

ICMA response to ECB Questionnaire on financial market stakeholders' potential interest in the Eurosystem providing EUR central bank money settlement of wholesale transactions in the payments, securities settlement and collateral management domains using new technologies such as Distributed Ledger Technology (DLT) – 28 June 2022

Introduction

ICMA welcomes the opportunity to respond to the ECB's *Questionnaire on financial market stakeholders' potential interest in the Eurosystem providing EUR central bank money settlement of wholesale transactions in the payments, securities settlement and collateral management domains using new technologies such as Distributed Ledger Technology (DLT)*.

ICMA promotes well-functioning cross-border capital markets, which are essential to fund sustainable economic growth. It is a not-for-profit membership association with offices in Zurich, London, Paris, Brussels, and Hong Kong, serving around 600 members in 65 jurisdictions globally. Its members include private and public sector issuers, banks and securities dealers, asset and fund managers, insurance companies, law firms, capital market infrastructure providers and central banks. ICMA provides industry-driven standards and recommendations, prioritising three core fixed income market areas: primary, secondary and repo and collateral, overlaid by the transformational cross-cutting themes of sustainable finance and Fintech and digitalisation. ICMA works with regulatory and governmental authorities, helping to ensure that financial regulation supports stable and efficient capital markets.

ICMA's diverse members have been exploring distributed ledger technology for bond issuance, trading, settlement, as well as securities financing transactions for a number of years. While the uptake of DLT in debt capital markets remains at very early stages, it has become evident that digital central bank money plays a key role to support the settlement of DLT-based securities and the digital transformation of capital markets more broadly (see also [ICMA's response to ESMA's Call for Evidence on the DLT pilot regime](#)). ICMA therefore welcomes the Eurosystem's initiative to gather feedback from the industry on this critically important topic.

ICMA's response to the questionnaire is based on views shared by members of its [Blockchain Bonds working group](#) and other ICMA constituencies, representing issuers, banks, investors, market infrastructures, and law firms.

Executive summary

Key aspects of ICMA's response can be summarised as follows:

- 1) ICMA considers a digital central bank money made available as a native digital asset issued by the Eurosystem, referred to hereafter as "wholesale digital Euro", to be a cornerstone to support wholesale payments, securities settlement and collateral management in a DLT environment, which enables next-generation automation and innovation through smart contracts, reduced friction and would also further support the EU's Capital Markets Union.
- 2) In conjunction with DLT-based securities, a wholesale digital Euro is considered to offer the following key benefits compared to the existing TARGET platform:
 - (i) Programmability: the ability to pre-programme and automate hitherto manual and inefficient processes during the lifecycle of a security provided a set of defined conditions are met. For example, cash movements for settlement, coupon payments, and other corporate actions.
 - (ii) Efficiency and consistency: Processing of both securities and cash transfer within an integrated DLT-based infrastructure is expected to increase both operational and capital efficiency, ensure settlement finality, reduce settlement fails and ultimately reduce funding costs, notably from a cross-border perspective.

