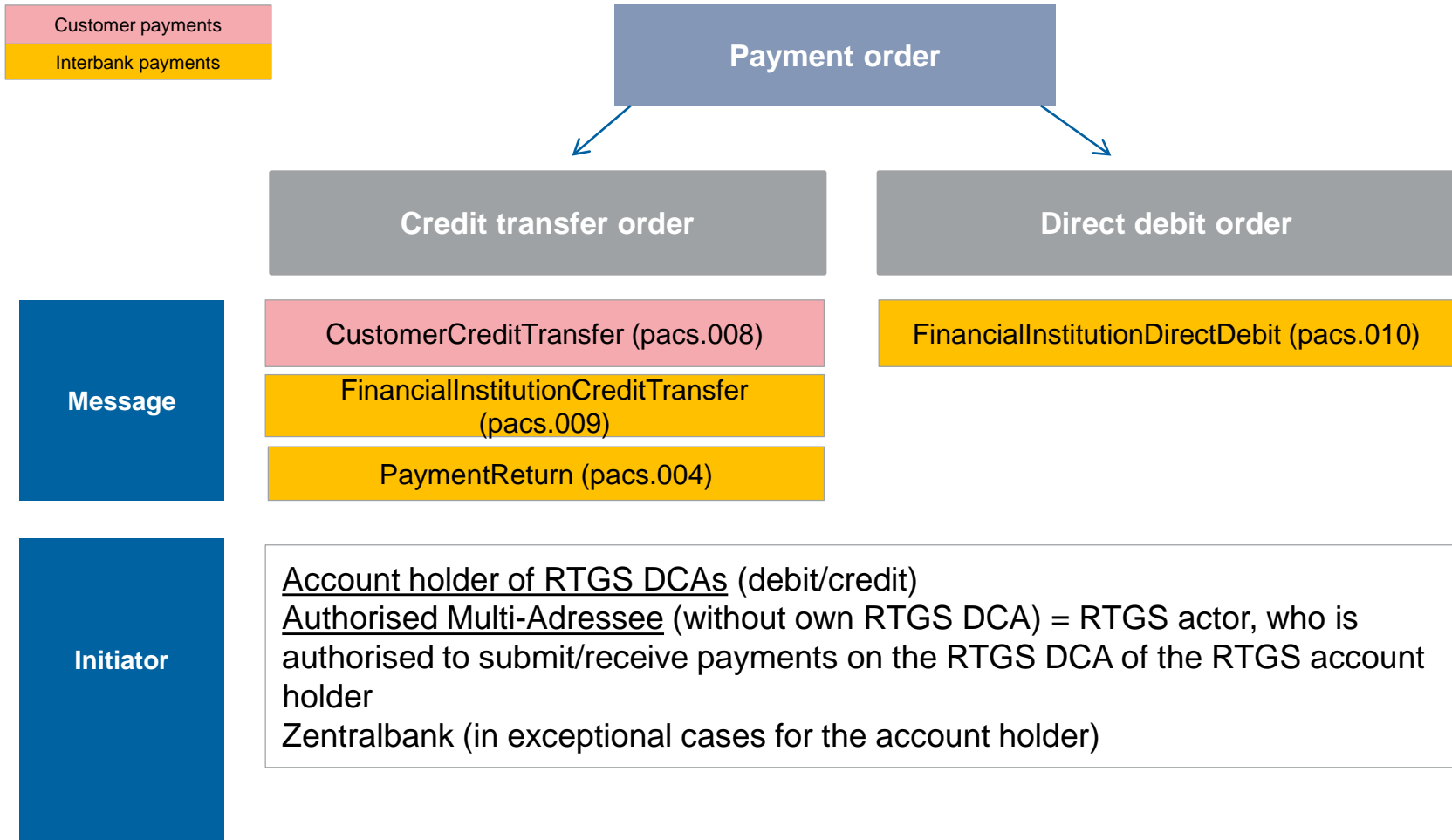
Ancillary system settlement



- Initiation via A2A require the use of ISO 20022 compliant messages. The initiation is also possible via U2A.

TARGET2/T2S consolidation

Payments in RTGS - overview



TARGET2/T2S consolidation

Payments in RTGS - overview

CustomerCreditTransfer (pacs.008)

- Payment between **non-financial institutions**
- Initiation by the RTGS account holder (also CB) or by the multi-addressee
- The involved RTGS DCAs have to denominate in the same currency.

FinancialInstitutionCreditTransfer
(pacs.009)

- **Individual payments** between **financial institutions**
- Initiation by the RTGS account holder, a multi-addressee, CB as direct participant
- The involved RTGS DCAs have to denominate in the same currency.

PaymentReturn (pacs.004)

- **Return** of an **already settled payment** between **financial institutions (pacs.008/pacs.009)**

FinancialInstitutionDirectDebit
(pacs.010)

- **Direct debit** between **financial institutions**.
- Initiation by an RTGS account holder (incl. CB) possible.
- Direct debit mandate of the debtor must have been entered in CRDM

TARGET2/T2S consolidation

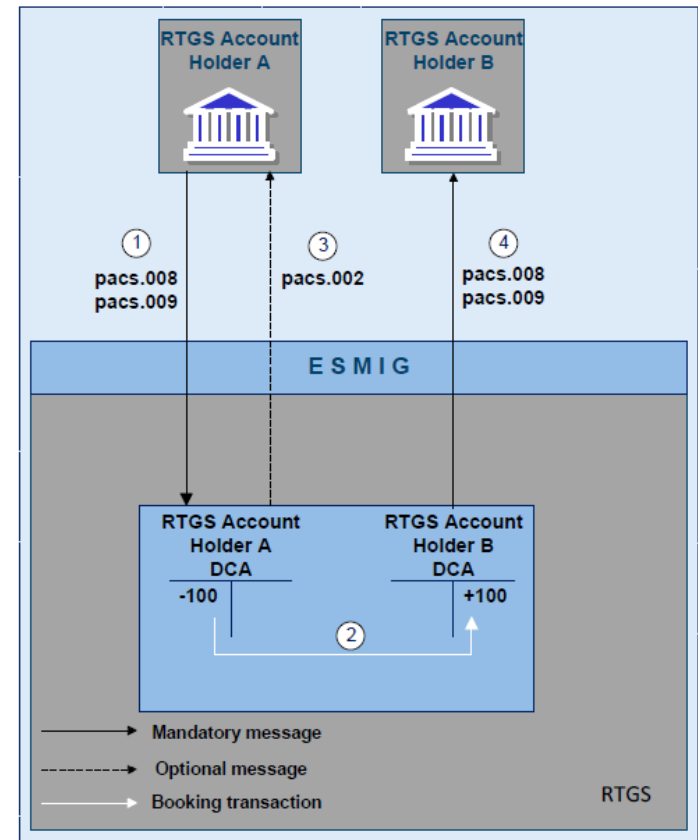
Payments in RTGS - settlement

Example for the settlement of a payment

Use case: transfer from RTGS account holder -> RTGS account holder

CustomerCreditTransfer (pacs.008)
FinancialInstitutionCreditTransfer (pacs.009)

- 1 RTGS account holder (A) sends a FinancialInstitutionCreditTransfer (pacs.009) or CustomerCreditTransfer (pacs.008) via ESMIG to RTGS.
- 2 RTGS settles the payment order on the RTGS DCAs of RTGS Account Holders A and B – after successful validation.
- 3 RTGS sends a settlement notification for the payment (PaymentStatusReport (pacs.002)) to (A) via ESMIG (optional).
- 4 RTGS creates and forwards the payment (FinancialInstitutionCreditTransfer (pacs.009) or CustomerCreditTransfer (pacs.008)) via ESMIG to RTGS account holder (B).



TARGET2/T2S consolidation

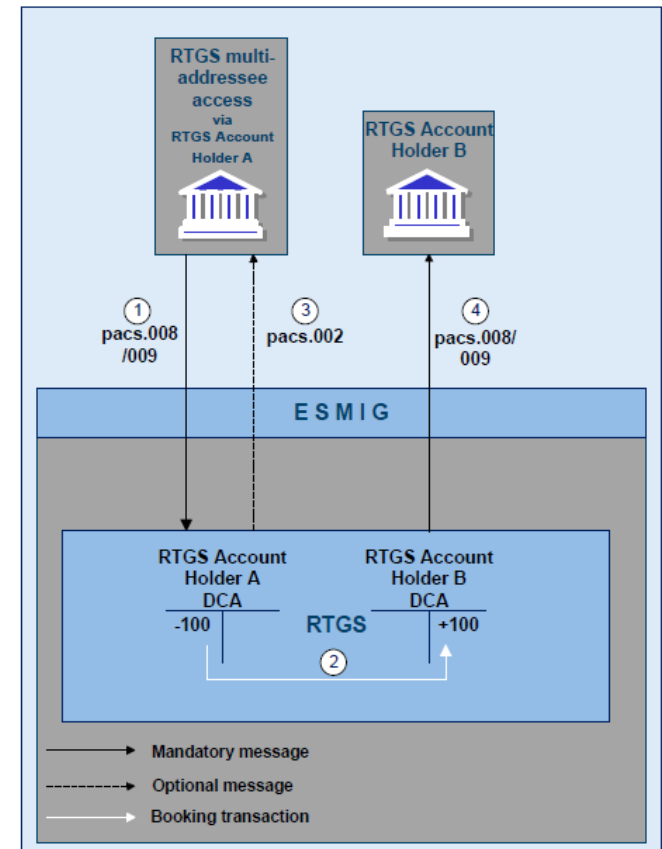
Payments in RTGS - settlement

Example for the settlement of a payment

Use case: Transfer from multi-addressee -> RTGS account holder

CustomerCreditTransfer (pacs.008)
FinancialInstitutionCreditTransfer (pacs.009)

