



EUROPEAN CENTRAL BANK

EUROSYSTEM

DESP-T2 interactions in the context of the digital euro

Ad-hoc T2-CG

24 April 2025

ECB team



Overview

- 1 Introduction / Digital euro fundamentals
- 2 Digital euro liquidity management
- 3 Understanding the TARGET-DESP interactions
- 4 DESP DCA's impact on TARGET processes

1

Introduction

Digital euro: focus on the fundamentals



‘Digital euro’ means the digital form of the single currency available to natural and legal persons (COM/2023/369 final).

**Pan-European
Reach**



Person-to-person
payment



Point-of-sale
payment



E-commerce

Use cases



Highest privacy standards



Inclusive and accessible



Paying offline

Intermediaries would play a key role in digital euro distribution

Distribution via supervised payment service providers (PSP)



Digital euro distribution would be carried out **exclusively by PSPs**



PSPs would exclusively maintain **customer relations**



PSPs would benefit from **digital euro open standards**

Healthy equilibrium between central bank money and commercial money



Holding limits for end users (none for corporates)



(Reverse) **waterfall functionality**



No remuneration for digital euro users

A digital euro will require the orchestrated interaction of all actors



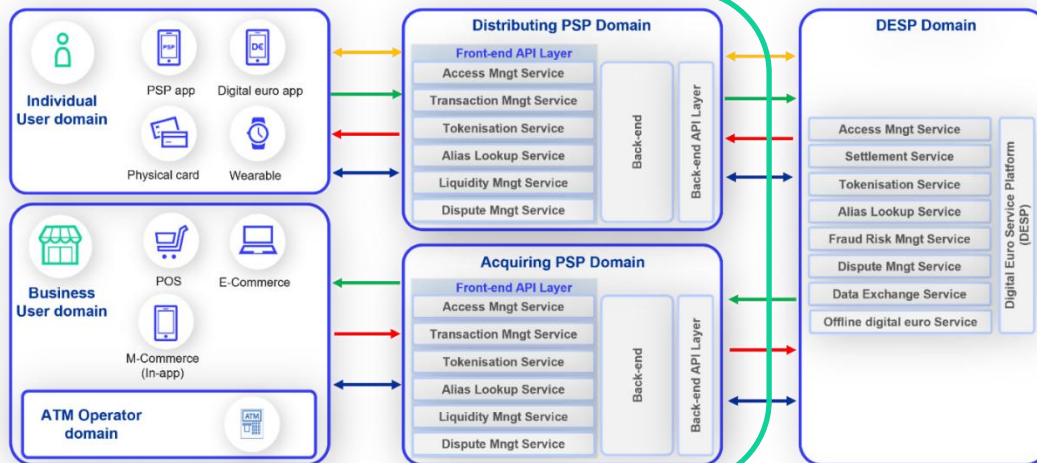
Digital euro high-level functional architecture supported by **Digital Euro Scheme Rulebook** and **Digital Euro Service Platform (DESP)**

Digital Euro Scheme Rulebook

- **single set of rules, standards and procedures** for digital euro distribution through intermediaries:
 - user / access management
 - liquidity management
 - transaction management
- to ensure users' **experience** and **perception** of a digital euro payments is the same across the **entire euro area**.

➡ Prepared with a dedicated group:
Rulebook Development Group (RDG)

DESP



↔ Access management → Individual User initiated journey → Business User initiated journey
↔ Person-to-Person, same or 2 Distributing PSPs involved, always via DESP (no on-us)

Preparing our currency for the future

Investigation phase

Oct. 2021 – Oct. 2023

Concept definition,
technical exploration and
design proposal

Preparation phase

Nov. 2023 – Oct. 2025

Main expected next steps:

- Finalise the **scheme rulebook**
- Select **service providers**
- Learn through **experimentation**
- **Deeper dive** into technical aspects, including further research into offline functions and developing a testing and rollout plan for the future

Next phase

From Nov. 2025

Potentially developing and
rolling out digital euro use
cases

A decision to issue a digital euro will only be considered by the ECB once the European Union's legislative process has been completed

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Digital euro liquidity management

Introduction to DESP liquidity management

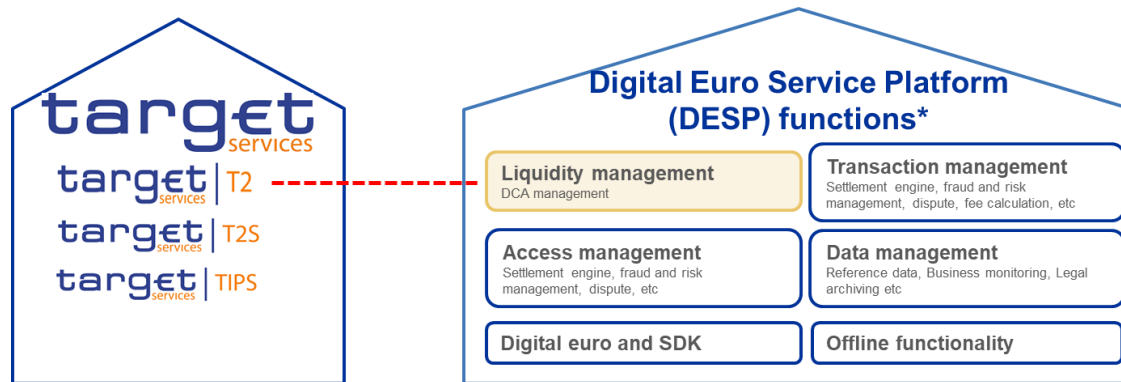
- The introduction of the digital euro will rely on the development and operation of a technical platform known as the **Digital Euro Service Platform (DESP)**. The DESP design includes **Dedicated Cash Accounts (DCAs)**.



