# Exploratory work

## The framework

**Holger Neuhaus**
Head of Division, ECB

# The framework for exploratory work

- ❑ **design principles**
- ❑ timeline
- ❑ solutions in scope
- ❑ envisioned settlement (timing, use cases, trial construct
  - escrow, end-of-day)

# Exploratory work design principles

Exploratory work will rely on the existing regulatory, functional and operational framework of TARGET Services (i.e., this is not a sandbox approach)

Trials will rely on the Eurosystem's T2 for ultimate settlement of the cash leg of transactions in central bank money (CeBM) with no changes to the current rules for access to CeBM (same participation as current TARGET Services)
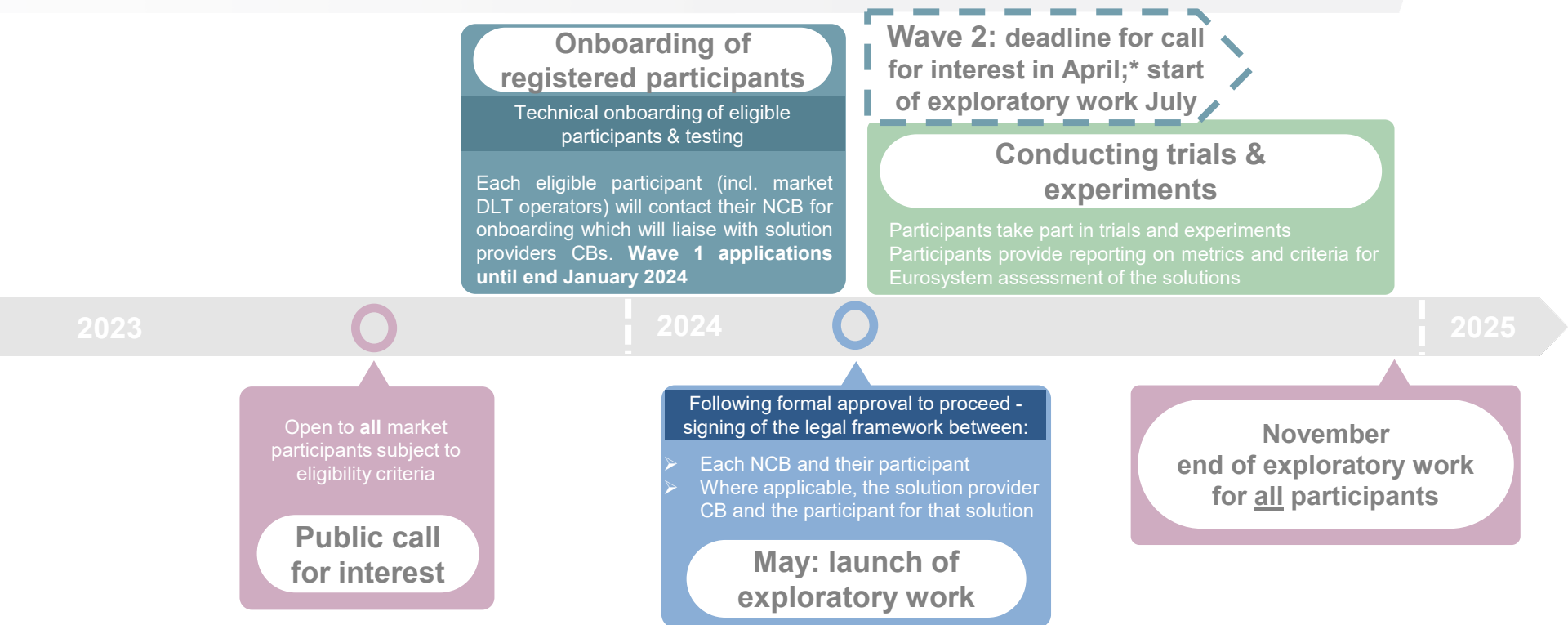
Exploratory work is planned to run from May 2024 to November 2024