- 1 The RTGS multi-addressee sends a payment order (FinancialInstitutionCreditTransfer (pacs.009) or CustomerCreditTransfer (pacs.008)) via ESMIG to RTGS. (BIC of Multi-Addressee included in BAH)
- 2 RTGS settles the payment order on the RTGS DCAs of RTGS Account Holders A and B after successful validation.
- 3 RTGS sends a settlement notification for the payment (PaymentStatusReport (pacs.002)) via ESMIG to the multi-addressee (optional).
- 4 RTGS creates and forwards the payment order (FinancialInstitutionCreditTransfer (pacs.009) or CustomerCreditTransfer (pacs.008)) via ESMIG to RTGS account holder B.



TARGET2/T2S consolidation

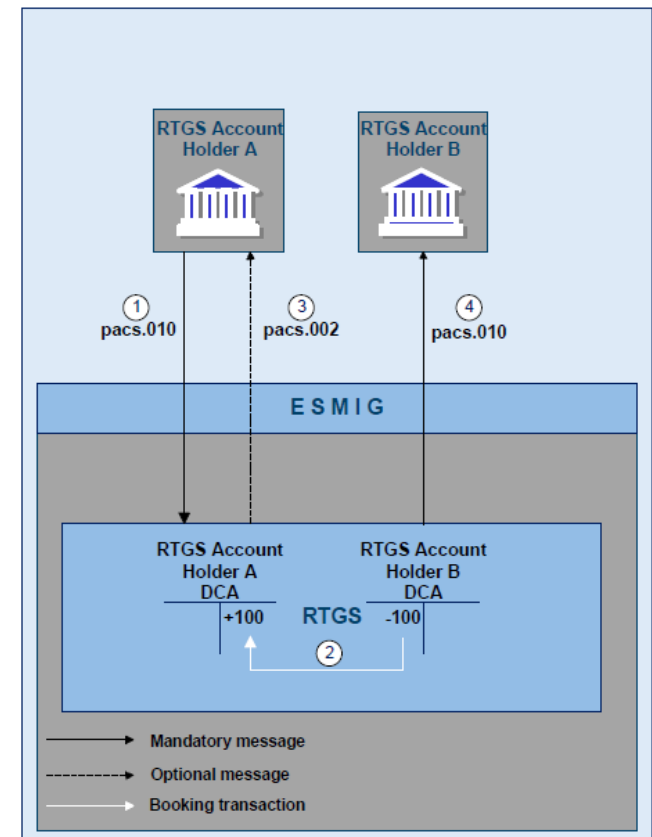
Payments in RTGS - settlement

FinancialInstitutionDirectDebit
(pacs.010)

Example for the settlement of a payment

Use case: Direct debit

- 1 RTGS account holder A sends a FinancialInstitutionDirectDebit (pacs.010) via ESMIG to RTGS.
- 2 RTGS settles the payment order on the RTGS DCAs after successful validation.
- 3 RTGS sends a settlement notification (PaymentStatusReport (pacs.002)) via ESMIG to RTGS account holder A (optional).
- 4 RTGS creates and forwards a FinancialInstitutionDirectDebit (pacs.010) via ESMIG to RTGS Account Holder B.



Before the settlement of the direct debit RTGS checks, if a direct debit mandate is entered in CRDM.

TARGET2/T2S consolidation

Payments in RTGS – priorities

- Each payment order can be submitted with a **priority**.
- The priority can be chosen when submitting the order, depending on the possibilities regarding
 - payment order type (pacs.008/pacs.009/pacs.010) and
 - submitting party.
- The priority can be changed by the RTGS account holder or the mandated central bank taking into account specific rules (**pre-condition is that the order does not have a final status – i.e. settled**).

TARGET2/T2S consolidation

Payments in RTGS – priorities

Urgent

- **Immediate execution** of the cash transfer order, if no other urgent cash transfers are queued.
- **FIFO-principle** applies for urgent cash transfer orders in RTGS.
- BUT: **automated liquidity transfers** (inter-service) **will always be settled first**.

High

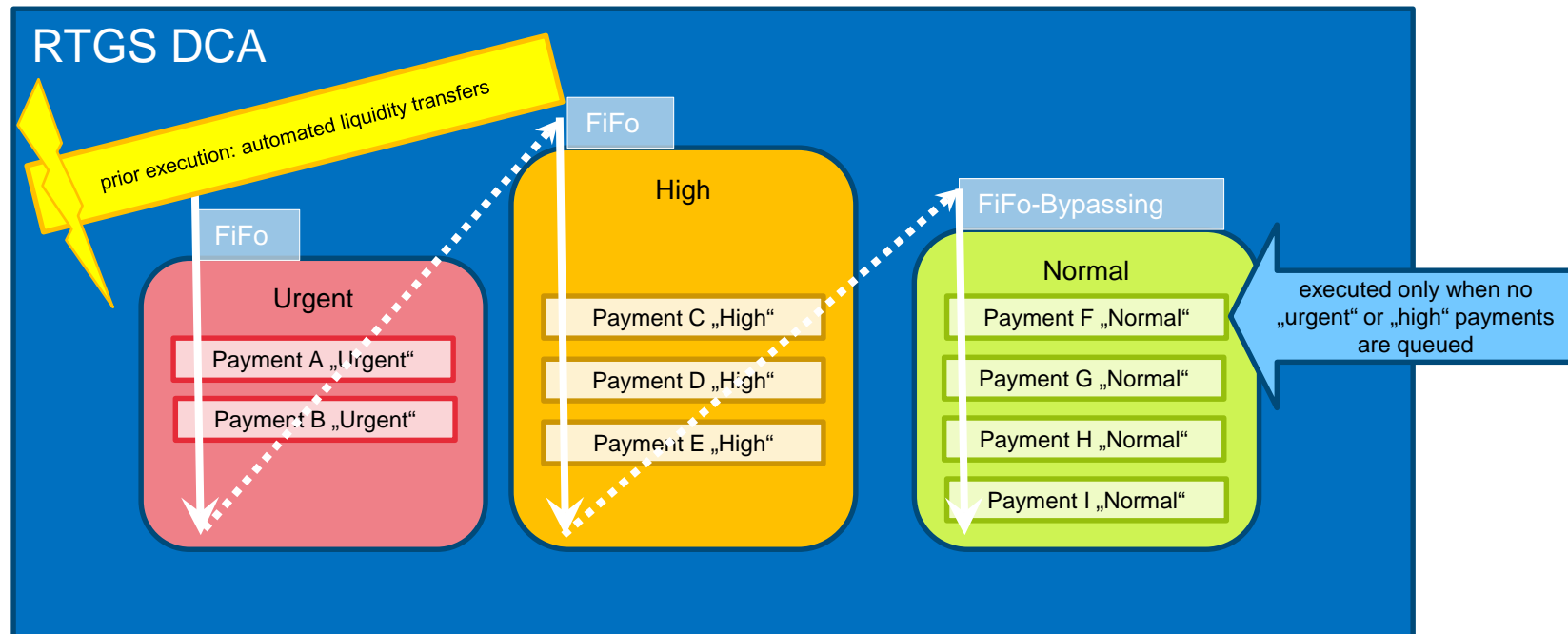
- **Immediate execution** of the cash transfer order, if no other urgent or high classified cash transfers are queued.
- **FIFO-principle** applies for as high classified cash transfer orders in RTGS if no urgent cash transfer is queued.

Normal

- Processing of the payment according to the „**FIFO-bypassing**“ principle if no urgent or high payment is pending
- „FIFO-bypassing“ means that **the queue is not decisive**, rather the account balance, opposing cash transfers, reservations and limits are influencing factors.
- „Normal“ will be used if no priority was chosen (**default**).

TARGET2/T2S consolidation

Payments in RTGS – priorities



Priorisation of cash transfer orders – what priority can be assigned?

	default priority	allowed priorities
CustomerCreditTransfer (pacs.008)	normal	high, normal
PaymentReturn (pacs.004)	normal	normal
FinancialInstitutionCreditTransfer (pacs.009)	normal	urgent, high, normal
FinancialInstitutionDirectDebit (pacs.010)	normal	urgent, high, normal
Liquidity transfer order codeword „SBTI“ (AS settlement)	urgent	urgent
AS transfer order	urgent	urgent

Listed for the sake of completeness

Priorisation of cash transfer orders – who can do what?