A **DESP DCA** is a TARGET account in central bank money, held and operated by a TARGET participant (i.e., DCA holder) for the purpose of enabling digital euro funding and defunding at the request and on behalf of digital euro users.

- **Liquidity on the DESP DCAs will be sourced from TARGET Services.** Necessary adaptations on TARGET have been defined in the **CR T2-0150 “T2 adaptations to the digital euro”**.

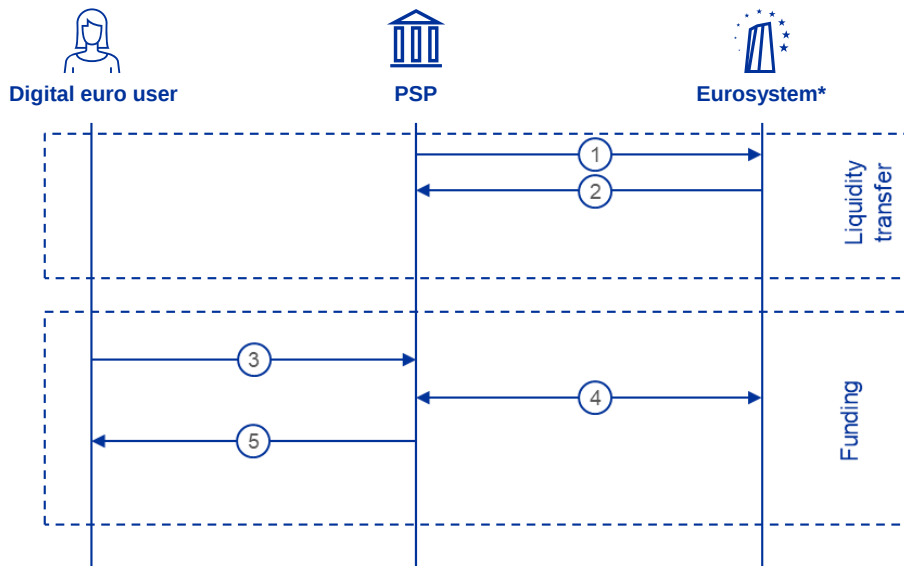
TARGET Services and DESP



- **DESP DCAs will interact with the Main Cash Accounts (MCA) in T2-CLM** to support the provision of liquidity to the DESP platform.
- The **balances in the DESP DCAs belong to the DCA Holders**, while the **holdings in digital euro reflected in the DESP settlement ledger belong to digital euro users**.
- In addition to liquidity transfers, there will be **further interactions between DESP and TARGET** to support the functioning of the DESP DCA in relation to CLM related to **general ledger file, reference data and queries**. The full list of interactions is defined in CR T2-0150 raised to support the implementation of the digital euro.

* High level and non-exhaustive representation of functionalities included in the DESP design. The functions will be offered by different components which are currently being sourced internally within Eurosystem and externally

Digital euro liquidity management in detail



The distribution of the digital euro entails **two distinct but related processes**. These are **liquidity transfer** and **funding/defunding** both **relying on DESP Dedicated Cash Accounts (DCAs)**.

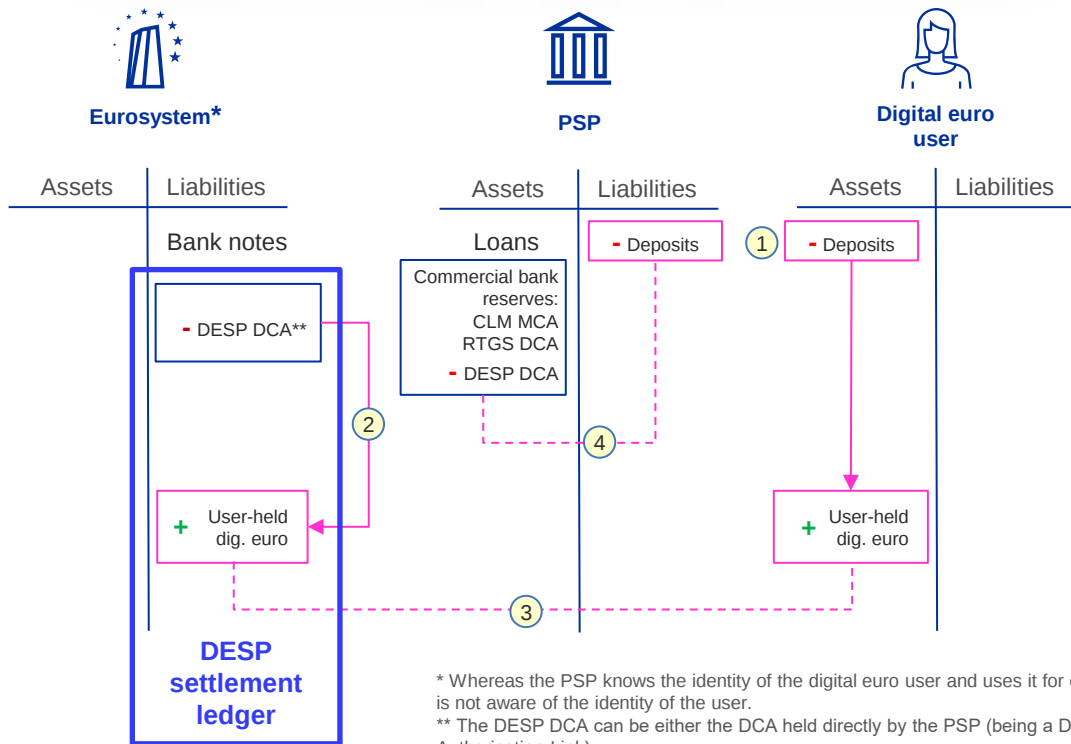
The **main steps** of the process are the following:

