Funding and defunding functionalities

Market Advisory Group

16/09/2022

Digital euro project team

Where do we stand?

Tentative - timing subject to change

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

Compensation model
Access to ecosystem
Value added services
Advanced functionalities

Prototyping results

Design options to moderate take-up
Distribution model

Use case prioritisation
Report on focus groups with citizens and merchants

July 2021
Governing Council decision to launch investigation phase

| Q4-2021 | Q1-2022 | Q2-2022 | Q3-2022 | Q4-2022 | Q1-2023 | Q2-2023 | Q3-2023 |

September 2023
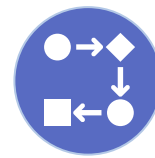Governing Council decision to possibly launch realisation phase

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

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) 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:
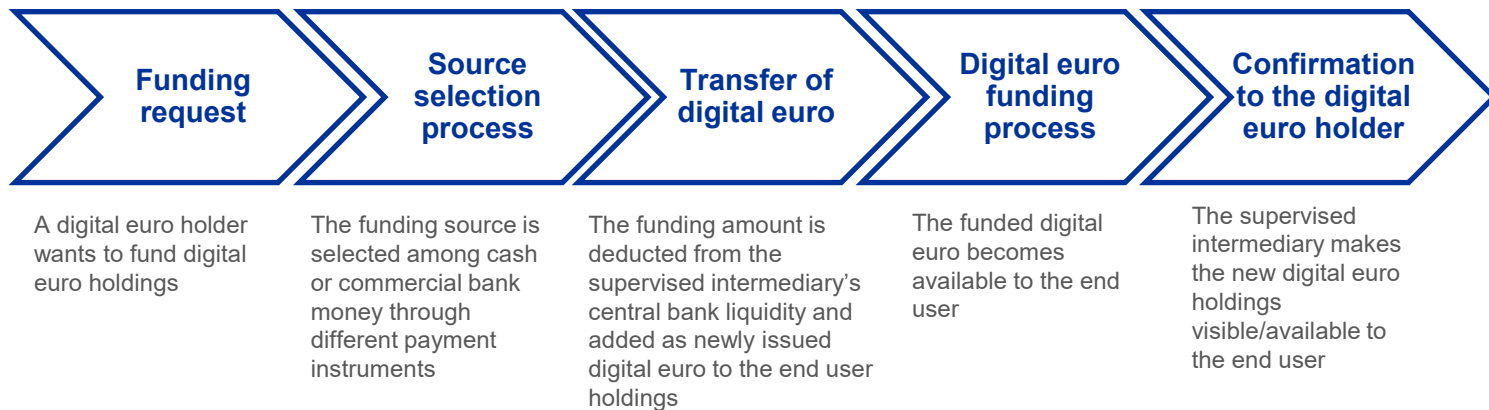
- facilitate a **convenient and customisable experience** for the end user while ensuring the **applicability of tools** to control the amount of digital euro in circulation

- 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**
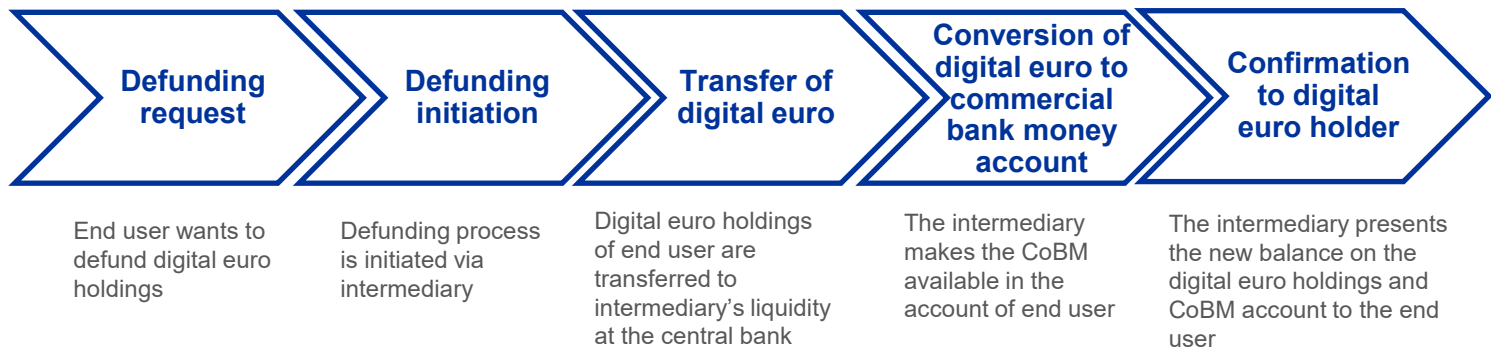
Funding and defunding flows

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.

Funding request	Source selection process	Transfer of digital euro	Digital euro funding process	Confirmation to the digital euro holder
A digital euro holder wants to fund digital euro holdings	The funding source is selected among cash or commercial bank money through different payment instruments	The funding amount is deducted from the supervised intermediary's central bank liquidity and added as newly issued digital euro to the end user holdings	The funded digital euro becomes available to the end user	The supervised intermediary makes the new digital euro holdings visible/available to the end user

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.

Defunding request	Defunding initiation	Transfer of digital euro	Conversion of digital euro to commercial bank money account	Confirmation to digital euro holder
End user wants to defund digital euro holdings	Defunding process is initiated via intermediary	Digital euro holdings of end user are transferred to intermediary's liquidity at the central bank	The intermediary makes the CoBM available in the account of end user	The intermediary presents the new balance on the digital euro holdings and CoBM account to the end user

Functionalities for the online position

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

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

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