Urgent	FinancialInstitutionCreditTransfer (pacs.009)	Central bank
	FinancialInstitutionDirectDebit (pacs.010)	
	FinancialInstitutionCreditTransfer (pacs.009) codeword „SBTI“ (AS Settlement)	RTGS account holder
High	CustomerCreditTransfer (pacs.008)	RTGS account holder or central bank
	FinancialInstitutionCreditTransfer (pacs.009)	
	FinancialInstitutionDirectDebit (pacs.010)	
Normal	CustomerCreditTransfer (pacs.008)	RTGS account holder or central bank
	PaymentReturn (pacs.004)	
	FinancialInstitutionCreditTransfer (pacs.009)	
	FinancialInstitutionDirectDebit (pacs.010)	

TARGET2/T2S consolidation

Payments in RTGS – execution time

The payment will be executed during the business day. RTGS account holders may define the following execution times:

„Earliest debit time indicator“	„Latest debit time indicator“
<ul style="list-style-type: none">• Payments are stored until the execution time (FromTime) is reached and will then be delivered to the entry disposition.• If RTGS cannot immediately settle the payment at the execution time the payment will be queued.• If the payment cannot be settled by the end of the business day or possibly by reaching the RejectTime it will be rejected.	<ul style="list-style-type: none">• Option A: The payment has to be executed by a pre-defined time (RejectTime). Otherwise the payment will be rejected.• Option B: The payment is ought to be settled by a pre-defined time (TillTime). Otherwise, the payment will be queued and – if it cannot be settled before – will be rejected when reaching the respective cut-off.• If a payment (option A + option B) is not settled 15 minutes before reaching the pre-defined time, RTGS informs the account holder via U2A and via A2A if subscribed.

TARGET2/T2S consolidation

Payments in RTGS – execution time

- The defined **execution time can be changed** as long as the payment has not been settled or the execution time has not been reached.
Example: the FromTime of a payment in the queue (after reaching the execution time) cannot be changed anymore.
- For a payment an **earliest as well as a latest debit time indicator** (option A or B) can be defined.
 - FromTime + RejectTime (Option A)
= the payment has to settle within **the defined time slot**. Otherwise it will be rejected.
 - FromTime + TillTime (Option B)
= the payment may only settle when reaching the **FromTime** and is ought to be settled until the **TillTime** is reached. When the TillTime is reached the settlement attempt will be continued.
 - RejectTime (Option A) + TillTime (Option B)
= **cannot be combined**; RTGS rejects such an order

TARGET2/T2S consolidation

Payments in RTGS – warehoused payments

- Payment order can be submitted up to 10 calendar days before the intended settlement day.
- Submission, possibly changes and recalls are done by the RTGS account holder.
- Warehoused payments will be stored in RTGS until the intended settlement day starts. By then these will be **validated** against the business rules **at the start of each business day** (possibly resulting in a rejection).
 - Example for the **migration**: A participant submits an MT payment on Thursday before the migration weekend with intended settlement day after the migration → Rejection by TARGET2 (old system) on the submission day (→ no warehoused payment from TARGET2 to T2/RTGS possible)

TARGET2/T2S consolidation

Payments in RTGS – warehoused payments



- On the intended settlement day the payment will be **executed with the start of the execution window for customer and interbank payments** (as of 02:30)
 - In general, the payment will be **executed before all incoming payments with the same priority** (provided that sufficient liquidity is available).
 - Only warehoused payments with a **FromTime** will be **queued** until the execution time is reached.

Modifications of **certain parameters** by an authorised RTGS actor are possible, ...

- as long as a payment is **not settled**.
- during the **whole business day** (excl. maintenance window).
- in A2A and U2A mode.

What can be modified?

- **Priority** of a payment – by the RTGS account holder or the central bank (on behalf)
- **Execution time** – by the RTGS account holder or the central bank (on behalf)
- **Sequence in the queue** – by the RTGS account holder or the central bank (on behalf)

Priority

- Options: „**normal**“ <-> „**high**“
- Modifications are **possible repeatedly**
- The modified payment order (1) keeps the original submission time, (2) will be placed in the queue in accordance with the new priority and the original submission time and (3) will be executed in accordance to the rules applicable to the new priority (e.g. urgent will be executed prior to the other payments).

Execution time

- FromTime, TillTime, RejectTime can be modified if an execution time was already specified in the original payment order.
- **Deletion** of the earliest debit time indicator „FromTime“:
 - urgent/high: immediate settlement attempt in accordance with the rules for the queue management.
 - normal: no immediate execution but consideration regarding FiFo-bypassing.
- **Modification** of FromTime for urgent/high/normal: consideration in the settlement process with the new FromTime.

TARGET2/T2S consolidation

Payments in RTGS – modification

Sequence in the queue

- Modification of a **single** (in A2A and U2A) and **several** (only in U2A) **payment orders** possible.
- Modification for alle cash transfer orders possible.
- Modification for **all priorities** possible.
- Options: **on top or at the end of the queue** (for payments with the same priority)

urgent/high
(top <-> end)

Immediate check if the order on top of the queue can be executed.

urgent/high
(any position -> end)

No immediate execution
Consideration in the next settlement process

normal
(-> top/end)

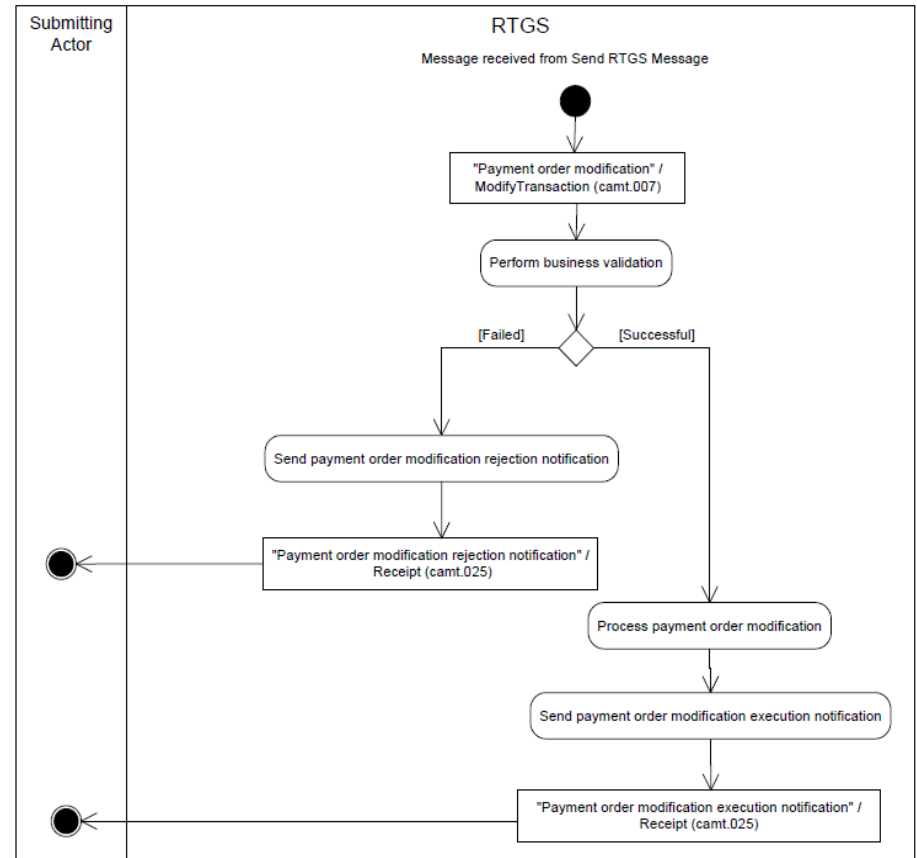
! An automated liquidity transfer cannot be removed from the top of the queue !

TARGET2/T2S consolidation

Payments in RTGS – modification

Successful modification

- RTGS account holder submits a ModifyTransaction (camt.007).
- RTGS checks the modification request; especially regarding the status (not settled)
- In case of a successful validation RTGS modifies the order (otherwise a notification with a rejection (receipt (camt.025) will be sent).
- RTGS sends a positive notification (receipt (camt.025)).