- (iii) Reducing fragmentation: A single, EU-wide, digital infrastructure for payments to support securities settlement and collateral management is expected to reduce market fragmentation, which persists despite the development of TARGET Services, and increase attractiveness of the EU capital markets to international investors.
 - (iv) Accessibility: EUR central bank money is currently defined by its existence in TARGET accounts, linking it to a single, closed network operated by the Eurosystem. While the availability of a wholesale digital Euro (a native digital asset, i.e. in the form of a 'DLT token') for use on different DLT networks would expand the Euro's reach, it would require appropriate governance arrangements, notably in relation to distribution, risk management and oversight, amongst others.
 - (v) Competitiveness: Future-proofing the role of EUR central bank money in light of the proliferation of private digital cash such as stablecoins, which may give rise to further fragmentation in wholesale payments, securities settlement and collateral management.
- 3) Time horizon: ICMA views a wholesale digital Euro as a key requirement and end state in the long term (more than 5 years). Its development should be analysed, prepared, and resourced accordingly in the short term to pave the way for the digital transformation of capital markets. A 'trigger solution' for wholesale payments through TARGET Services for DLT-based securities settlement and collateral management is not deemed a suitable alternative by many ICMA members, in particular from an investor's perspective. A key concern is that costs for an interim 'trigger solution' will adversely impact funding of a wholesale digital Euro.
 - 4) The potential risks and ramifications of a wholesale digital Euro across the financial system warrant further investigations, including:
 - (i) Design and characteristics of a wholesale digital Euro, implications for bank funding, market functioning, monetary policy transmission, financial stability, privacy and data protection, as well as scalability and environmental aspects of DLT validation mechanisms.
 - (ii) Interoperability between a wholesale digital Euro and retail digital Euro, private and public blockchains, fungibility with conventional central bank money and interoperability with non-Euro currencies, including potential lessons from cross-border initiatives such as the multiple CBDC bridge (mCBDC) project involving the BIS and other central banks.
 - (iii) Cross-border consistency: ICMA notes that central banks globally have adopted different definitions of central bank digital currency, for example, the use of DLT being a criterion for some but not for others. ICMA would welcome a consistent approach, in particular from a cross-border capital markets perspective.
 - (iv) Technology risks and mitigation of single point of failure scenarios, including an implementation roadmap to deploy a wholesale digital Euro into capital markets safely, effectively and without causing disruption.
 - (v) Legal and regulatory aspects which affect directly (eg settlement finality) or indirectly (eg regulatory treatment of digital (DLT-based) securities across EU member states) the use of a wholesale digital Euro for payments, securities settlement and collateral management.
 - 5) Governance will be critical to the success of a wholesale digital Euro. ICMA recommends the creation of a dedicated working group, bringing together ECB and market participants across the spectrum of capital markets, to develop a roadmap, provide technical input into design considerations and operating model of a wholesale digital Euro.
 - 6) Decision on next steps: In light of the rapid evolution of technology and emergence of stablecoins, ICMA members strongly advocate for the ECB to reach a decision on next steps as a matter of urgency to enable the industry to allocate resources accordingly. While ICMA understands that making a final decision may require more time, any clarity on the avenues that may not be considered at this stage would equally be welcome in the interim.

ICMA's responses to the individual questions can be found below. Should you wish to discuss further, please don't hesitate to contact Gabriel Callsen, Director, Market Practice and Regulatory Policy (gabriel.callsen@icmagroup.org).



EUROPEAN CENTRAL BANK
EUROSYSTEM

MARKET INFRASTRUCTURE AND PAYMENTS COMMITTEE (MIPC)

ECB-UNRESTRICTED

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0. Introduction and background

The Eurosystem closely monitors market developments regarding the use of innovative technologies in the field of market infrastructures for wholesale payments and securities settlement. The purpose of this questionnaire is to collect market feedback / views on (a) whether European financial market stakeholders would in general be interested in the Eurosystem providing digital central bank money (EUR central bank money) for the settlement of wholesale transactions in euro (e.g. two-leg wholesale Delivery-versus-Payment transactions and Payment-versus-Payment transactions), based on new technologies such as Distributed Ledger Technologies (DLT), (b) what could be the financial market stakeholders' needs / use cases for using such new technologies, (c) what might be the potential merits for financial market stakeholders and for the economy as a whole, if the Eurosystem were to apply such new technologies in the future, and (d) what would in principle be required for making the identified use cases work in the context of the Eurosystem's TARGET Services.

The questionnaire is sent by the Banque de France to a number of financial market industry associations in France. The Banque de France invites each association to share this questionnaire with its individual member institutions in view of seeking their input.

Feedback is expected to be provided by experts of the industry associations and their individual members with knowledge and experience in both the technology and business aspects of the functions involved in financial transactions and financial infrastructures. The terms used in or related to the questionnaire are explained in the glossary appended in the questionnaire.