N.B. The Eurosystem has <u>not</u> taken any implementation decision on any solution nor commits, through exploratory work, to doing so

# The framework for exploratory work

✓ design principles

❑ **timeline**

❑ solutions in scope

❑ envisioned settlement (timing, use cases, trial construct – escrow, end-of-day)

# Envisioned timeline for 2024 exploratory work

**Onboarding of registered participants**

Technical onboarding of eligible participants & testing

Each eligible participant (incl. market DLT operators) will contact their NCB for onboarding which will liaise with solution providers CBs. **Wave 1 applications until end January 2024**

**Wave 2: deadline for call for interest in April;\* start of exploratory work July**

**Conducting trials & experiments**

Participants take part in trials and experiments
Participants provide reporting on metrics and criteria for Eurosystem assessment of the solutions

**2023**

**2024**

**2025**

Open to **all** market participants subject to eligibility criteria

**Public call for interest**

Following formal approval to proceed - signing of the legal framework between:

➢ Each NCB and their participant
➢ Where applicable, the solution provider CB and the participant for that solution

**May: launch of exploratory work**

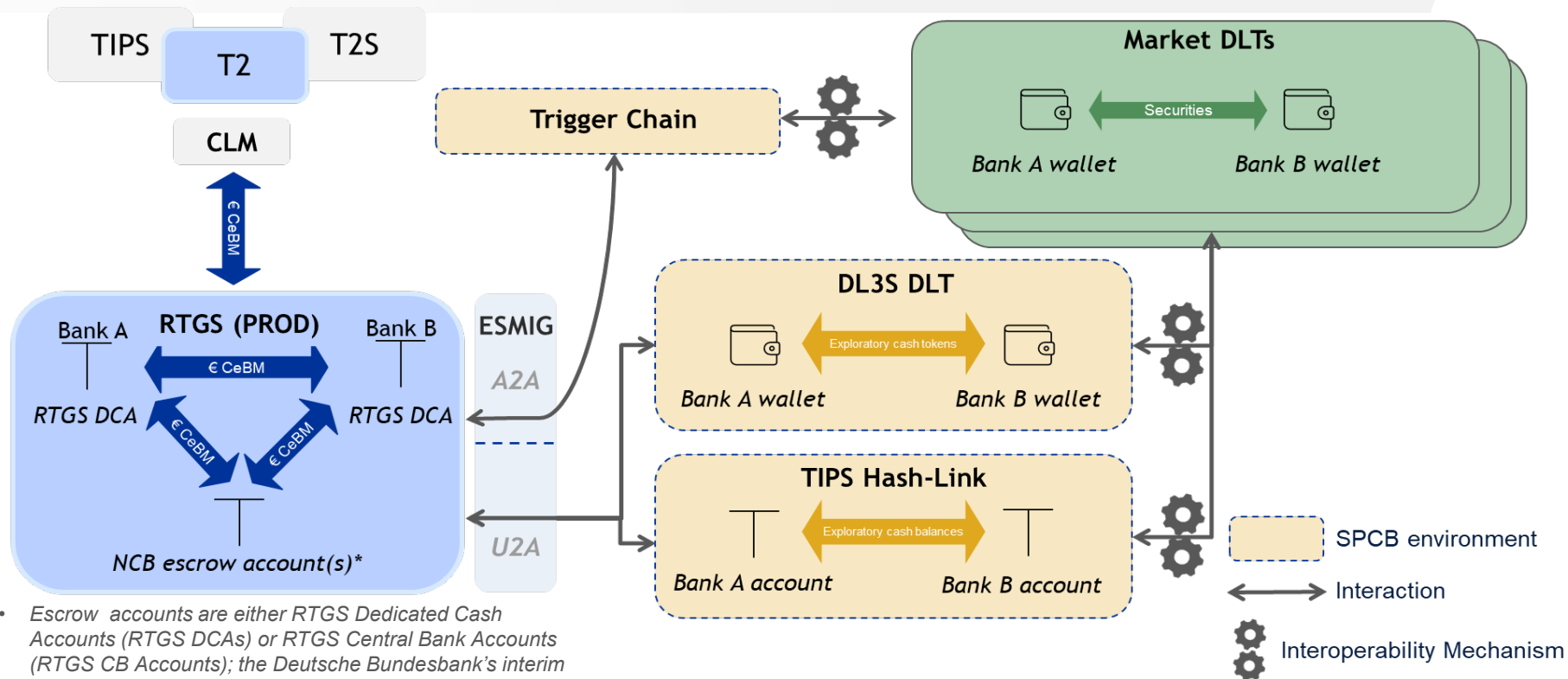**November end of exploratory work for all participants**

