



EUROPEAN CENTRAL BANK
EUROSYSTEM

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Results of the digital euro prototyping exercise and market research

Dear Chair, dear Irene,

I am pleased to inform you that later today we will publish the results of our digital euro prototyping exercise and our market research.

From July 2022 to February 2023 the European Central Bank (ECB) conducted a prototyping exercise to test how design choices for the digital euro could be technically implemented and integrated into the existing European payments landscape.¹ As I noted in my earlier letter to you on 17 October 2022, the prototyping work was a learning activity, a “lab experiment” carried out without using any real payment data. Therefore, no individual or aggregated payment data were shared with any of the selected participants. Moreover, throughout

¹ See letters addressed to you, as Chair of the Committee on Economic and Monetary Affairs, on the selection of external companies for joint prototyping of user interfaces for a digital euro, available at: https://www.ecb.europa.eu/pub/pdf/other/ecb.mepletter221018_Tinagli~e7966777f2.en.pdf; and on the publication of the technical onboarding package for digital euro prototyping, available at: https://www.ecb.europa.eu/pub/pdf/other/ecb.mepletter221207_Tinagli~8fbed00897.en.pdf.

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the process we remained committed to a transparent and open approach, going beyond EU rules on non-remunerated contracts.²

Today we will publish the results of this exercise,³ which included the development of a single back-end prototype (i.e. a settlement system, designed by the Eurosystem⁴) and five different front-end prototypes (i.e. user interfaces⁵). This exercise shows that it is possible to smoothly integrate the digital euro design choices into the existing payment landscape while leaving ample scope for innovative features and technologies. The findings also show that a digital euro, using independent designs, could theoretically work both online and offline.

In line with our commitment to a transparent and open approach, today we will also publish the full prototype application programming interface (API)⁶ specifications, which were developed in addition to the technical onboarding package that was published in December 2022.⁷ As the prototyping exercise was a learning experiment, the resulting prototypes were used as research tools and not as a basis for developing future payment solutions. Therefore, the prototypes presented will be discarded and not used further. The API specifications do not prejudice possible alternative designs, nor will the specific choices made for the prototypes affect any decision relating to a specific technology or functionality for the final digital euro design.

As part of the digital euro project investigation phase, the Eurosystem has also conducted market research.⁸ It aimed to obtain feedback from relevant interested parties and gain non-binding information on potential

² The call for expression of interest was published on 28 April 2022 on the ECB's website, available here: https://www.ecb.europa.eu/paym/digital_euro/investigation/profuse/shared/files/dedocs/ecb.dedocs220428.en.pdf?bee92bf1e894a3920421d55fea89b2be. The presentation delivered during the information session for front-end prototype providers on 18 July 2022 is available on the ECB's website: https://www.ecb.europa.eu/paym/digital_euro/investigation/profuse/shared/files/dedocs/ecb.dedocs220722.en.pdf; as are the questions and answers from that session: https://www.ecb.europa.eu/paym/digital_euro/investigation/profuse/shared/files/dedocs/ecb.dedocs220722_annex_1.en.pdf.

³ See https://www.ecb.europa.eu/pub/pdf/other/ecb.prototype_summary20230526~71d0b26d55.en.pdf

⁴ The back-end prototype was not intended to be the final design, but it was an experimental version to test and learn from.

⁵ Each front-end provider proposed user interfaces that were tailored to one of the five prioritised use cases for the digital euro, namely person-to-person payments conducted (i) online and (ii) offline; payments initiated in shops (iii) by the payer and (iv) by the payee; and (v) e-commerce payments. See *Call for expression of interest for digital euro front-end prototyping*, ECB, Frankfurt am Main, 28 April 2022, available at: https://www.ecb.europa.eu/paym/digital_euro/investigation/profuse/shared/files/dedocs/ecb.dedocs220428.en.pdf?bee92bf1e894a3920421d55fea89b2be.

⁶ An API is an interface between different applications that enables them to communicate with each other.

⁷ See *Documents for the digital euro prototyping exercise*, ECB, Frankfurt am Main, 7 December 2022, available at: <https://www.ecb.europa.eu/paym/intro/news/html/ecb.mipnews221207.en.html>.

⁸ Market research on possible technical solutions for a digital euro took place between 13 January and 17 February 2023. See *Market research on possible technical solutions for a digital euro*, ECB, Frankfurt am Main, 13 January 2023, available at: <https://www.ecb.europa.eu/paym/intro/news/html/ecb.mipnews230113.en.html>.

technical solutions for a digital euro. It covered twelve different technical components that may be needed to support a digital euro, addressing ways to deal with their development, maintenance, and operation. On 6 February 2023 the Eurosystem published a supplementary document providing answers to participants' questions, in order to facilitate a good reciprocal understanding of the concepts in the final submissions.⁹

Today we are publishing a report on the outcome of this market research.¹⁰ In it, we summarise the responses using various descriptive metrics but we do not intend for this report to imply that any of the solutions presented by the respondents are necessarily optimal or best-fit solutions for a digital euro. The feedback received has nevertheless helped the Eurosystem to better understand the current level of knowledge in the market and the existing experience in building solutions and identifying suitable technologies to potentially implement a digital euro. Participation in this market research exercise was entirely voluntary and this cohort of participants will therefore still be eligible for future procurement procedures related to a digital euro or any other procurement. Moreover, their involvement in this exercise does not imply pre-selection for, nor put them at a disadvantage in, any potential subsequent tender.

The findings of the prototyping exercise and our market research will serve as input for both the functional and technical design of a digital euro. These reports can be shared under embargo with ECON Members of the European Parliament.

Yours sincerely,

[signed]

Fabio Panetta

⁹ See *Digital euro market research – Answers to questions received*, ECB, Frankfurt am Main, February 2023, available at: https://www.ecb.europa.eu/paym/digital_euro/investigation/profuse/shared/files/dedocs/q_and_a_market_research.en.pdf.

¹⁰ See https://www.ecb.europa.eu/paym/digital_euro/investigation/profuse/shared/files/dedocs/ecb.dedocs230526.en.pdf