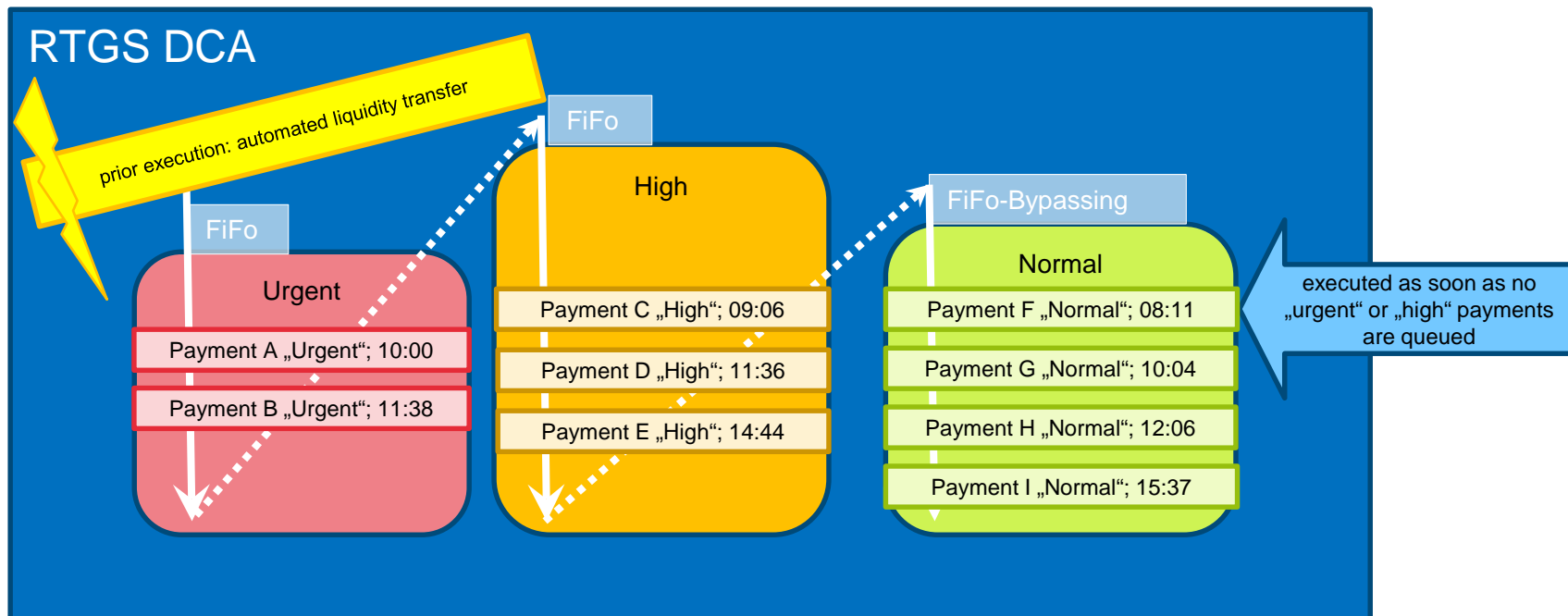


TARGET2/T2S consolidation

Payments in RTGS – modification

Task

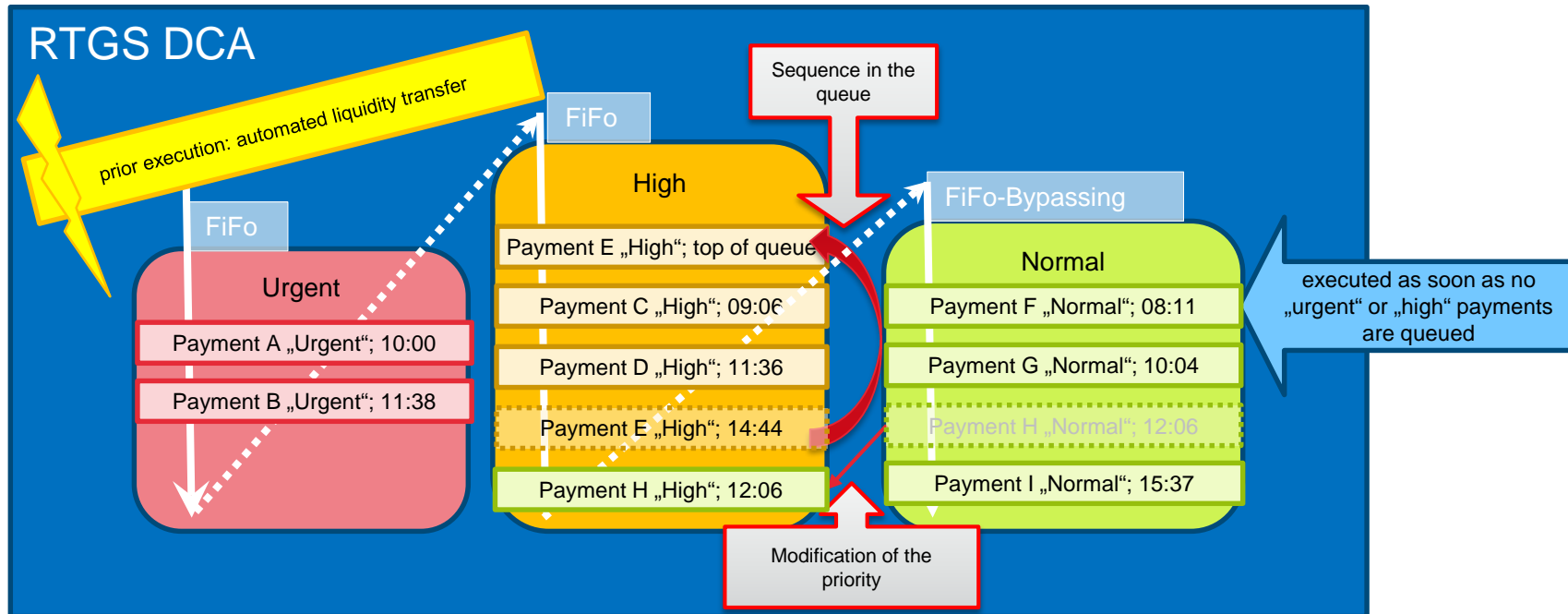
The priority of payment H is changed from „normal“ to „high“. Furthermore payment E is placed on top of the queue. What does the new illustration look like?



TARGET2/T2S consolidation

Zahlungen in RTGS – modification

Solution



TARGET2/T2S consolidation

Payments in RTGS – backup payments

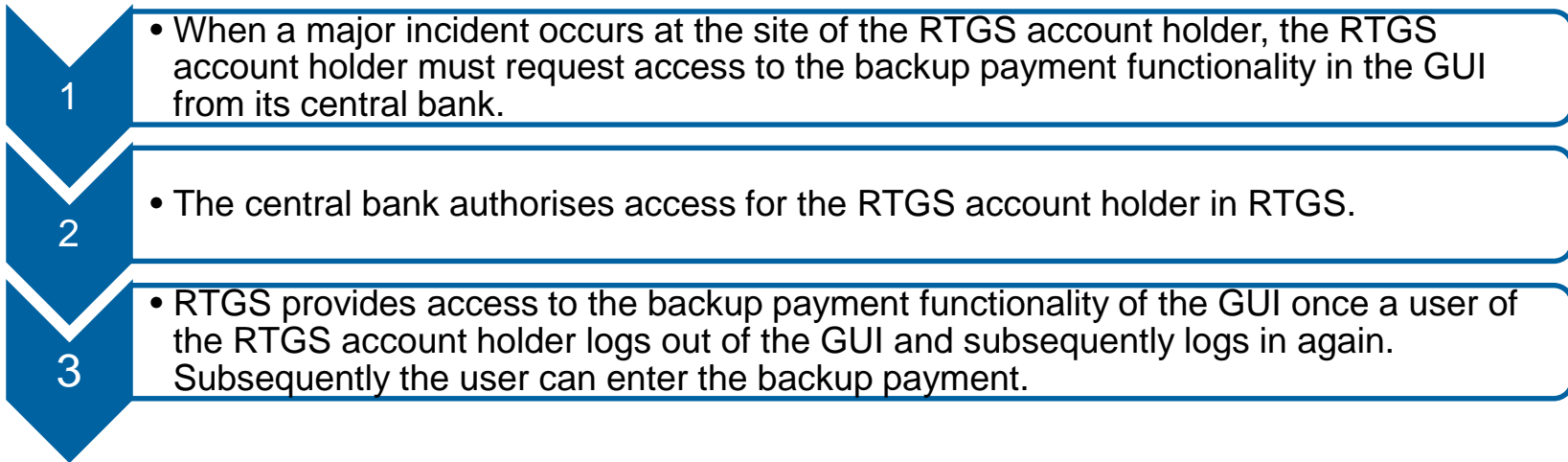
only U2A

- Use of backup payments in the event of a major incident at the RTGS account holder, making it impossible to reach RTGS in A2A mode.
 - Only U2A mode is available
- Backup payments shall reduce negative business impact – especially regarding the liquidity on the RTGS DCAs (e.g. prevention of liquidity shortage).
- Backup payments serve the redistribution of liquidity (backup liquidity redistribution payments) to other RTGS DCAs.
- The backup functionality will be activated by the central bank via the graphical user interface (GUI) by request upon the RTGS account holder.
- RTGS account holder as well as central banks can use the backup functionality.

TARGET2/T2S consolidation

Payments in RTGS – backup payments

Procedure for requesting and using backup payments



- If subscribed, the RTGS account holder will receive a Settlement Notification (camt.054) for the backup payments submitted as soon as the A2A connection is available again.

