



EUROPEAN CENTRAL BANK

EUROSYSTEM

# Funding and defunding functionalities

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Euro Retail Payments Board

1 September 2022

Digital euro project team



# Where do we stand?

Tentative - timing subject to change

**July 2021**  
Governing Council  
decision to launch  
investigation phase

Use case prioritisation  
Report on focus groups with  
citizens and merchants



Design options to moderate take-up  
Distribution model



Compensation model  
Access to ecosystem  
Value added services  
Advanced functionalities

Prototyping results



Selection of service provider(s)  
for possible project realisation  
phase

Decision making document  
including advice on potential  
issuance digital euro, its design  
and implementation plan



Q4-2021

Q1-2022

Q2-2022

Q3-2022

Q4-2022

Q1-2023

Q2-2023

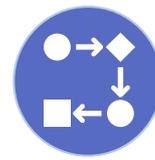
Q3-2023



Project team on-boarding  
Governance set-up



On-line/off-line availability  
Data privacy level  
Transfer mechanism



Settlement model  
Distribution of amount in circulation  
Role of intermediaries  
Integration and form factor  
**Funding and defunding**  
Prototype development



User requirements

Preparation for possible  
project realisation phase  
decision making

**September 2023**  
Governing Council  
decision to possibly launch  
realisation phase

# Objective of today's exchange



Present foreseen funding and defunding functionalities of the digital euro



Invite **your feedback on the minimum set of functionalities** identified by Eurosystem (followed by written procedure until 22 September) as input for Eurosystem preparations of final decisions on these functionalities by Governing Council in Q4 2022

# What this decision is about



The **set of basic technical functionalities for funding and defunding** the end users' digital euro positions that the Eurosystem will make available to intermediaries to:

- facilitate a **convenient and customisable experience** for the end user while ensuring the **applicability of tools** to control the amount of digital euro in circulation
- support a **successful uptake of the digital euro**: a smooth funding/defunding process is a key step in a smooth end user experience necessary to facilitate digital euro adoption and usage
- ease the use of the digital euro as a **means of payment** rather than store of value
- enable intermediaries to **offer additional services**



# Funding and defunding flows

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# Process flow: funding

**Funding:** the process of increasing the holdings on an account or wallet held by the end user. In the digital euro project context, this process involves converting end user provided liquidity (commercial bank money or bank notes) into retail CBDC holdings.



# Process flow: defunding

**Defunding:** the process of reducing the holdings on an account or wallet held by the end user. In the digital euro project context, this process involves converting end user provided retail CBDC holdings into commercial bank money or banknotes.



# Functionalities for the online position

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# Pure funding and defunding functionalities

## Manual funding / defunding

The end user **manually starts the conversion of commercial bank money or cash** into digital euro and vice versa

Only possibility available to the **unbanked** end users

## Automatic funding / defunding

A digital euro position is **automatically funded from / defunded to** a linked commercial bank money liquidity source

Triggered by an event defined by the end user (position going below/above a threshold) or time recurrent (e.g. fund at end of month)

Require access to **commercial bank money** and are activated **upon the end users' request** either upon onboarding or at a subsequent point in time

# Functionalities associated to a payment

## **Waterfall – incoming transaction**

It works as an event-driven **automatic defunding**, to ensure end users can receive a payment even if post-transaction position exceeds individual holding limit.

After the transaction is completed in digital euro at its full value\*, exceeding liquidity is **pushed to the linked end-user commercial bank money liquidity source**.

Financial stability and monetary policy considerations to avoid excessive digital euro holdings are acknowledged, while **user convenience is leveraged** as any incoming payment can be settled.

## **Reverse waterfall - outgoing transaction**

It works as an event-driven **automatic funding**, to ensure end users can make a payment even if its amount exceeds their current digital euro funds.

Additional liquidity is **pulled from the linked end user commercial bank money liquidity source**, then the transaction is completed in digital euro at its full value.

May come with a **cost in terms of transaction speed: rules and minimum requirements** to meet (including processing times) to be defined within the **digital euro scheme**.

\*This may imply short temporary deviations from the holding limit.

# Functionalities for the offline position

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# Funding and defunding the offline device

- Inherent differences with respect to the online position: **the offline digital euro device needs to be online for funding and defunding**, while not for transacting
- **Event-driven functionalities** would require online connectivity to reach the linked liquidity source
- It could be funded and defunded either **from/to the online digital euro position, commercial bank money or cash**



# Way forward and discussion

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# Conclusions



All functionalities part of the minimum set are to be implemented, so to ensure a **baseline homogenous payment experience** irrespective of the intermediary selected by the end user



Event driven functionalities should require the **end users' explicit consent**



Funding and defunding functionalities should be available on a **24/7/365 basis** and take place **instantly**



Both the Eurosystem and intermediaries are interested in an **efficient conversion process** between commercial and central bank money, also to ensure the **applicability of tools** to control the amount of digital euro in circulation

# Way forward

 **Further investigation** on aspects including transactions greater than the holding limit and semi-automatic functionalities for offline

 **Consultation of Eurosystem committees**

 **Outreach to external stakeholders**



 Finalization of Eurosystem views in Q4 2022 based on the outcome of Eurosystem committees' consultation, discussions with external stakeholders and further internal analysis

 Review of combined design decisions (“Bringing it all together”) in Q2 2023 and feedback by stakeholders on overall design prior to Governing Council decision making thereafter

# For feedback

We invite **reflections on all aspects of the analysis**, including the following questions:

- What are your views on the **pure funding and defunding functionalities** (manual and automatic)?
- What are your views on the **functionalities associated to a payment** (waterfall and reverse waterfall)?
- What is your feedback regarding the options for **funding and defunding the offline device**?
- What are your views on the **ease to implement** such functionalities on your side?

**Thank you**

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