- 1) PSP as DCA Holder requests liquidity transfer from the Eurosystem responsible of the TARGET Services (e.g. CLM);
- 2) The Eurosystem debits the PSP's CLM MCA and credits DESP DCA;
- 3) Digital euro user asks to credit its digital euro holdings;
- 4) Upon user's requests, PSP asks the Eurosystem to debit its DESP DCA and credit user's digital euro holdings;
- 5) PSP debits user's non-digital euro payment account and confirms an increasing of user's digital euro holdings.

* Whereas the PSP knows the identity of the end user and uses it for e.g. AML/CFT compliance, the Eurosystem as operator of the settlement ledger is not aware of the identity of the end user.

Digital euro funding process

Defunding leads to the redemption of digital euro with reverse flow of liquidity



- Digital euro user requests their PSP for **funding of their digital euro holdings**. PSP reserves the same amount on the user's deposits account. (1)
- PSP instructs the Eurosystem for funding of the user's digital euro holdings**. The PSP's reserves at the Eurosystem in the DESP DCAs are debited and the user's digital euro holdings in the DESP settlement ledger are credited. This is the **moment when digital euro is issued**. (2)
- The **user's digital euro holdings are reflected as a direct liability of the Eurosystem**. However, it's the PSP who knows the link between the funds and the identity of the user (3)
- The movements are reflected on the PSP's balance sheet as reduced assets (less reserves at the central bank) and reduced liabilities (as there are less deposits) for the same amount. (4) The 'balance sheets' of the digital euro user and of the Eurosystem are not affected.

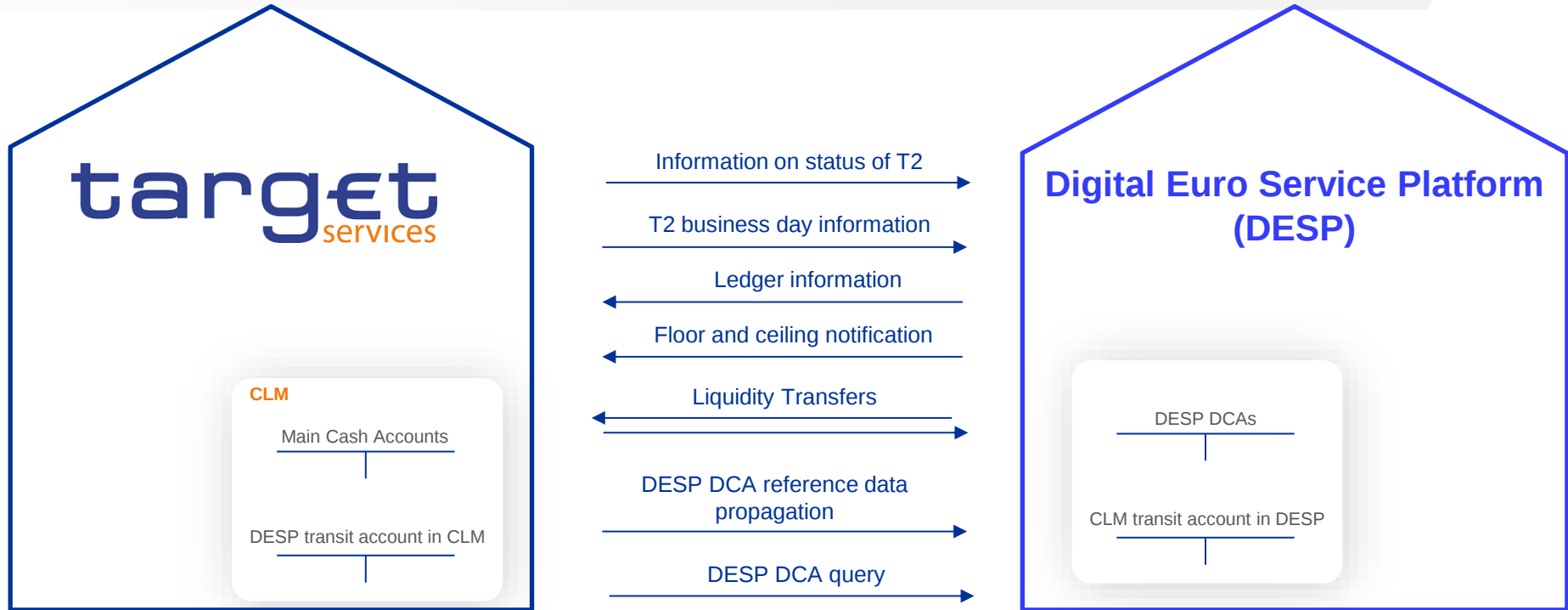
* Whereas the PSP knows the identity of the digital euro user and uses it for e.g. AML/CFT compliance, the Eurosystem as operator of the settlement ledger is not aware of the identity of the user.