TARGET2/T2S consolidation

Payments in RTGS – backup payments

Backup liquidity redistribution payments

- Characteristics of the payment order:
 - Payments exclusively to RTGS DCAs
 - Priority: High
 - Entry through GUI
 - Message type: FinancialInstitutionCreditTransfer (pacs.009)
 - Sender of the message: RTGS
 - Receiver of the message: RTGS account holder (creditor)
 - Codeword (only outbound*): BACP

*outbound:

Message to the account holder (debited): camt.054

Message to the account holder (credited): pacs.009

Subsequent submission of payment order after resuming normal operations

- Backup payments do not have to be resent or confirmed again. RTGS does not perform a duplicate check.
- If the RTGS account holder **resumes normal operations on the same day** before the cut-off, the RTGS account holder can **send payment orders** to RTGS as usual.
- If the RTGS account holder only **resumes** normal operations on the **following day or later**, RTGS provides two possibilities to process payment orders:
 - submission of payment orders with the **current (new) settlement date** in the message element “interbank settlement date”;
 - submission of payment orders with the **past (original) settlement date** in the message element “interbank settlement date”. In this case the central bank has to **suspend** the **validation rules** for the settlement date (request by the RTGS account holder necessary).
- These payment orders are released by the affected account holder after resuming normal operations like any other new payment orders; no special treatment of these payment orders is required.

TARGET2/T2S consolidation

Payments in RTGS – revocation / recall

Revocation for queued payments

Recall for already settled payments

On request of the RTGS account holder
(FIToFIPaymentCancellationRequest (camt.056))

CustomerCreditTransfer (pacs.008)

FinancialInstitutionCreditTransfer (pacs.009)

PaymentReturn (pacs.004)

FinancialInstitutionDirectDebit (pacs.010)

Only if the payment is queued, the revocation will be immediately effective.

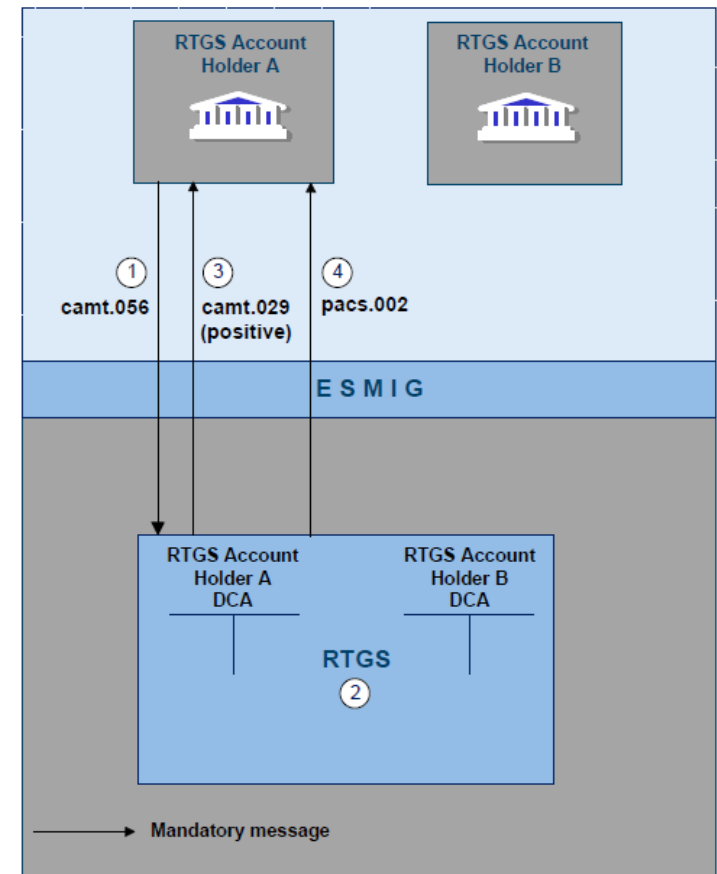
The receiver of the payment decides after receiving the recall request if he agrees or rejects it. In accordance with his decision, the request will be executed or not.

TARGET2/T2S consolidation

Payments in RTGS – revocation / recall

Successful revocation

- 1 RTGS account holder (A) sends a FIToFIPaymentCancellationRequest (camt.056) to RTGS.
- 2 RTGS validates the request and checks the status of the message (not settled).
- 3 RTGS sends a notification on the successful revocation to the RTGS account holder (A) (ResolutionOfInvestigation (camt.029)).
- 4 RTGS sends a notification (Payment StatusReport (pacs.002)) to the RTGS account holder (A).



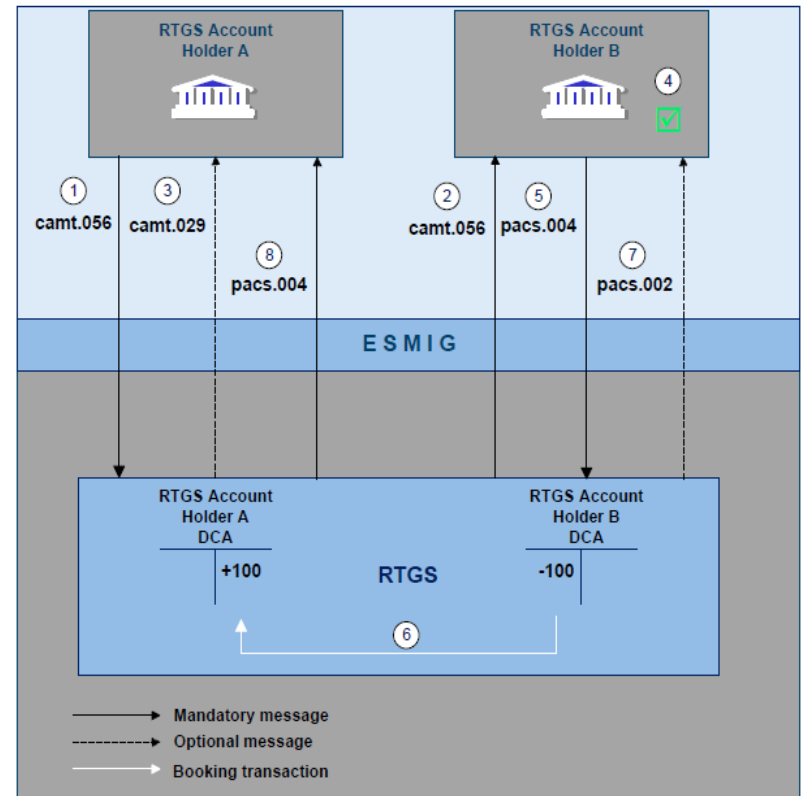
If a revocation is not possible, the RTGS account holder receives a camt.029 with negative status.

TARGET2/T2S consolidation

Payments in RTGS – Revocation / Recall

Successful recall

- 1 RTGS account holder (A) sends a FIToFIPaymentCancellationRequest (camt.056) via ESMIG to RTGS.
- 2 RTGS forwards the messages to RTGS account holder B.
- 3 RTGS notifies RTGS account holder A about the forwarding with a ResolutionOfInvestigation (camt.029).
- 4 RTGS account holder B checks the request.
- 5 RTGS account holder B sends a PaymentReturn (pacs.004) via ESMIG to RTGS.
- 6 RTGS executes the payment order after successful validation.
- 7 RTGS sends a positive notification (Payment StatusReport (pacs.002)) to B (if subscribed).
- 8 The PaymentReturn (pacs.004) will be forwarded to RTGS account holder A.



If B rejects the recall he will send a camt.029 with the rejection code which will be forwarded to A.

7 Real-Time Gross Settlement (RTGS)

Overview

Account structure in RTGS

Participation types in RTGS

Liquidity transfers in RTGS

Payments in RTGS

Liquidity management features in RTGS

Ancillary system settlement

Reservation of liquidity

- **Optional** function ...

- to reserve liquidity on the RTGS DCA,
- by the RTGS account holder (or an authorised RTGS actor, in contingency also the central bank),
- for the execution of certain cash transfers