# The framework for exploratory work

- ✓ design principles

- ✓ timeline

- ❑  **solutions in scope**

- ❑   envisioned settlement (timing, use cases, trial construct – escrow, end-of-day)

# Solutions in scope for exploratory work

➢ The proposed Eurosystem exploratory work is focused on the **three interoperability-based solutions of the Solution Provider Central Banks** (**SPCBs**):

- **Trigger Solution** by Deutsche Bundesbank,

- **TIPS Hash Link** by Banca d'Italia

- **Full-DLT Interoperability** by Banque de France

➢ The Eurosystem will conduct, jointly with the market, trials (settlement of transactions with CeBM) and experiments (settlement of mock transactions)

# Interoperability solutions in trial design



- Escrow accounts are either RTGS Dedicated Cash Accounts (RTGS DCAs) or RTGS Central Bank Accounts (RTGS CB Accounts); the Deutsche Bundesbank's interim account is also a DCA

# The framework for exploratory work

✓ design principles

✓ timeline

✓ solutions in scope

❑  **envisioned settlement** (timing, use cases, trial construct

~ escrow, end-of-day)

# Envisioned use cases

**Main focus - DVP use cases**: securities settlement & lifecycle management - market DLT platforms can connect to the SPCB solutions for settlement of financial instruments available on those DLT platforms

➢ **Type of transactions** envisioned: DVP for **primary and secondary market operations**, other payments related to securities lifecycle e.g. coupon or dividend payments

➢ **Type of assets** envisioned: both **listed or unlisted** financial instruments according to MiFID available in market DLT platforms as either **native digital assets or tokenised assets** (e.g. representation of existing assets)

Additional use cases will be considered - exact setup will depend on other partners and will be subject to an assessment by the Eurosystem

➢ **PVP and other payment use cases**: cross-currency and cross-border payments in CeBM as well as automated wholesale interbank payments in CeBM (e.g. in relation to the use by commercial banks of deposit tokens with a need for CeBM wholesale settlement)

➢ Expectation that **participants will propose DvP and PvP use cases that explore the opportunities and benefits of new technologies and set up the necessary partnerships**, e.g. for native DLT assets, requires that market participants find issuers, investors and trading venues etc

# Settlement with the interoperability solutions
## *(conceptual view in potential steady state)*

➢ In a *potential* steady state where any of these solutions would be implemented:

    i.    In the Trigger Solution, CeBM settlement would occur with the (existing) RTGS liquidity pot

    ii.    In the TIPS Hash Link, CeBM settlement would occur with a new liquidity pot held on a TIPS-like platform set up by the Eurosystem

    iii.    In the Full-DLT Interoperability, CeBM settlement would occur with a new DLT-based liquidity pot held on a Eurosystem DLT platform

➢ In *potential* case of implementation:

    ➢ **the Eurosystem would seek to seamlessly integrate any of these solutions to its current infrastructure offering**, including for connectivity and  automated liquidity management - pending further analysis

    ➢ **Final CeBM settlement for the cash leg would be ensured by the Eurosystem** while relying on the market DLT operator to ensure finality of (DLT) securities transfer orders (current practice)

# *Temporary setup* for settlement in trials
## *(May to Nov 2024)*

➤ For the planned start of exploratory work in 2024, settlement in trials (with real transactions) would rely on *temporary construct* with limitations compared to a potential steady state:

- SPCBs would provide **solution specific connectivity** to the different environments (Trigger Solution, DL3S DLT platform, TIPS Hash Link platform)

- For the TIPS Hash Link and Full-DLT Interoperability solutions, an adhoc **escrow mechanism** would be set up in the RTGS, locking CeBM funds during the trial process (liquidity locked intraday only, e.g. several hours)

- Nonetheless, realistic technical processes will be trialled with all solutions on the basis of which they would be assessed

➤ The settlement finality of the asset leg depends on the rules applicable to the eligible market DLT operator.

The **temporary set up is specific to trials** and would not be pursued in a potential implementation

# Escrow mechanism to be supported by NCBs

Each local NCB sets up escrow accounts as a temporary construct to support their own eligible market participants conducting **trials with TIPS Hash Link and Full-DLT Interoperability solution**

- ➤ **Participants would fund the NCB escrow account at the beginning of the trial intraday process** (funding is made with full transfer of ownership to NCB)

- ➤ Exploratory liquidity is minted at the start of the trial day on 1:1 basis relative to the total amount held on NCB escrow accounts in T2

- ➤ **Defunding** occurs at the end of the trial day on net basis, or gross basis in exceptional cases, resulting in the **final CeBM settlement** of (net) balances during trials in TARGET Services

- ➤ Balance of the **escrow account is zeroed at the end of the trial day (15:30)**

**Liquidity used for trials should not be critical for participants to meet their obligations outside exploratory work** as in case of an incident it may not be transferred back to participants at end of day

- ➤ In case of an incident, funds will remain on the NCB's balance sheet and **will not be remunerated** (as funding of escrow accounts occurs with full transfer of ownership to NCBs)

# Availability of solutions during the execution phase

**Trials and experiments could be conducted on any business day of the TARGET Services calendar** during the May to November 2024 window:
- ➢ on a regular basis for trials
- ➢ on specific days for experiments

**Settlement under trials would occur on an intraday-basis only in T2 PROD**:
- ➢ 09:00 to 14:00 settlement window for the Trigger solution
- ➢ 10:00 to 14:00 settlement window for the TIPS Hash Link and Full-DLT Interoperability

**Settlement under trials will be subject to volumetric limits.** Value limits could be added by the Eurosystem if deemed necessary

# Opening hours of settlement during trials

Activities conducted on DL3S, TIPS Hash Link, Trigger Solution
**Activities in RTGS**

## Trigger Solution

## TIPS Hash-Link and Full-DLT Interoperability

**9:00**
**(Start of Trial Day)**

9:59

**14:00**
**(End of the Settlement Window)**

(End of Trial Day)
15:30

15:30
Contingency Window
17:00

Payment instructions sent to the Trigger Chain, **direct debits and credit transfers messages sent to the RTGS**

**payment return messages sent to RTGS (to empty RTGS interim account)**

**payment return messages sent to RTGS (in case of balance ≠ 0 on the interim account)**

**Liquidity Transfers (LTs) in RTGS (funding) Participants → NCBs**

SPCB creates exploratory liquidity in DL3S DLT and TIPS Hash Link

Settlement in DL3S DLT and TIPS Hash Link

SPCB removes (burns) exploratory liquidity in DL3S DLT and TIPS Hash Link
**LTs in RTGS (realignments) NCBs → NCBs
LTs in RTGS(defunding) NCBs → Participants**