** The DESP DCA can be either the DCA held directly by the PSP (being a DESP DCA Holder), or a 'third party' DCA that the PSP is authorised to use (via an Authorisation Link).

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Understanding TARGET-DESP interactions

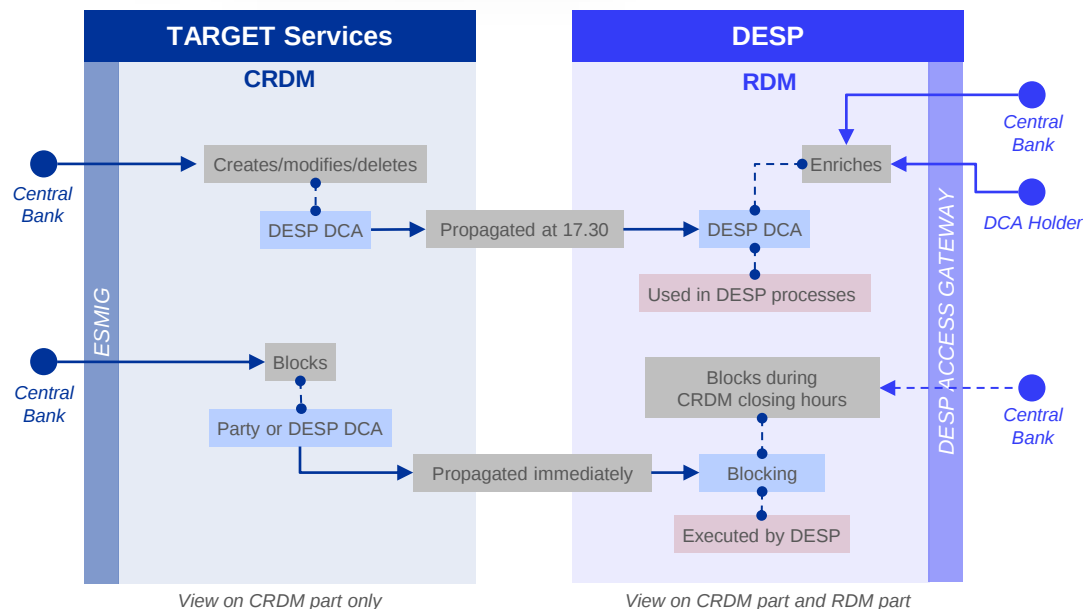
High level overview of interactions



Reference data management



DESP DCAs will be maintained in CRDM and propagated in DESP. Other reference data used by T2 or linked to DESP DCA will be maintained in DESP Reference Data Management (RDM) together with DESP-specific reference data.



DESP DCA creation/maintenance/deletion in CRDM

- DESP DCAs will be created, modified, deleted in **CRDM**
- DESP DCAs will be held by the party type **Payment Bank**
- **DESP DCAs related reference data will be propagated** from CRDM to DESP every business day at 17.30
- **Blocking of a party will block all its accounts including DESP DCAs**
- **Blocking of party and DESP DCAs will be immediately propagated to DESP**
- **Initial creation of DESP DCAs will be supported by Data Upload Tools**

