

Use of DLT and Tokenisation in Financial Markets

A Proposed Vision and Policy Recommendations

AFME's contribution to DG Fisma's call for submissions on issues and opportunities relating to the deployment of DLT-based infrastructure and services in the EU

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*The Association for Financial Markets in Europe (AFME) welcomes the opportunity to respond to a letter from Marcel Haag, DG FISMA's Director of horizontal policies, calling for submissions on **any issues and opportunities relating to the deployment of DLT-based infrastructure and services in the EU** that may merit the European Commission's attention.*

AFME represents a broad array of European and global participants in the wholesale financial markets. Its members comprise pan-EU and global banks as well as key regional banks, brokers, law firms, investors and other financial market participants. We advocate stable, competitive, sustainable European financial markets that support economic growth and benefit society.

AFME is the European member of the Global Financial Markets Association (GFMA) a global alliance with the Securities Industry and Financial Markets Association (SIFMA) in the US, and the Asia Securities Industry and Financial Markets Association (ASIFMA) in Asia.

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EXECUTIVE SUMMARY

- The advent and advancement of distributed ledger technology (DLT) systems have created the opportunity for the EU to lead the world in building the capital markets and economy of the future, based on DLT and a network approach that in this submission we refer to as Technology Financial Infrastructure (TFI).
- Leading the world in developing TFI would enable the mobilisation through tokenisation of a wider array of EU real-world assets - including industrial and data assets – connecting these assets to capital markets as well as other areas of the economy. AFME’s global affiliate Global Financial Markets Association has estimated that DLT has the potential to create ~16tn USD global markets for illiquid assets by 2030.¹
- Moreover, TFI has the ability to enhance capital markets efficiency access for firms and citizens, by reducing cost and time of processes, from issuance of financial assets to their clearing, settlement, holding, and servicing. To illustrate this potential, it has been estimated that DLT can bring transformative benefits of ~20bn USD reduction in global clearing and settlement costs annually.²
- Indeed, over the past year in particular we have seen an acceleration of issuance of DLT-based securities:

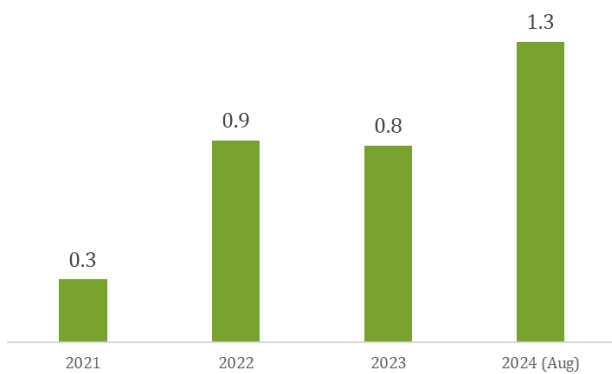


Figure 1: Global issuance of DLT-based bonds (in EUR Bn).
Source: AFME Research

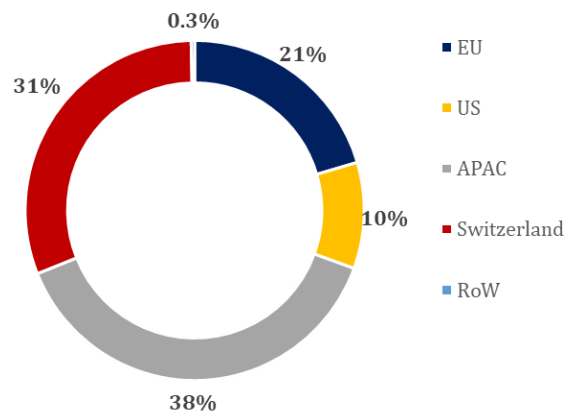


Figure 2: % of total issuance volume DLT-based bonds by location (since 2021). Source: AFME Research