Responding financial market industry associations are asked to convey a summary view of their constituency / membership and, in addition, to share with the Banque de France individual feedback by their members on the questions below. Respondents may report diverse views from their members, whereby explanations of the reasons behind the different views will be useful. Respondents are asked to indicate if the response(s) or part of it should be treated confidentially.

The Eurosystem will carefully assess respondents' feedback when analysing further what new technologies, like DLT, might be considered at some stage in the future.

Responses are asked by **28 June at the latest** and should be returned to Banque de France, namely to:

- Pierre-Dominique Renard (pierre-dominique.renard.external@banque-france.fr),
- Victorien Goldscheider (victorien.goldscheider.external@banque-france.fr) and
- Matthieu Herbeau (matthieu.herbeau.external@banque-france.fr)

Please, indicate if the response(s) or part of it should be treated confidentially.

In case of questions, please contact Banque de France's team mentioned above:

1. Questions

A. Identifying and understanding in general, from your financial market stakeholder's point of view, market / industry uptake for the settlement of wholesale transactions that uses new technologies, such as DLT

1. Do you in general expect a significant financial industry uptake regarding the use of new technologies, in particular distributed ledger technologies (DLT), for the purpose of settling wholesale financial transactions? Y/N?

ICMA response: Yes

2. If "Yes", what might be the key drivers for that? Please elaborate.

ICMA response:

The use of DLT to issue, trade, settle and distribute securities offers significant potential to transform capital markets, with a view to better servicing the real economy. Generally, expected benefits include:

- Increased operational efficiency by automating certain functions such as reconciliations between parties in the transaction chain, as well as payments.
- Enhanced auditability, by providing an end-to-end audit trail of securities transactions in a secure, immutable environment.
- Improved market transparency (dependent on use and configuration of DLT, eg what type of information is recorded and whether it is publicly accessible or not).
- Reduced counterparty risk by shortening settlement cycle, if desired.
- In the long term, reduced funding costs as a result of a faster, more efficient settlement.
- Foundation enabling further product and process innovation that will support and advance the above benefits.

However, the uptake of DLT will depend on a range of factors, including the type of instruments (eg bonds, commercial paper, Schuldschein) issuance method (eg auction, syndication), current market practice and settlement cycle (eg T+5 or more), expected benefits, legal and regulatory requirements, and the level of maturity of capital market(s).

In an industry as highly regulated as capital markets, the key benefits from DLT are expected to arise from connecting stakeholders and synchronising communication and data exchange between all relevant parties through an integrated, DLT-based platform. However, the benefits should not be attributed to the distributed nature of DLT in isolation, but in conjunction with the centralised nature and vertical integration of processes of any new infrastructure used.

3. What stages and time horizon do you generally anticipate for such uptake to happen? Please elaborate.

ICMA response:

While DLT has further matured, its uptake in bond markets is dependent on a number of factors, including legal, regulatory, operational and technological aspects and it is therefore difficult to provide a precise time horizon. The availability of a digital wholesale Euro can be considered a tipping point which would facilitate and accelerate the transition from individual proof-of-concepts and experimentation towards a DLT-based ecosystem. Notwithstanding other potential challenges, a transition to a DLT-based ecosystem appears to be realistic within the next five to 10 years.

4. In your / your members' view, which type of market segments / assets / financial transactions / participants might be most affected by the use of new technologies, such as DLT? Please elaborate on / substantiate your views and expectations.

ICMA response:

ICMA's response focuses on points most relevant to international debt capital markets and its constituents. Generally, DLT can be used to streamline the end-to-end issuance, trading, settlement and distribution of debt securities and related processes, benefitting issuers, banks, and investors alike.

From an investor's perspective, additional areas include (i) the use of tokenised DLT securities as fund assets, benefiting from DLT post-trade processes, (ii) the distribution of fund units, and (iii) a positive impact on fund assets, notably regarding the fungibility of collateral. In all cases, the advantages of DLT are expected to be realised in post-trade processing.