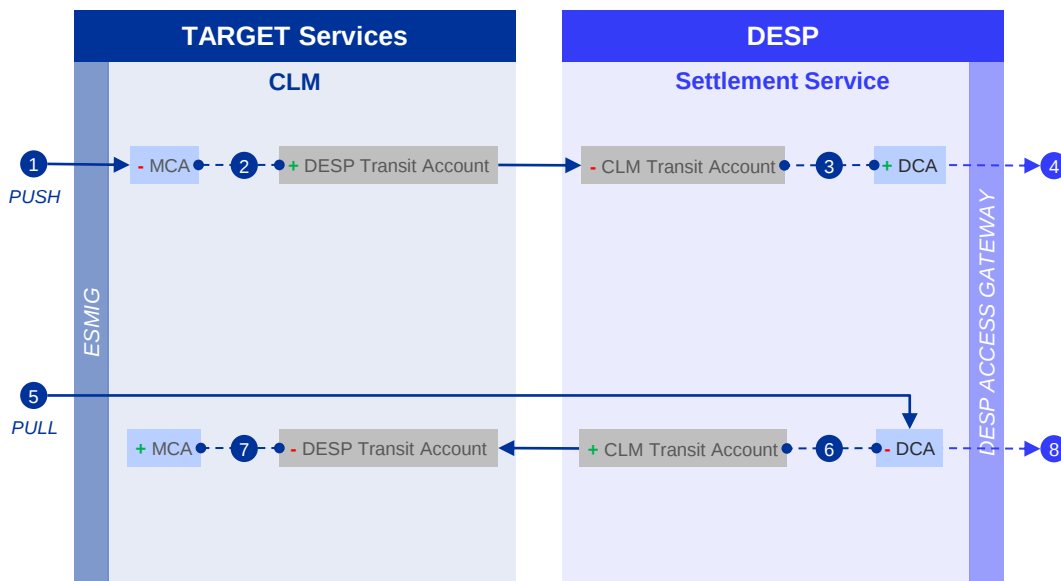
DESP DCA usability reference data in DESP RDM

- **Floor and Ceiling Rule-based LTs reference data** are relevant for T2 but **will be set-up in the DESP RDM**
- **Other reference data necessary for the enhanced usability of DESP DCAs** (e.g. **authorisation links, CMBs, notifications**) will be **maintained in DESP RDM**.

Immediate liquidity transfers



Liquidity transfers between CLM and DESP are initiated from CLM either via A2A or U2A (CLM GUI).



An **immediate liquidity transfer in PUSH mode** consists of the following process steps:

- 1) CLM user initiates an immediate PUSH liquidity transfer from an MCA to a DCA;
- 2) CLM debits the MCA by crediting the DESP Transit Account;
- 3) DESP credits the DCA by debiting the CLM Transit Account;
- 4) (optional) DESP notifies the DCA Holder about the credit.

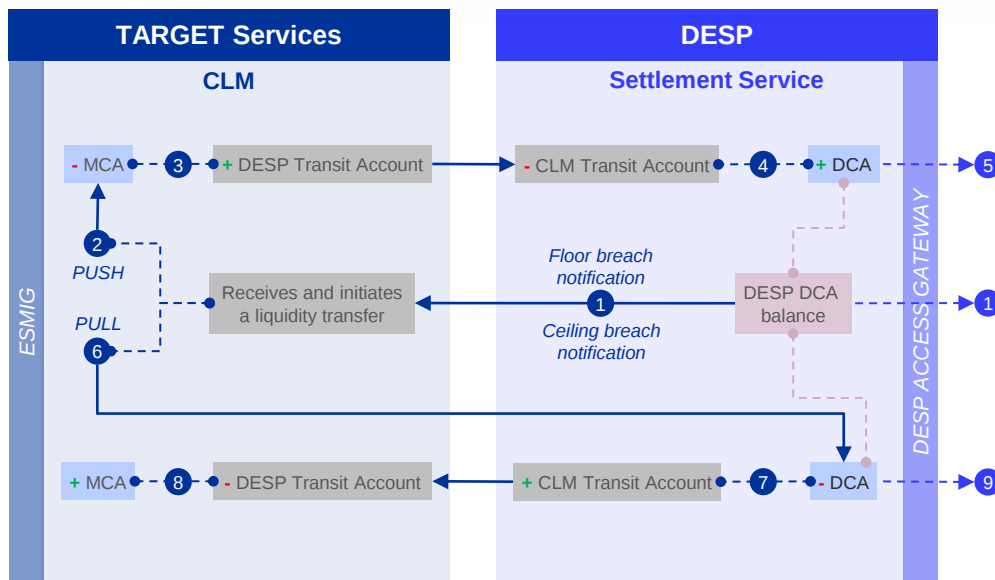
An **immediate liquidity transfer in PULL mode** consists of the following process steps:

- 5) CLM user initiates an immediate PULL liquidity transfer from a DCA to an MCA;
- 6) DESP debits the DCA by crediting the CLM Transit Account;
- 7) CLM credits the MCA by debiting the DESP Transit Account;
- 8) (optional) DESP notifies the DCA Holder about the debit.

Floor/ceiling rule-based liquidity transfers



As per the floor/ceiling reference data set up by the DCA Holder, DESP monitors the balance of a DESP DCA. Upon detecting a breach, DESP sends a breach notification to CLM, specifying the affected DCA and the target amount. This notification enables CLM to initiate a liquidity transfer between CLM and DESP.



1) As per the DCA Holders' floor/ceiling settings **DESP monitors the DCA balance**, upon a **floor breach from above** or a **ceiling breach from below** DESP sends a **notification for CLM to initiate** (DCA Holder is optionally notified about the breach):

A **floor rule-based PUSH** liquidity transfer:

- 2) **CLM initiates a PUSH** liquidity transfer from an MCA to a DESP DCA;
- 3) **CLM debits the MCA** by crediting the DESP Transit Account;
- 4) **DESP credits the DCA** by debiting the CLM Transit Account;
- 5) (optional) DESP notifies the DCA Holder about the credit.