**LTs in RTGS (realignments) NCBs → NCBs
LTs in RTGS (defunding) NCBs → Participants
(in case of balance ≠ 0 on the escrow accounts)**
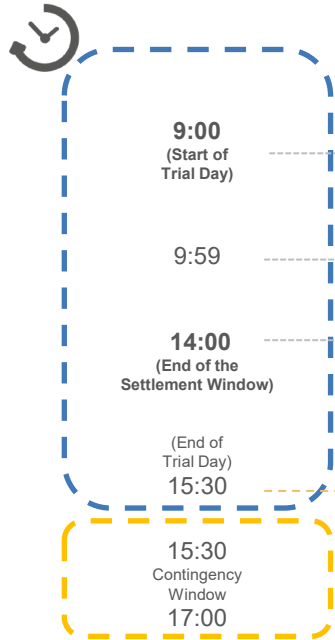
*\* Opening hours during experiments will be shorter for the Trigger Solution to align with the UTEST business day*

www.ecb.europa.eu ©

# The framework for exploratory work

- ✓ design principles

- ✓ timeline

- ✓ solutions in scope

- ✓ envisioned settlement (timing, use cases, trial construct

  ~ escrow, end-of-day)

*Next: who can participate & how to apply…*
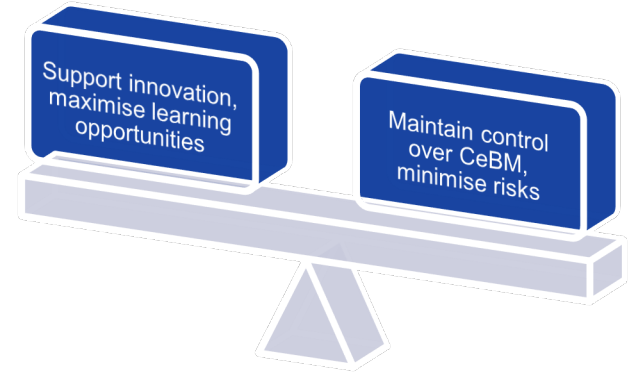
# Exploratory work

**Requirements for participation**

**Claudine O'Connor**
**Senior Market Infrastructure Expert, ECB**

# Eligibility for Eurosystem trials and experiments

- The Eurosystem will follow to the extent possible an open approach, within operational boundaries due to the lightweight nature of the trials.

- The policy for accessing central bank money will <u>not</u> change nor will it be modified for the purposes of the exploratory work.

- The eligibility criteria are for the purposes of the Eurosystem's exploratory work only and do not in any way pre-empt the formation of a new category of actor that could access TARGET Services in the future.

- ➢ Without prejudice to existing access rules to the TARGET Services and for the duration of the Eurosystem's exploratory work, there are **two types of participating actors** foreseen:

  eligible market participants and

  eligible market DLT operators

Support innovation, maximise learning opportunities

Maintain control over CeBM, minimise risks

# Who should reply to the call for interest?

The Eurosystem is seeking responses from two types of financial market stakeholders

1.  Eligible entities interested in providing DLT-based platforms for wholesale securities settlement relying on euro CeBM settlement of the cash leg. Eligible market DLT operators would connect to the Interoperability solutions to enable DvP transactions and payments related to securities lifecycle management to be settled in euro CeBM via the Interoperability solutions (including for example one-off payments such as coupon payments)

2.  Eligible entities interested in settling DLT-based wholesale transactions in euro CeBM using the Interoperability solutions. Exploratory work could include (i) DvP and securities settlement use cases (ii) cross-currency and cross-border payments in CeBM as well as (iii) automated wholesale interbank payments in CeBM (e.g. in relation to the use by commercial banks of deposit tokens with a need for CeBM wholesale settlement)

➢ Eligible participants would access the Interoperability solutions in both trials (settlement in production environments in euro CeBM) and experiments (mock settlement in test environments)

# Eligibility criteria*

1. **Eligible market participants** for participation in the Eurosystem's exploratory work would be any of the entities with access to T2, within the meaning of Article 4 and Article 7, Annex 1 Part I of the TARGET Guideline.