From a market infrastructure's perspective, the use of DLT could further broaden the range of tradable instruments and could be relevant for certain types of assets currently not listed on FMIs, or very often barely transferable or not transferable at all. Adoption timings of DLT are also likely to vary across (i) those markets well supported by existing market infrastructures (MIs), and (ii) markets less supported by such MIs, alternative and private markets, in particular those markets characterised by the absence or lower levels of automation / digitalisation.

5. In your / your members' view, which part(s) of the financial transaction value chain might be most affected by the use of new technologies, such as DLT? Please distinguish between payments and securities and elaborate on / substantiate your views and expectations.

ICMA response:

Generally, securities post-trade processes and related stakeholders are expected to be affected the most by new technologies such as DLT. As regards securities settlement, middle and back-office functions that require manual intervention such as reconciliations, assets custody, asset servicing and related services are likely to be impacted and could be accelerated or potentially made redundant.

6. If you / your members do not expect a significant financial industry uptake regarding the use of new technologies, in particular distributed ledger technologies (DLT), for the purpose of settling wholesale financial transactions, what could, in your view, be the key challenges and/or impediments and/or barriers for new technologies to take up, and why? Please elaborate on / substantiate your views and expectations.

ICMA response:

ICMA members expect uptake of DLT in bond markets, however, a number of challenges will need to be resolved, including;

- (i) Operational: Integration of DLT networks with legacy systems and interoperability more broadly. As pointed out in the [ECB report on The use of DLT in post-trade processes](#) (published in April 2021) interoperability is necessary for the implementation of new financial market technologies that are characterised by interdependencies and network effects.
- (ii) Legal and regulatory fragmentation in relation to the treatment of digital securities registered by CSDs and private or public blockchains across EU member states' jurisdictions and beyond. As regards public blockchains, challenges include how to identify a bondholder's interest in bonds and which laws apply in a scenario where a custodian, and its related entities, maintain records in a distributed ledger across multiple jurisdictions.
- (iii) Absence of a credible digital currency to support atomic ie instant settlement, process automation and development of innovative products.

7. In your / your members' view, would the provision of a dedicated settlement arrangement in EUR central bank money based on new technologies enhance the adoption of new use cases and help expanding implementation efforts by your financial market stakeholder's?

ICMA response:

As outlined in [ICMA's response to ESMA's Call for Evidence on the DLT pilot regime](#) (March 2022), there is a need for credible digital currencies available on DLT to enable on-chain delivery versus payment (DvP) mechanisms and fully realise the expected benefits of DLT-based securities. Adoption of new use cases and wider implementation is expected to remain limited without availability of a wholesale digital Euro.

B. Identifying and understanding what is / might be your / your member's concrete interest in EUR central bank money settlement of financial transactions that uses new technologies, such as DLT, and what would be your / your members' concrete and potential new use cases

8. What are the use cases / transaction types for which you / your members use EUR central bank money for settling the cash leg of financial transactions today? (cash leg of wholesale securities transactions, cash leg of wholesale FX transactions, cash leg of wholesale money market transactions, wholesale funding transactions / settlement of positions of ancillary large value or retail payment systems, settlement of wholesale clean payments, margin calls, etc.).

ICMA response:

Among ICMA's members are many firms who actively deal in wholesale securities and securities financing transactions within the EU, namely investment banks and issuers, securities dealers and brokers, regional and commercial banks, private banks, and asset managers. Members also include trading venues such as recognised stock exchanges and multilateral trading facilities, and central counterparties, clearing and/or settlement systems facilitating wholesale securities and securities financing transactions. The use of EUR central bank money is widely used for securities settlement, albeit not (yet) for settlement of Eurobonds at ICSDs (Euroclear Bank, Clearstream Luxembourg).

9. What are the use cases for which you / your members do not use EUR central bank money for settling the cash leg of financial transactions today? Why is this so? Please elaborate.

ICMA response:

EUR central bank money is currently not (yet) used for settlement of Eurobond transactions at ICSDs for historical and practical reasons.