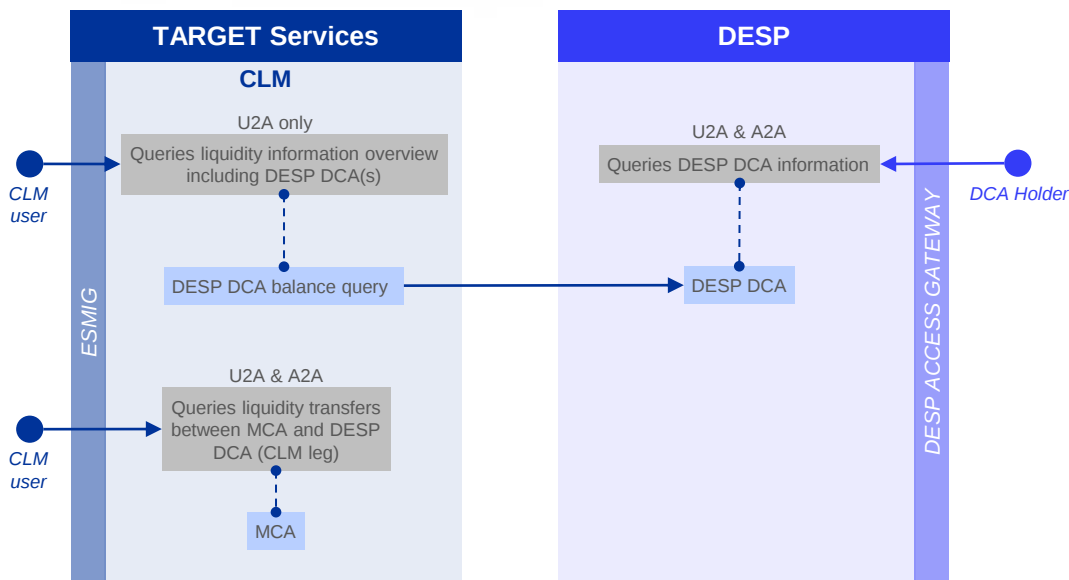
A **ceiling rule-based PULL** liquidity transfer:

- 6) **CLM initiates a PULL** liquidity transfer from a DCA to an MCA;
- 7) **DESP debits the DCA** by crediting the CLM Transit Account;
- 8) **CLM credits the MCA** by debiting the DESP Transit Account;
- 9) (optional) DESP notifies the DCA Holder about the debit.

Liquidity overview and queries



Since the DESP DCAs are managed by DESP, a variety of query capabilities are offered by either CLM or DESP.



CLM's query capabilities for CLM users

- DESP DCA balance and DESP DCA transactions with CLM are included in query and display screens of the CLM GUI (U2A)
- DESP DCAs are included in the Account Monitoring Group

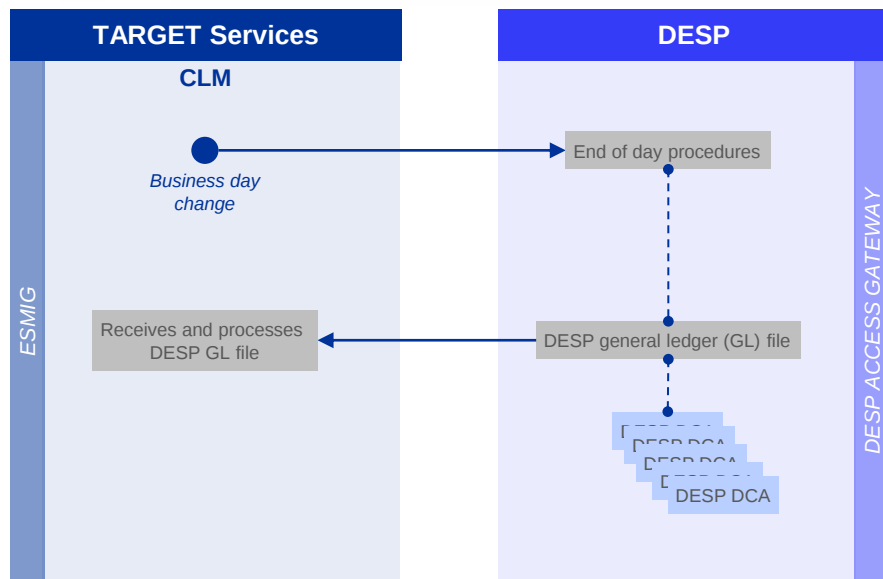
DESP's query capabilities for DCA Holders

- DESP provides a DCA Holder with the **full query scope via U2A and A2A on a 24/7/365 basis**, including:
 - DCA status query
 - CMB status query
 - Liquidity transfer status query
- Furthermore, DESP will provide different reporting capabilities.

General ledger file



The DESP will provide to CLM a DESP general ledger (GL) file DESP related to the DESP DCAs, which CLM receives and processes every T2 operating day.