2. **Eligible market DLT operators** would be:

   a) Central Securities Depositories (CSDs), authorised under the CSDR, and NCB-run CSDs exempted from the CSDR authorisation procedure, operating a Securities Settlement System based on DLT or operating a DLT platform;

   b) Operators of a DLT settlement system or a DLT trading and settlement system as authorised under the DLT Pilot Regime Regulation (Regulation 2022/858);

   c) Credit institutions, investment firms, market operators and other licensed financial institutions operating a DLT platform, as duly licensed under CRD IV, MiFID II and/or other relevant national legal frameworks, subject to a case-by-case assessment to ensure proper risk management.

      o The eligible market DLT operator is an entity that, for the purpose of the Eurosystem's exploratory work, is responsible and liable towards eligible market participants for the activities occurring on the eligible market DLT platforms that they operate.

To note: for all categories, partnerships may be set up to jointly provide a DLT platform and related services to their participants. Outsourcing of provision of services, technical infrastructure and any of its operator responsibilities to third parties will be assessed by the national competent authorities

# Call for expression of interest – background

The **call for interest is open** for market participants and market DLT operators interested in exploratory work that meet our envisioned eligibility criteria

Participants submit a registration forms to their local NCB (i.e. NCB where accounts held in T2 or jurisdiction in which the market DLT operator is licensed) including background information on their eligibility, the scope of the foreseen trials and experiments and choice of solution(s) to be used

➢ Deadline 31 January 2024 for participants starting exploratory work in May 2024 (wave 1)

➢ Deadline 30 April 2024 for participants starting exploratory work in July 2024 (wave 2)

# Registration process (1/2)

- The Registration form contains 3 parts which must be completed in full and submitted prior to the respective deadline

  - ➤ before January 31 2024 for participation in wave 1
  - ➤ before April 30 2024 for participation in wave 2

  - o Registration form (part I) will be used to assess stakeholders' eligibility for participating in the Eurosystem exploratory work, please attach evidence /documentation to demonstrate eligibility
  - o Registration form (part II) is solution specific for each of the three interoperability solutions that stakeholders may wish to connect to for conducting exploratory work
  - o Registration form (part III) comprises a request for additional information on planned use cases for exploratory work including anticipated volumes

**N.B. If financial market stakeholders wish to participate both as market participant and as market DLT operator in the Eurosystem exploratory work, please submit separate registration forms**

# Registration process                     (2/2)

- Stakeholders interested in participating to wave 1 (start in May 2024) are invited to submit the registration form – parts I and II **as soon as possible to their local NCB**

- **Which NCB?** NCB of the jurisdiction where the market participant has opened its T2 (RTGS) account *or* NCB of the jurisdiction where the market DLT operator is licensed

- The Eurosystem will assess participants' eligibility based on part I of the form and additional documents provided by stakeholders.

- Following the successful completion of a preliminary check of eligibility, participants will be invited to commence the testing and onboarding process.

*Notes: (1) final confirmation of participants' eligibility will only be granted at a later stage, prior to commencement of the execution phase of the exploratory work, as this is subject to Governing Council approval; (2) entities subject to an on-going licensing process may be permitted to participate to Experiments (only) on a case-by-case basis and subject to the Eurosystem's discretion.*

# Onboarding and testing phase

Following an in-principle assessment of interested market participants' eligibility conducted after the submission of the registration form – parts I and II, the onboarding process will commence:

- December – February: mandatory testing activities phase 1 (connectivity and basic operational / functional tests) with eligible market participants and eligible market DLT operators

- February – April: following completion of phase 1 testing, mandatory testing activities phase 2 (full trial day rehearsal) and signing of the legal framework between eligible market participants, eligible market DLT operators and the Eurosystem

- May: start of exploratory work for wave 1

- June-July: additional onboarding window for participants to the second wave

- July: start of exploratory work for wave 2

# Summary - trials and experiment execution phase

The exploratory work is foreseen for a duration of six months from May to November 2024

The three interoperability solutions can be tested in parallel or sequentially

Participants can participate from May* (wave 1) or from July (wave 2)

Participants provide regular reporting on the results of trials and experiments to the Eurosystem

Trials are foreseen on a regular basis* with a limited settlement window (09:00 / 10:00 to 14:00)

Experiments can be executed on predefined days* with an experiment-specific framework

*subject to Eurosystem operational boundaries