Several ICMA members have been involved in recent digital ie DLT-based bond or securities financing pilot transactions involving the transfer of asset and/or cash legs in a DLT environment. As testing has progressed, pilots have generally evolved from settling the cash leg via traditional means (ie 'off-chain', with fiat currency) toward the use of other payment forms, such as in the form of tokenised commercial bank money or stablecoins (for example backed by commercial bank money or reserves held with a central bank).

10. If you / your members use settlement assets other than EUR central bank money for settling the cash leg of financial transactions today, what is your / your members' concrete level of interest in / need for settling these transactions in EUR central bank money at some point in the future? Please elaborate on / substantiate your interest/need.

ICMA response:

See ICMA's response to questions 2 and 7.

11. What is your / your members' concrete interest in / need for using new technologies for the settlement of your financial transactions in EUR central bank money? Do you distinguish between short-, medium- and long-term interest/need? Please elaborate on / substantiate your interest/needs.

ICMA response:

ICMA considers a wholesale digital Euro (digital central bank money made available as a native digital asset) issued by the Eurosystem to be a cornerstone to support wholesale payments, securities settlement and collateral management in a DLT environment, which enables next generation automation and innovation through smart contracts, reduced friction and would also further the EU's Capital Markets Union.

Several ICMA members have already conducted pilots with the use of DLT for the issuance, trading, and settlement of securities and securities financing (see ICMA's [New FinTech applications in bond markets](#) compendium). The forms of digital cash utilised in such transactions vary and range from tokenised commercial bank money or e-money, to stablecoins backed by commercial bank money or central bank reserves to wholesale CBDC, for example, in the context of [Project Helvetia](#) and [Project Jura](#) involving the BIS Innovation Hub, central banks and private-sector stakeholders.

Demand for digital cash is expected to increase within the scope of the EU's DLT Pilot Regime (DLT PR), due to take effect in March 2023. The DLT PR includes a temporary exception to settle transactions with commercial bank money or 'e-money tokens' when central bank money on a DLT network is not available. However, the absence of central bank money on a DLT limits testing to settlement methods that are generally considered interim solutions.

Ideally, market participants would prefer to settle transactions in central bank money and experiment accordingly. ICMA agrees with the BIS's views that the use of a CBDC, rather than facilities hosted by commercial banks or other service providers, could help reduce counterparty credit and liquidity risks (BIS [CBDC report](#), p.8. 2018). As highlighted within the BIS's 2022 Annual Economic Report '[The future monetary system](#)' (p.98), by relying on central bank money, wholesale CBDCs would benefit from the stability and singleness of the currency that central banks provide.

12. What concrete and potential new use cases do you / your members perceive / expect emerging for EUR central bank money settlement due to market developments, in particular due to the potential uptake of the use of new technologies, such as DLT, in and by the market? Please, list these use cases and elaborate on them

ICMA response:

ICMA's [New FinTech applications in bond markets](#) compendium comprises over 80 examples of digital bond and securities financing testing and pilot transactions utilising mostly DLT. The use of DLT has emerged across different stages of the securities lifecycle, including issuance, trading, clearing and settlement. From a European perspective, key drivers for DLT transactions in wholesale markets include operational efficiency and associated cost reductions, increased liquidity and collateral mobility, enhanced market transparency as well as product innovation to service the real economy more effectively.

13. Based on the concrete and potential new use cases you / your members expect emerging for EUR central bank money settlement that uses new technologies/ DLT, would you / your members expect such new use cases to emerge independently of each other in different parts of the financial value chain (e.g. different solutions / DLT platforms for trading than for settlement) OR would you expect such use cases to rely on the same integrated infrastructure (e.g. trading, reconciliation / matching, clearing and settlement via a single DLT platform or protocol)?