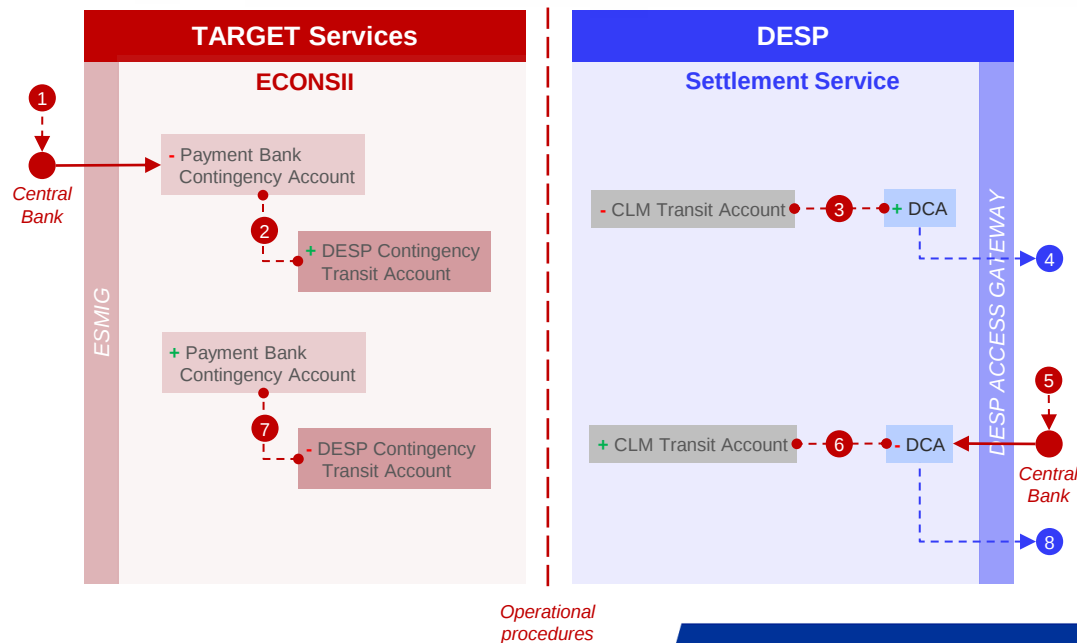


- The interactions between CLM and DESP relating to the **general ledger file** will be similar to the ones between CLM and other settlement services (RTGS, TIPS and T2S).
- **CLM will process the DESP general ledger file** in the same way as the general ledger file received from other settlement services including performing consistency checks, adding general ledger data for CLM cash accounts, minimum reserve calculation, etc.
- See page 22 for more details.

Contingency liquidity transfers



Contingency liquidity transfers between ECONSII and DESP will be possible under the contingency scenario with a non-operational T2 and an active ECONSII.



A **contingency liquidity transfer from ECONSII to DESP** consists of the following process steps:

- 1) **Payment Bank requests via its responsible CB a contingency liquidity transfer** from ECONSII to a DESP DCA;
- 2) **In ECONSII** the CB debits the **PB Contingency Account** by crediting the **DESP Contingency Transit Account**;
- 3) **In DESP** the liquidity transfer is **manually mirrored** whereby the **CB responsible of the CLM Transit Account credits the DCA** by debiting the **CLM Transit Account**;
- 4) (optional) **DESP notifies the DCA Holder about the credit.**

A **contingency liquidity transfer from DESP to ECONSII** consists of the following process steps:

- 5) **DCA Holder requests via its responsible CB a contingency liquidity transfer** from a DESP DCA to ECONSII;
- 6) **In DESP** the responsible CB debits the **DCA** by crediting the **CLM Transit Account**;
- 7) **In ECONSII** the liquidity transfer is **manually mirrored** whereby the **CB responsible of the DESP Contingency Transit Account credits the PB Contingency Account** by debiting the **DESP Contingency Transit Account**;
- 8) (optional) **DESP notifies the DCA Holder about the debit.**

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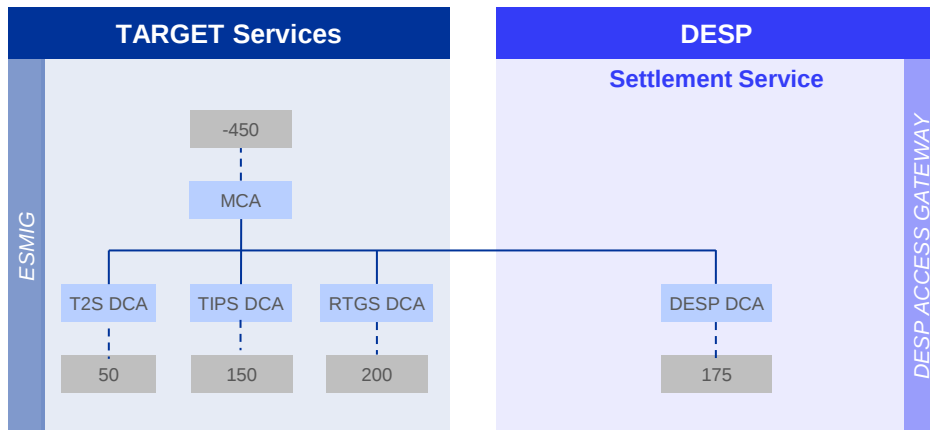
DESP DCA's impact on TARGET processes

Minimum / Excess Reserve and Automatic Marginal Lending



DESP DCAs will be considered for Minimum / Excess Reserve management and Automatic Marginal Lending

Example



All accounts are considered for the calculation of minimum reserve and AML

Overall balance = $-450 + 50 + 150 + 200 + 175 = 125$

AML will not be triggered as overall balance is positive

Account configuration

- DESP DCA allow to configure all attributes required by CLM for Reserve Management processing (like other TARGET Services accounts). It will be possible to specify whether the DESP DCA should be considered in the minimum reserve calculation or not.

