



EUROPEAN CENTRAL BANK

EUROSYSTEM

Digital euro – our future money

Exhibitor stage – Sibos

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Evelien Witlox, Program Director, Digital euro project



What is digital money?



Liability of central bank

- i. **Cash:** physical form, to general public
- ii. **Central bank deposits:** digital form, limited access
- iii. **CBDC/digital euro:** Complement to cash and Central Bank deposits



Liability of a private entity

- i. Commercial bank money
- ii. E-money
- iii. Some 'stablecoins' that entail a claim/liability on an identifiable entity



Not a liability

- i. Crypto-assets

Majority of central banks are working on CBDC



- **More than 90%** of central banks are exploring CBDCs,
- **More than half** of the central banks develop CBDC or run concrete experiments,
- **More than two thirds** of central banks consider it likely or might possibly issue a retail CBDC in short or medium term.

Reasons behind the increased work on CBDC



The **emergence of crypto assets and the Covid-19 pandemic** accelerated the work on CBDCs.

In the advanced economics, **financial stability concerns** have become more important for central banks to deal with CBDCs.

CBDCs could **alleviate limited operating hours of current payment systems** and the **length of current transaction chains** according to central banks.

Source: 2021 BIS survey on central bank digital currencies (2022) of 81 central banks.

Why issue a digital euro?



The digital euro as **monetary anchor** would preserve public access to central bank money being **widely accessible to prospective users in all euro area countries**.



A digital euro would strengthen the **strategic autonomy** of the euro area by increasing the independence from non-European payment solutions and would increase **economic efficiency** as the (latent) competition from central bank money to private money providers can curb market-abusive behaviour.

Where do we stand?

Tentative - timing subject to change

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

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

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



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
Amount in circulation
Role of intermediaries
Integration and form factor
Prototype development



User requirements

Preparation for possible project realization phase decision making

September 2023
Governing Council decision to possibly launch realisation phase

Stakeholder engagement

Engagement with stakeholders to facilitate the **appropriate specification** and **implementation** of a digital euro:



Digital Euro Market Advisory Group (MAG)

- Market practitioner group established by the Eurosystem
- Aims to take account of the views of prospective distributors of a digital euro
- Attempts to tap market intelligence and professional expertise in the design stage
- **The MAG** will provide input on a strategic level for the product design and distribution

The Euro Retail Payments Board (ERPB)

- Forum for institutional dialogue on retail payments
- Will provide a broad assessment on digital euro design and distribution
- Both from the demand and supply sides of the retail payments ecosystem
- **The ERPB** will assess the preliminary design decisions from an industry perspective

The European Commission, European Parliament and Eurogroup

- Close coordination with the Eurosystem on design and business model decisions
- **The European institutions and policymakers** will also provide input/feedback on the analysis of design decisions

ECB Civil Society Seminars

- Seminars where ECB experts **present the work and exchange views** with representatives from European civil society organisations

Focus on privacy



Privacy is a **fundamental right**



Digital euro **public consultation** highlighted **privacy as a key concern of future users**



Focus group research on new digital payment methods & digital euro showed more nuanced views around privacy in payments



Full anonymity and full transparency to central bank are not to be pursued → **baseline scenario** is that limited data is **transparent to the intermediaries** for customer onboarding and AML/CFT purposes, as is the case for electronic payments today

Digital euro use cases

A digital euro use case describes a common payment scenario

- **Person-to-person** (P2P): a payment between two people
- **Consumer-to-business**: a payment for goods or services purchased in a **physical store** (point-of-sale payment) or online via **e-commerce**
- **Business initiated payments**: a payment from a firm to another firm (B2B) or to an individual (B2P, e.g., wages)
- **Payments to the government** (X2G, e.g., taxes) and **by the government** (G2X, e.g., allowances and subsidies)
- **Machine-initiated** (M2X): a fully automated payment initiated by a device and/or software based on predetermined conditions.

Foundational set up options for digital euro

OPTION 1

With peer-to-peer validation of offline transaction

- Peer-to-peer validation of offline transactions via secure hardware devices
- Privacy of low-value proximity payments within limits set by legislation



Closer to cash

*Its **technical feasibility** and associated **legislative framework** need to be **further assessed***

OPTION 2

Available online and validated by a third-party

- Third-party validation of online transactions
- Transparency of transaction data to intermediaries for AML/CTF purposes



Closer to digital age

*Solutions to **increase its resilience** to connectivity outages need to be **further investigated***

OPTION 3

With peer-to-peer validation of online payments

- Peer-to-peer validation of online transactions via secure devices
- Allows remote payments but transactions cannot be checked ex-ante



Experimental

*Experimental solutions, **unlikely to be ready** for the first release. Thus, **not further analysed** in this phase*

Exploring options beyond the baseline scenario

Online



- Customer checks during onboarding
- **Higher degree of privacy for low-value / low risk transactions**
- Implies simplified checks (e.g. specific wallet with lower requirements during onboarding)

Offline



- Customer checks during onboarding
- **Fully private offline transactions and holdings**, no transparency to intermediary or central bank
- **Only for proximity payments of lower value**



Higher-value transactions would remain subject to standard controls

Excessive use to be avoided by *design*

Price-based tools

(tiered) remuneration

Limit-based tools

Limits on individual holdings (with optional waterfall)

Limits on conversion into digital euro (in a defined short period of time)

Combination of both tools

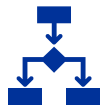
Design is likely to include a combination of tools, to be parameterized closer to digital euro issuance, even if not all necessarily active at the same time

Any **undesirable consequences** that may result from the issuance of digital euro for monetary policy, financial stability or the provision of services by financial intermediaries are **best mitigated by design**, pre-empting excessive uptake by means of quantity-and remuneration-based tools

Distributing digital euro to end users



Financial **intermediaries will play a key role in distributing** the digital euro



The Eurosystem is considering a **payment scheme approach** → developing a common rules-based framework for participants to develop their products

- Facilitates a **homogenous end-user experience** across the euro area and interoperability via standardisation
- Best positioned to ensure **pan euro area reach**
- Respects the **role of supervised intermediaries** and still offers room for **innovation**

Prototyping the digital euro distribution



Call for expression of interest launched in April 2022.



Collaborative exercise between the ECB and external companies to pay with a digital euro. External providers develop **prototypes user interfaces** against a digital euro back-end (Eurosystem).



Aim: test integration of digital euro back-end with front-end prototypes. Real payments will be simulated for specific **use cases**.



Results will be published and are expected in Q1 – 2023. The exercise serves as a **learning activity** and there are **no plans to re-use** the prototypes in the subsequent phases of the digital euro project.



Important: full ecosystem is included, to ensure that **European citizens** can pay at merchants with a digital euro. The selection ensures a representative sample of all the types of market players.



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DigitalEuro@ecb.europa.eu



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