ICMA response:

In light of the interconnectedness of financial transactions (eg funding of securities sale and purchase transactions through repo and collateral markets, associated swap transactions) and network effects in financial markets, it is expected that processing the payment leg for securities settlement and transferring collateral by means of a wholesale digital Euro will enable and accelerate new use cases and pave the way for the transition to a digital, DLT-based ecosystem within the EU. However, different public and private infrastructure initiatives have emerged, and a critical requirement is to enable interoperability within the emerging DLT-based ecosystem.

In this regard, ICMA is working with its diverse membership on two key initiatives to support automation and interoperability in capital markets: (i) A common data dictionary for bond issuance to allow full life cycle consistency in the transfer of securities; and the (ii) Common Domain Model (CDM) for repo and bonds, which enables IT systems including DLT-based infrastructures to 'speak the same language' through a digital, unambiguous representation of repo and bond transactions. Both initiatives are technology agnostic and aim to support interoperability not only between internal, external or vendor systems but also new technologies such as DLT. See further background in ICMA's [Quarterly Report Q2 2022](#), on p. 31 and p. 51 respectively.

14. If you / your member consider using new technologies such as DLT for the settlement of financial transactions at some stage in the future, would you consider using other settlement assets (e.g. stable coins or commercial bank money) for the cash leg in the absence of an appropriate dedicated settlement arrangement in EUR central bank money?

ICMA response:

See ICMA's response to question 11.

15. What market developments would make you / your members consider using a dedicated settlement arrangement in EUR central bank money based on new technologies for the settlement of financial transactions at some point in the future that are not settled in EUR central bank money today? Please elaborate.

ICMA response:

See ICMA's response to question 11.

C. Identifying and understanding, from your financial market stakeholder's point of view, the possible merits and potential challenges of using new technologies, such as DLT, for EUR central bank money settlement of existing and potential new use cases (as identified in B.) at some point in the future

16. In your / your members' view, what might be the potential / possible benefits for (a) financial market stakeholders; and (b) the economy as a whole of using new technologies, such as DLT, for EUR central bank money settlement for existing and potential new use cases? If your / your members' answers differ depending on the use case, please elaborate on / substantiate your answers accordingly.

ICMA response:

See ICMA's response to questions 2 and 11.

17. In your / your members' view, what might be the potential / possible challenges resulting from the use of new technologies, such as DLT, for EUR central bank money settlement for existing and potential new use cases? For example, what might be challenges for the overall functioning of financial markets, liquidity management, financial market integration/harmonisation/standardisation, efficiency, others, if both DLT- and non-DLT based solutions were used at the same time? If your / your members' answers differ depending on the use case, please elaborate on / substantiate your answers accordingly.

ICMA response:

The potential risks and ramifications of a wholesale digital Euro across the financial system warrant further investigations, including:

- (i) Design and characteristics of a wholesale digital Euro, implications for bank funding, market functioning, monetary policy transmission, financial stability, privacy and data protection, as well as scalability and environmental aspects of DLT validation mechanisms.
- (ii) Interoperability between a wholesale digital Euro and retail digital Euro, private and public blockchains, fungibility with conventional central bank money and interoperability with non-Euro currencies to avoid liquidity fragmentation, including potential lessons from cross-border initiatives such as the multiple CBDC bridge (mCBDC) project involving the BIS and other central banks.
- (iii) Technology risks and mitigation of single point of failure scenarios, including an implementation roadmap to deploy a wholesale digital Euro into capital markets safely, effectively and without causing disruption.
- (iv) Legal and regulatory aspects which affect directly (eg settlement finality) or indirectly (eg regulatory treatment of digital (DLT-based) securities across EU member states) the use of a wholesale digital Euro for payments, securities settlement and collateral management.

Governance will be critical to the success of a wholesale digital Euro. ICMA recommends the creation of a dedicated working group, bringing together ECB and market participants across the spectrum of capital markets, to develop a roadmap, provide technical input into design considerations as well as operating model of a wholesale digital Euro.

18. In your / your members' view, would you / your members think that it is possible (might not be possible) to achieve these benefits / overcome potential challenges with the architecture of the existing EUR

central bank money ecosystem (TARGET Services and applicable interfaces) in the long term? Please, elaborate on / substantiate your views and expectations.