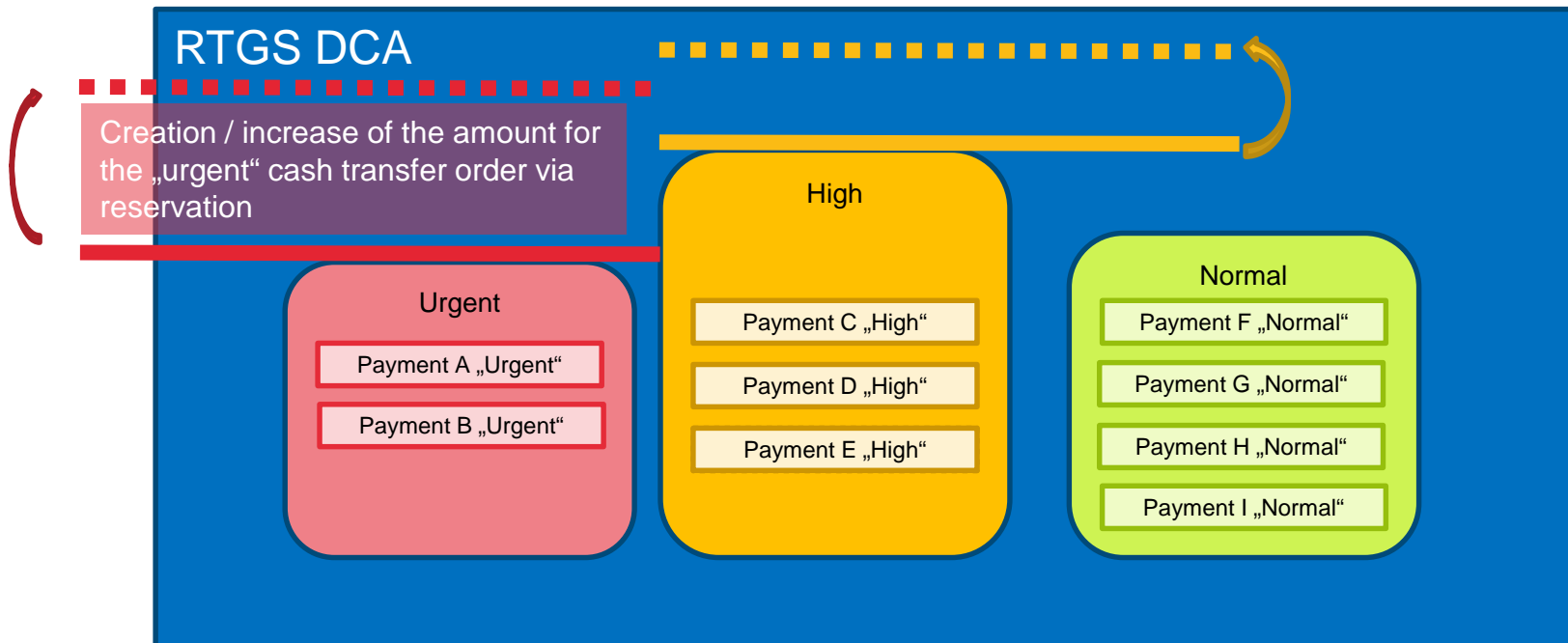


- ❖ Typ 1: „urgent“ ⇒ for the execution of urgent cash transfers
- ❖ Typ 2: „high“ ⇒ for the execution of urgent and high cash transfers

- Use cases:

- **Current** reservation with **immediate effect**
- **Standing order** for reservation

Reservation of liquidity



Reservation of liquidity

- Reservations are only possible on **RTGS DCAs** (not on sub-accounts).
- The reservation can be entered during the business day (excl. maintenance window and EoD processing) in **A2A or U2A mode**.
- If the available liquidity is not sufficient for the defined reservation...
 - the reservation will settle **partially**.
 - the missing amount will be **queued**.
 - the reservation will **increase** with every **credit** until the target amount is reached.
 - pending reservations for „**urgent**“ cash transfers will be executed **first**.

Reservation for liquidity

Standing order reservation

- The maintenance is done in **CRDM**.
- The **creation** is done in **U2A** mode. **Modifications can be done in U2A and/or A2A** mode.
- The defined amount to be reserved is **valid at the SoD** of each business day.
- Reservations that are **pending at the end of the day** (due to missing liquidity) will be **rejected**.
- The creation, modification and deletion (setting the amount to 0.00) is **valid as of the next business day**.
- Standing order reservations can be created simultaneously for „**urgent**“ and „**high**“ cash transfer orders.

Reservation of liquidity

Current reservation

- The maintenance is done directly in **RTGS**.
- The reservation is **immediately and only** valid for the current business day.
- During the business day, **modifications of the amount** are possible (incl. setting the amount to 0.00).
- Reservations will be deleted,
 - after reaching the event „Cut-off for RTGS RTS II“,
 - if the reservation is recalled or
 - a new current order is submitted to RTGS.

Principles of liquidity management – summary

Reservations are taken into account in the settlement process as follows:

Effect	Urgent cash transfer	High cash transfer	Normal cash transfer
Available liquidity for settlement of cash transfers	Balance on RTGS DCA	Balance on RTGS DCA minus urgent reserve	Balance on RTGS DCA minus urgent reserve minus high reserve
Effect of outgoing cash transfers	<ul style="list-style-type: none"> Reduction of balance on RTGS DCA Reduction of urgent reserve If the urgent reserve is not sufficient, the liquidity will be used as follows: <ul style="list-style-type: none"> – available liquidity for normal cash transfers; – reduction of the high reserve. 	<ul style="list-style-type: none"> Reduction of balance on RTGS DCA Reduction of high reserve If the high reserve is not sufficient, the available liquidity for normal cash transfers will be used. 	<ul style="list-style-type: none"> Reduction of balance on RTGS DCA
Effect of incoming (i.e. credited) cash transfers	Increase of balance on RTGS DCA	Increase of balance on RTGS DCA	Increase of balance on RTGS DCA

Principles of liquidity management – summary

- RTGS allows the reservation of amounts for **urgent and high** classified cash transfer orders.
- In case of insufficient liquidity for the settlement of high and urgent cash transfer orders the liquidity can be pulled from the linked MCA (**rule-based liquidity transfer**):

• Sequence:

Business case	Tapping of liquidity reservations				
	RTGS DCA			CLM MCA	
	Urgent (U)	High (H)	Available liquidity for normal payments	CBOs	Non-reserved
Liquidity transfer	3	2	1		
U payment/ancillary system transfer	1	3	2		4 ²³
H payment		1	2		3 ²⁴
N payment			1		

TARGET2/T2S consolidation

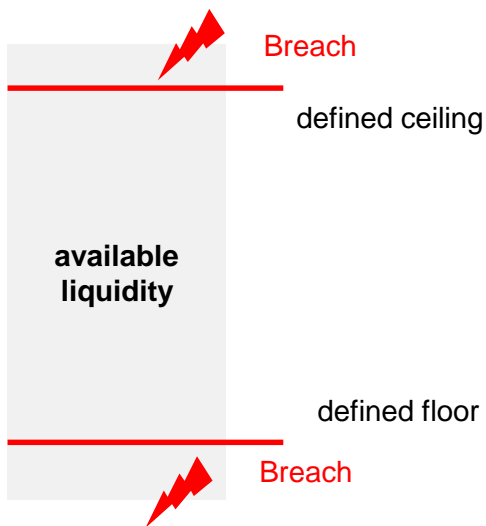
Liquidity management features in RTGS

Principles of liquidity management – summary

Activity	Balance on RTGS DCA	Urgent reserve	High reserve	Available liquidity for normal cash transfers
Start	1,000	100	200	700
Settlement of ancillary system = 50 (debit)	↓ 950	↓ 50	↔ 200	↔ 700
Submitting high cash transfer to bank B = 200	↓ 750	↔ 50	↓ 0	↔ 700
Submitting normal cash transfer to bank C = 20	↓ 730	↔ 50	↔ 0	↓ 680
Settlement of ancillary system = 100 (credit)	↑ 830	↔ 50	↔ 0	↑ 780
Incoming high cash transfer from bank B = 50	↑ 880	↔ 50	↔ 0	↑ 830
Incoming normal cash transfer from bank C = 30	↑ 910	↔ 50	↔ 0	↑ 860
Set a new high reservation with immediate effect = 500	↔ 910	↔ 50	↑ 500	↓ 360
Settlement of urgent cash transfer in favour of CB = 450 (debit)	↓ 460	↓ 0	↓ 460	↓ 0

Floor/ceiling

- **Optional** function
 - defining a **floor** or a **ceiling**
 - for each RTGS DCA.
 - administered by the **RTGS account holder** (or a third party).
 - in **CRDM**.



Possible reactions (options)

- can be combined
- are chosen by the account holder

Option 1: RTGS **informs** the account holder about the breach. The account holder decides on the next steps.

Option 2: RTGS processes a rule-based liquidity transfer with the linked **MCA**. Different accounts can be defined for the debit/credit.

TARGET2/T2S consolidation

Liquidity management features in RTGS

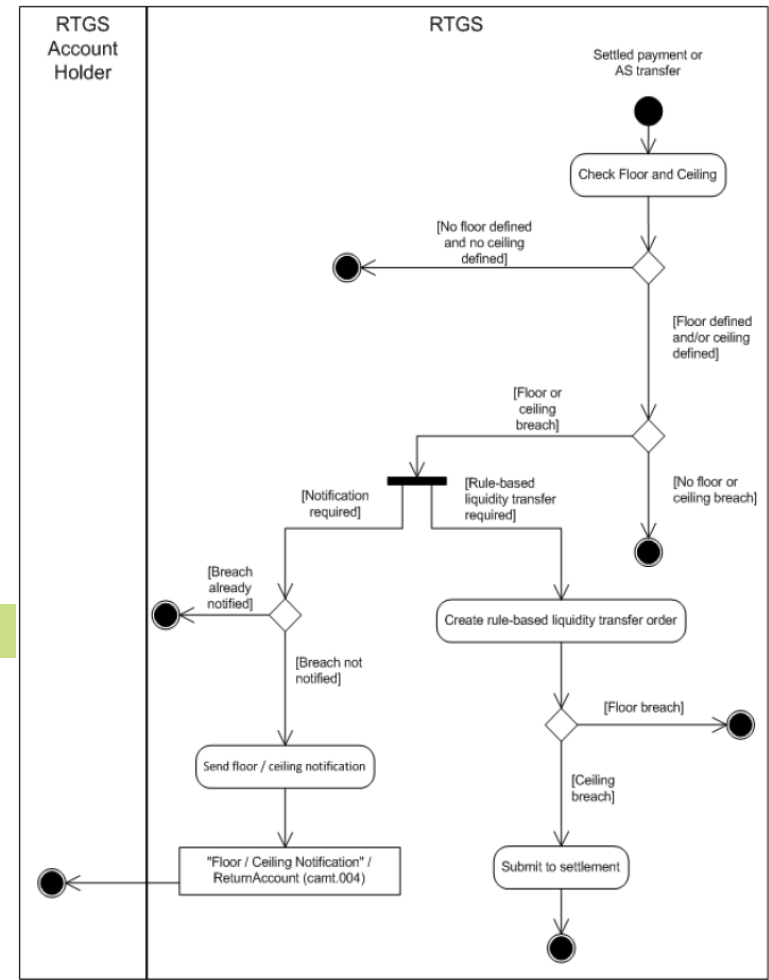
in accordance to CLM



Floor/ceiling

Consideration in the settlement process

- RTGS checks the compliance with the defined floor and ceiling amount after the settlement of payments or AS transfers.
- If no floor or ceiling amount was defined the process ends.
- In case of a breach RTGS checks which option (1 and/or 2) was chosen by the RTGS account holder and initiates the respective process.