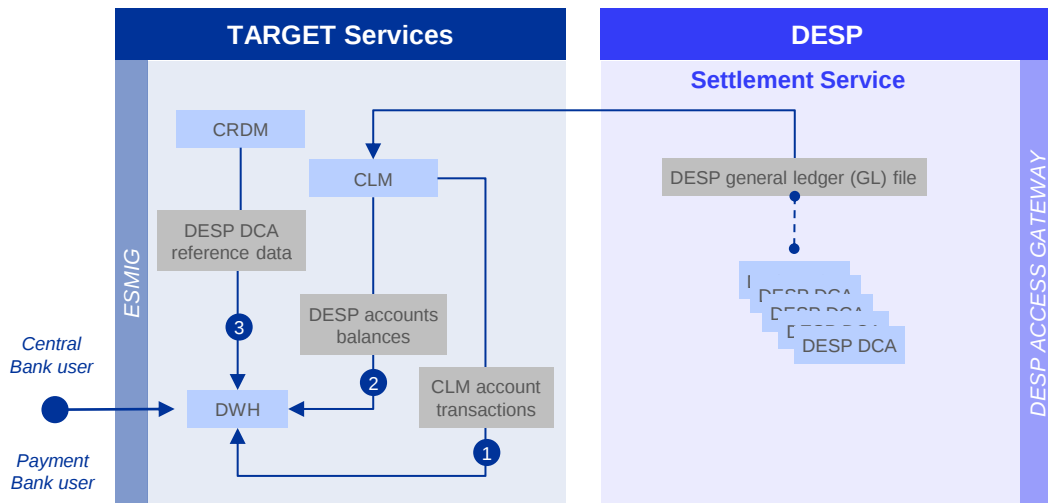
Balances

- DESP DCAs will be included in the minimum reserve and interest calculation. The calculation per leading CLM account holder remains the same.
- DESP DCAs will be included in the calculation of the overall balance per CLM account holder. Only in case the total balance per CLM account holder is negative an automatic marginal lending will take place during the EoD.

Datawarehouse



T2-T2S DWH will handle DESP DCA related information like TIPS DCA



Content

- T2-T2S DWH will include:

- 1) all transactions settled in CLM accounts with a leg in a DESP DCA,
- 2) all balances of all DESP accounts received from general ledger files (like for TIPS and T2S) and
- 3) DESP DCA reference data and other relevant associated data objects received from CRDM

Reports

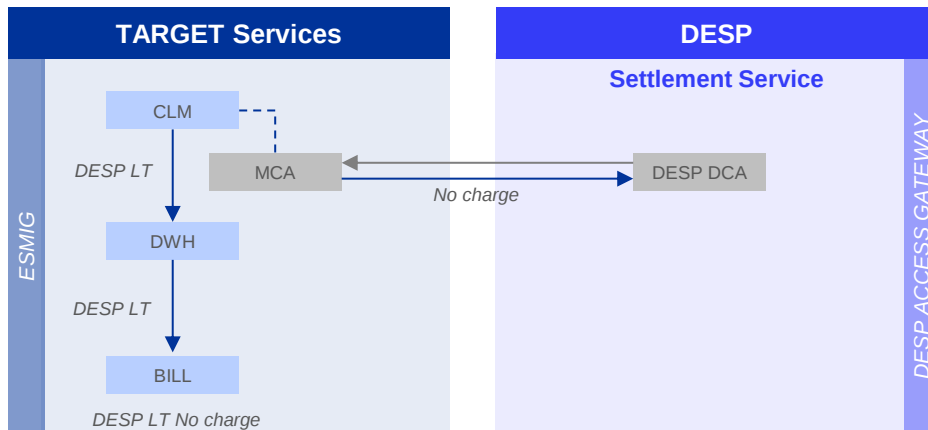
- Following pre-defined reports will be updated:
 - CBs only: CON01, TRN07, DXE01, DXE02, DXE04, DXE05
 - CBs and participants: STA01, STA02, TRN01
- The list of DWH data objects used for the creation of user-defined reports will be updated

Billing and Legal Archive



DESP DCAs have no impact on BILL and on LeA will include all transactions settled in T2 with a leg in a DESP DCA (also internal 4CB-AD€ communication layer messages).

Example



BILL (TARGET Services)

- **DESP DCAs have no impact on BILL** as Liquidity transfers from CLM to DESP will not be charged.

LeA

- **DESP DCAs have no impact on LeA for the users**
- **LeA will include all transactions settled in T2 with a leg in a DESP DCA**