ICMA response:

In conjunction with DLT-based securities, a wholesale digital Euro is considered to offer the following key benefits compared to the existing TARGET platform:

- (i) Programmability: the ability to pre-programme and automate hitherto manual and inefficient processes during the lifecycle of a security provided a set of defined conditions are met. For example, cash movements for settlement, coupon payments, and other corporate actions.
- (ii) Efficiency and consistency: Processing of both securities and cash transfer within an integrated DLT-based infrastructure is expected to increase both operational and capital efficiency, ensure settlement finality, reduce settlement fails and ultimately reduce funding costs, notably from a cross-border perspective.
- (iii) Reducing fragmentation: A single, EU-wide, digital infrastructure for payments to support securities settlement and collateral management is expected to reduce market fragmentation, which persists despite the development of TARGET Services, and increase attractiveness of the EU capital markets to international investors.
- (iv) Accessibility: EUR central bank money is currently defined by its existence in TARGET accounts, linking it to a single, closed network operated by the Eurosystem. While the availability of a wholesale digital Euro (a native digital asset, i.e. in the form of a 'DLT token') for use on different DLT networks would expand the Euro's reach, it would also require appropriate governance arrangements, notably in relation to distribution, risk management and oversight, amongst others.
- (v) Competitiveness: Future-proofing the role of EUR central bank money in light of the proliferation of private digital cash such as stablecoins, which may give rise to further fragmentation in wholesale payments, securities settlement and collateral management.

D. Identifying and understanding, from your financial market stakeholder's point of view, the potential impact on the existing TARGET Services and other consequences ,if new technologies, such as DLT, were used for the EUR central bank money settlement of existing and potential new use cases (as identified in B.) at some point in the future

19. In your / your members' view, what might be the potential impact (policy, operational, legal) on the existing ecosystem of EUR central bank money settlement (i.e. the way stakeholders today settle in EUR central bank money) , if new technologies, such as DLT, were used for the EUR central bank money settlement in the concrete existing and potential new use cases at some point in the future? Please, elaborate on / substantiate your views and expectations.

ICMA response:

See ICMA's response to questions 11 and 17.

20. In your / your members' view, which existing and potential new use cases for EUR central bank money settlement of financial transactions might in the short- to medium-term benefit from using new technologies together with the existing TARGET Services, i.e. from using both the existing TARGET Services and a DLT-based mechanism that is connected to TARGET Services ('trigger solution')?

ICMA response:

ICMA views a wholesale digital Euro as a key requirement and end state in the long term (more than 5 years). Its development should be analysed, prepared, and resourced accordingly in the short term to pave the way for the digital transformation of capital markets. A 'trigger solution' for wholesale payments through TARGET Services for DLT-based securities settlement and collateral management is not deemed a suitable alternative by many ICMA members, in particular from an investor's perspective. A key concern is that costs for an interim 'trigger solution' will adversely impact funding of a wholesale digital Euro.

21. In your / your members' view, what interface(s) would be required / warranted to enable a 'trigger solution' for the transfer of assets or processing of smart contracts in a DLT system to trigger the corresponding payment transaction in EUR central bank money in TARGET Services? If you / your members think that these interfaces would (need to) be different from the ones used for TARGET Services today, why do you / your members think so? Please, elaborate on / substantiate your views and expectations. If your / your members' answers differ depending on the use case, please elaborate on / substantiate accordingly.

ICMA response:

More information and further investigations on a 'trigger solution' would be required to be able to comment on interfaces and specific technical requirements. *See also ICMA's response to question 20.*

22. In your / your members' view, for which existing and potential new use cases do you believe EUR central bank money settlement of financial transactions might benefit from a full DLT solution (*DLT € wCeBM, i.e. central bank money made available as a native digital asset, i.e. in the form of a 'DLT token'*), at some point in the future?

ICMA response:

See ICMA's response to questions 11 and 12.