TARGET2/T2S consolidation

Liquidity management features in RTGS

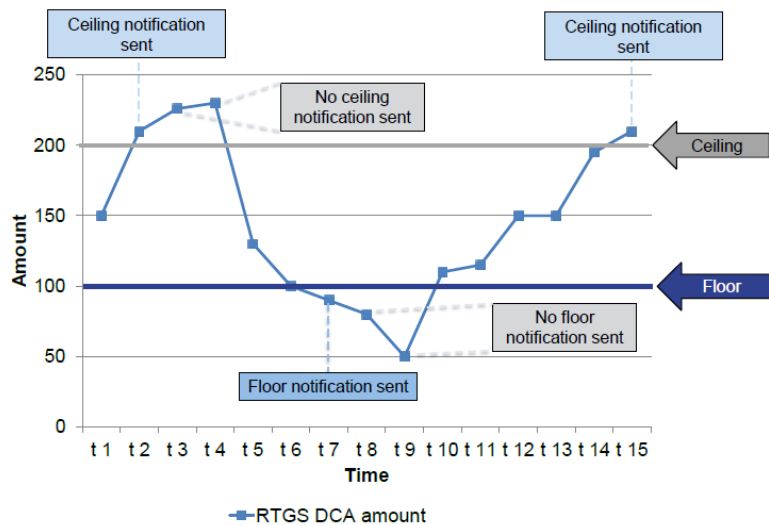
in accordance to CLM



Floor/ceiling

Option 1 – Notification in case of a breach

- RTGS sends a notification in U2A or A2A* mode with the information that a floor or ceiling amount was breached.
- The account holder will be informed of every breach.
- If the available liquidity further decreases after the breach of the floor or further increases after the breach of the ceiling no further notification will be provided.



* ReturnAccount (camt.004)

Floor/ceiling

Option 2 – rule-based liquidity transfer in case of a breach

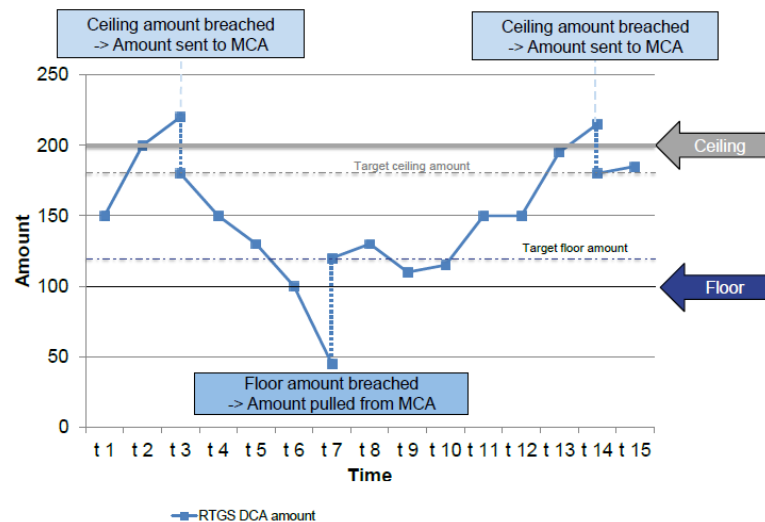
RTGS initiates a rule-based liquidity transfer.

• Case 1: Breach of the floor

- RTGS pulls liquidity from the defined MCA
- to reach a pre-defined amount (that can be different from the floor amount).
- In case of insufficient liquidity on the defined MCA the liquidity transfer will be partially settled. No further settlement attempt is made.

• Case 2: Breach of the ceiling

- Liquidity transfer to the defined MCA
- The amount to be transferred is the difference between the currently available liquidity on the RTGS DCA and the predefined target amount.



Rule-based liquidity transfer due to queued payments and AS transfers

- **Optional** function
 - for the definition of a **rule-based liquidity transfer** (inter-service) from the linked MCA
 - by the **RTGS account holder** in CRDM
 - in case certain **cash transfer orders** are queued. There are two possibilities:
 - ❖ **urgent** payments, **high** payments, **AS transfers**
 - ❖ **urgent** payments , **AS transfers**
- If an **automated liquidity transfer from CLM** (due to pending CBOs) **is queued, no rule-based liquidity transfer** is initiated.

Rule-based liquidity transfer due to queued payments and AS transfers

- Pull liquidity from the defined MCA with the following **amount**:
 - **Case 1**: an urgent payment or AS transfer gets queued
difference between the RTGS DCAs balance and the sum of all currently queued urgent payment orders and AS transfer orders
 - **Case 2**: a high payment gets queued
difference between the account balance and the sum of all currently queued urgent payment orders and AS transfer orders and high priority payment orders
- In case of **insufficient liquidity** on the MCA the order will be **partially executed**. For the missing amount **no further settlement attempt** will be performed.
- **After the liquidity transfers**, an event-based process for the **dissolution of the queue** is triggered.

Limits

- **Optional** function
 - to define a maximum amount for the **liquidity outflow** (limit)
 - for payments with the **priority „normal“**,
 - defined by the RTGS account holder or authorised RTGS actor (central bank only in case of contingency).
 - with the aim of ensuring an early settlement of payments with the **full control over the liquidity** and the possibility to **synchronise payments** (debits and credits).
- **Types**
 - *Bilateral limit:*
maximum net amount towards another RTGS DCA
 - *Multilateral limit:*
maximum net amount to all other RTGS DCAs with whom **no bilateral limit** has been defined

Limits

- General rules:

- **Minimum amount** of € 1 million
 - Bilateral limits **towards central banks** are **not possible**. It is not possible to define limits towards CB Accounts.
 - Bilateral and multilateral limits with an amount of „0“ are **„not defined“**.
 - A **multilateral limit** can only be defined if **at least one bilateral limit** is defined.
-
- The definition of the limit (**standing order limit**) is done in CRDM.

 - At the SoD the limit will be set.

 - **Intraday** limit modifications are possible **in RTGS** (increase, decrease or reducing to „0“). A limit set to „0“ cannot be increased during the day.

 - The modification and deletion of a limit is done in **CRDM and is valid as of the next business day.**

Limits

- During the business day the limit is regularly **updated**
 - considering (1) incoming liquidity from urgent/high/normal payments and (2) outgoing liquidity from normal payments.
 - Creation of a „**bilateral / multilateral position**“:

Bilateral position =

Sum of **all** credits („urgent“, „high“, „normal“) on the DCA from the DCA towards which a bilateral limit is defined
./ sum of the debits (only „normal“ payments) from DCA to DCA towards which a bilateral limit is defined

Multilateral position =

Sum of **all** credits („urgent“, „high“, „normal“) on the DCA from all DCAs towards which no bilateral limit is defined
./ Sum of all debits (only „normal“ payments) from DCA to all DCAs towards which no bilateral limit is defined

- Creation of the „**free limit position**“:

„free limit position“ = defined limit
 +/- bilateral / multilateral position

- A „normal“ payment will only be executed if the „free limit position“ is positive

Limits

Value of limits in the processing of normal payments

<p>Available liquidity for the execution of „normal“ payments</p>	<ul style="list-style-type: none"> • Balance of the RTGS DCA <ul style="list-style-type: none"> ./ reservation for urgent cash transfers ./ reservation for high cash transfers
<p>Effect of outgoing „normal“ payments (from the RTGS DCA)</p>	<ul style="list-style-type: none"> • Decrease of the balance • Reduction of the bilateral/multilateral position (payments will be queued if the amount to be paid is higher than the „free limit position“.)
<p>Effect of incoming payments (on the RTGS DCA)</p>	<ul style="list-style-type: none"> • Increase of the balance • Increase of the „free limit position“