23. In your / your members' view, would you think that a 'trigger solution' might bring the same benefits as a full DLT solution (*DLT € wCeBM, i.e. central bank money made available as a native digital asset, i.e. in the form of a 'DLT token'*) in the medium-to-long-run? Please, elaborate on / substantiate your views.

ICMA response:

As outlined above, ICMA members consider a wholesale digital Euro (ie digital central bank money made available as a native digital asset issued by the Eurosystem) to be a cornerstone to support wholesale payments, securities settlement and collateral management in a DLT environment, which enables next-generation automation and innovation through smart contracts, reduced friction and would also further support the EU's Capital Markets Union. A 'trigger solution' is not considered to offer the same benefits, *see also ICMA's response to question 18.*

2. Glossary of key concepts used in or related to this questionnaire:

Central bank money: a liability of a central bank that can be used for settlement purposes as a safe settlement asset that avoids credit and liquidity risks. Central bank money may be made available in a digital form such as account balances held at a central bank or relying on new technologies such as DLT

Digital central bank money for wholesale settlement relying on new technologies, such as distributed ledger technology (DLT): digital central bank money made available for wholesale settlement in the form of a native digital asset (*DLT € wCeBM*) or otherwise made available for wholesale settlement relying on new technologies, such as DLT (including via a trigger solution)

Distributed Ledgers: Distributed ledgers use independent computers (referred to as nodes) to record, share and synchronize transactions in their respective electronic ledgers (instead of keeping data centralized as in a traditional ledger). Blockchain is one type of a distributed ledger. Blockchain organises data into blocks, which are chained together in an append only mode.¹

Distributed Ledger Technology (DLT)²: Technology based on distributed ledgers and used for recording ownership of data (e.g.data regarding payments or securities settlement)

Native digital asset: a digital asset that is originally issued, recorded and kept in a DLT-based system

Programmability: the ability to automate processes by pre-programming actions to be taken if a specific event occurs³

Smart contract: an algorithm coded to automatically execute actions in a DLT environment when a set of conditions is met⁴

Tokenised asset: a digital representation in a DLT-based system of an asset, that is already available elsewhere⁵

Trigger solution: a solution that enables the settlement of the cash leg of DLT-based wholesale financial transactions (e.g. transfer of assets or the processing of smart contracts for financial transactions in a DLT system) by triggering the corresponding payment for settlement in a non-DLT payment system (such as the current TARGET Services).

Full DLT solution / *DLT € wCeBM*: DLT-based service that enables the settlement of the cash leg of wholesale transactions via digital central bank money made available as a native digital asset, i.e. in the form of a 'DLT token' (*DLT € wCeBM*).

¹ <https://www.worldbank.org/en/topic/financialsector/brief/blockchain-dlt>

² https://www.ecb.europa.eu/ecb/educational/explainers/tell-me-more/html/distributed_ledger_technology.en.html

³ See: CPMI, 'Wholesale digital tokens', December 2019 (<https://www.bis.org/cpmi/publ/d190.pdf>).

⁴ See: Advisory Groups on Market Infrastructures for Securities and Collateral and for Payments, 'The use of DLT in post-trade processes', April 2021 (https://www.ecb.europa.eu/pub/pdf/other/ecb.20210412_useofdltposttradeprocesses~958e3af1c8.en.pdf); D. Bullmann, J. Klemm and A. Pinna, 'In search for stability in crypto-assets: are stablecoins the solution?', ECB Occasional Paper no. 230, August 2019; M. Bech, J. Hancock, 'On the future of securities settlement', BIS Quarterly Review March 2020 (https://www.bis.org/publ/qtrpdf/r_qt2003i.pdf)

⁵ Reference for the definitions of native digital asset and tokenised asset: Advisory Groups on Market Infrastructures for Securities and Collateral and for Payments, 'The use of DLT in post-trade processes', April 2021 (https://www.ecb.europa.eu/pub/pdf/other/ecb.20210412_useofdltposttradeprocesses~958e3af1c8.en.pdf)