Limits

Value of limits in the processing of normal payments

Example: Bilateral limit from RTGS DCA A (3 Mio. €) towards RTGS DCA B

	Bilateral limit	Submitted payments	Effect
DCA A → DCA B	3 Mio. €	10 Mio. €	Up to the limit of 3 Mio. € payments from DCA A to DCA B are executed DCA A → DCA B 3 Mio. € 7 Mio. € „queued“
Afterwards:			
DCA B → DCA A	Not relevant	6 Mio. €	<p>free limit position from A after the execution: 3 Mio. € limit + 6 Mio. € credit./ 3 Mio. € debit = 6 Mio. € free limit position</p> <ul style="list-style-type: none"> ➤ Max. 6 Mio. € can be executed from A to B but currently 7 Mio. € „queued“. ➤ Payments up to 1 Mio. € stay in the queue until <ul style="list-style-type: none"> • further credits are processed from B • A increases the limit to 4 Mio. € or deletes the limit by setting it to "0" <p>If the payments are not executed by the end of the day, these will be rejected.</p>

7 Real-Time Gross Settlement (RTGS)

Overview

Account structure in RTGS

Participation types in RTGS

Liquidity transfers in RTGS

Payments in RTGS

Liquidity management features in RTGS

Ancillary system settlement

TARGET2/T2S consolidation

Ancillary system settlement



- **Ancillary systems** may be (non-exhaustive list)
 - retail payment systems (e.g. SEPA Clearer, Scheckverrechnungsdienst (SVD))
 - individual payment systems (e.g. EURO1)
 - central counterparties (e.g. Eurex)
 - central securities depositories
 - instant payment systems
- **In future** ancillary systems shall use the **dedicated settlement procedures** – no classic payment messages
 - **Decision made by the Governing Council**
 - **Derogations** are possible (e.g. planned migration of business to T2S)
- RTGS offers five standardised AS* procedures (see following slide)

*AS = ancillary system

TARGET2/T2S consolidation

Ancillary system settlement



Current procedure	Future AS settlement procedure	Description
2 Real-Time Settlement	E	„Bilateral Settlement“ - Ancillary systems can benefit from the bilateral settlement of simultaneously sent debits and credits that shall be processed independently from each other. One „AS Batch Message“ contains one payment.
3 Bilateral Settlement	E	„Bilateral Settlement“ - Ancillary systems can benefit from the bilateral settlement of simultaneously sent debits and credits that shall be processed independently from each other. One “AS Batch Message” contains several payments.
4 Standard Multilateral Settlement	A	„Debits first“ - An ancillary system sends both debit and credit AS transfer orders for settlement to RTGS. RTGS must settle all debits before the credits.
5 Simultaneous Multilateral Settlement	B	„All or nothing“ - An ancillary system sends both debit and credit AS transfer orders for settlement to RTGS. RTGS settles all debit and credit AS transfer orders simultaneously if possible. No settlement takes place when simultaneous settlement of all debit and credit AS transfer orders is not possible.
6 Settlement on dedicated accounts - interfaced	C	This AS settlement procedure settles AS transfer orders on sub-accounts. This AS settlement procedure allows an AS settlement bank to dedicate liquidity for the settlement of AS transfer orders from a specific ancillary system.
6 Settlement on dedicated accounts – real-time	D	This AS settlement procedure settles AS transfer orders (i.e. liquidity transfers) on a technical account. This AS settlement procedure allows an AS settlement bank to dedicate liquidity for the settlement of a specific ancillary system (e.g. RT1).

	Used by AS currently connected via TARGET2-BBk
	Not used by AS currently connected via TARGET2-BBk

TARGET2/T2S consolidation

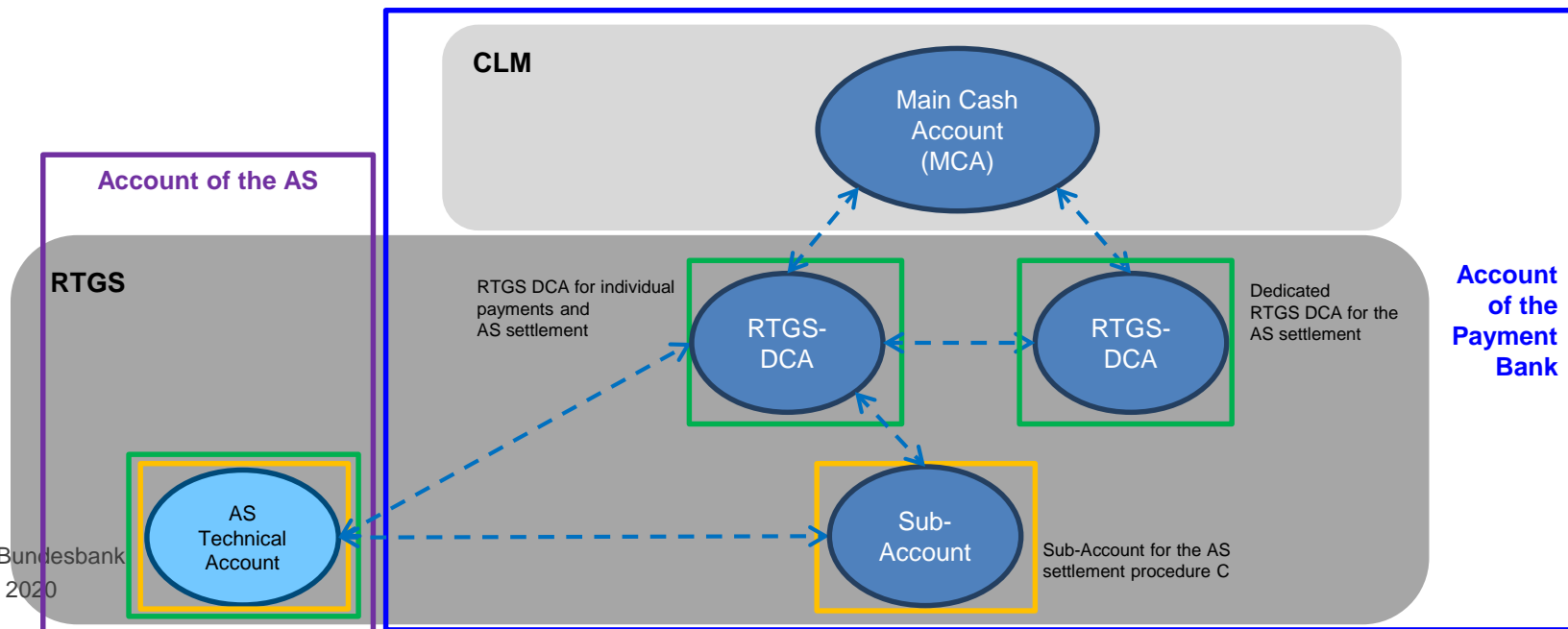
Ancillary system settlement

AS procedure	Short description	Account	Account holder	Used for the AS settlement
A	„Debits first“	RTGS DCA / RTGS CB account	Payment bank	Can be used for all procedures – except for procedure C for which a Sub-Account needs to be opened
B	„All or nothing“	Sub-account	Payment bank	Only for AS procedure C
C	Settlement on a Sub-Account (per AS); balance at the EoD 0.00 Euro.	Guarantee fund account	Guarantor (central bank, AS, payment bank)	for AS procedure A and B (prevention of reversing procedure or failure)
D	Liquidity for real-time ancillary system settlement on technical account	AS technical account	AS or central bank	Used for all AS procedure → per AS procedure a dedicated AS Technical Account needs to be opened (except for procedure E, where the AS Technical Account used for AS procedure C can be used)
E	„Bilateral Settlement“; „AS Batch Message“ with one or more payments			

TARGET2/T2S consolidation

Ancillary system settlement

- The AS currently connected via **TARGET2-BBk** will use the following procedures:
 - Clearstream No participation AS
 - Eurex AS procedure E
 - ECC AS procedure E
 - SEPA Clearer AS procedure C
 - SVD AS procedure C



TARGET2/T2S consolidation

Ancillary system settlement – sub-accounts



- Settlement on the sub-account
 - used for **AS procedure C**
 - one sub-account per AS necessary – more than one sub-account for one AS possible
 - **linked** to one RTGS DCA
 - identification via **account number** (e.g. U DE EUR BANKDEFFXXX [+ 17 characters])
- Liquidity provision via
 - **standing orders** defined in CRDM (RTGS account holder)
 - immediate **liquidity transfer** (A2A – camt.050 – or U2A) **by the RTGS account holder**
 - immediate **liquidity transfer by the AS**. (A2A – ASTransferInitiation – pain.998)
- Standing orders will be executed with the start of a (mandatory/optional) procedure.
- Immediate liquidity transfers are
 - **immediately** executed in case of a **credit** on the sub-account.
 - **stored** for execution till the cycle is closed in case of a **debit** on the sub-account.
- After the settlement of the **mandatory procedures** the AS can start **further optional procedures**.
A procedure can consist of several **cycles**.
 - During a cycle the liquidity is blocked on the sub-account.
 - After closing the mandatory procedure by the AS the liquidity will automatically be transferred to the linked RTGS DCA.

Do you have any questions?

Please contact your customer service team.