- As other jurisdictions are updating their regulatory frameworks and expressing their ambition to be a leader in DLT and tokenisation, the EU stands at a crossroads. The EU needs to act urgently to maintain its lead in the adoption of this technology, and capitalise on the opportunities offered by DLT to develop capital markets as well as to deliver on longstanding policy objectives such as competitiveness, innovation, and resilience. Otherwise, the EU risks falling behind.
- As capital markets are a key link in the tokenised economy as well as a key driver of DLT-based innovation, urgent action is proposed to ensure that the EU capital markets regulatory framework

¹ GFMA Report, “The Impact of DLT in Global Capital Markets”, <https://www.gfma.org/wp-content/uploads/2023/05/impact-of-dlt-on-global-capital-markets-full-report.pdf> (May 2023)

² Santander, Innoventures, Oliver Wyman, Anthemis Group, “The Fintech 2.0 Paper: rebooting financial services”, 2015.

provides a sustainable basis for a transition towards TFI. As such, we recommend a two-pronged route to unlocking outstanding policy and regulatory barriers:

1. **Short-term 'Quick Fixes'**: specific, targeted reforms that can be applied to make the DLT Pilot Regime more attractive and a successful glidepath for testing regulatory modifications to enabling the use of DLT in capital markets on a permanent basis.
2. **Longer-term permanent changes**: with an eye to the longer term, there are changes that can be made to EU law to truly enable the scaling of DLT-based capital markets and pave the path towards the development of a TFI. This requires a comprehensive assessment of the compatibility between the use of DLT and the existing securities regime, which should commence as soon as possible.

In this submission, AFME would like to contribute to a vision for a token economy and the role of capital markets in achieving such a vision through concrete policy recommendations. AFME and its members have been at the forefront of the EU discussions on scaling DLT-based capital markets, through the publication of two roadmaps setting out issuer³ and policy⁴ considerations for scaling DLT-based markets. This submission expands on the policy, regulatory, and legal considerations set out in the two roadmaps.

PART I. VISION – DLT-based Capital Markets in a Token Economy

The Vision – in summary: *A transformative potential of DLT is that can enable companies and individuals to access a shared, peer-validated database as a single-source-of-truth, without the need to centralise data and transaction processing with a single actor. This increases accessibility by participants, data security and immutability, and data transparency in the real economy. Innovation in finance plays a key role in this vision, which will only begin in earnest with the updating of capital markets infrastructure.*

Overall vision for a token economy

For the first time, **DLT makes it possible for all types of different economic assets (financial assets, real estate, industrial assets, etc) to be recorded (as ‘tokens’) in a shared database: a distributed ledger.** This opens up the opportunity for large-scale economic innovation, as different assets can be linked and exchanged through a streamlined process, underpinning a token economy. Tokenisation also can help with democratising the economy.

Moving towards a token economy implies an **ever-closer linkage through common interfaces of production activities carried out by different economic actors**, which can help integrate upstream and downstream processes (sourcing, distribution, etc.) with digital payments and fulfilment of contracts in an automated manner. If applied properly, this could improve efficiency and access to markets for small businesses, investors and citizens. A token economy can facilitate connectivity with capital markets through a distributed settlement system, to which financial market participants can be connected.

Some examples of real world application of tokenisation include:

- **Industry 4.0:** DLT can enable manufacturers to achieve their targets more efficiently by enhancing supply chain transparency, improving patent enforcements, and eliminating unnecessary intermediaries. This would help encourage competition between companies and reduce costs for end consumers. In addition, using DLT in the manufacturing process can also help with making transparent ESG data related to production, including work conditions and carbon emissions.
- **Carbon credit tokenisation:** using DLT in the issuance and trading of carbon credits can help improve data transparency and authenticity, real-time data accessibility and tracking, visibility on and auditability of use of proceeds, and also enhance liquidity on the carbon market.
- **Real estate tokenisation:** real estate is an asset class that increasingly lends itself to tokenisation, by using underlying tokens to represent a property with all its rights and obligations. Real estate tokenisation

³ [Scaling DLT-based SSA and Government Bond Markets – A Roadmap Strategy for European Issuers](#)

⁴ [Scaling DLT-based Capital Markets – A Policy Roadmap for the EU](#)

brings many benefits for developers and investors including greater transparency over cash flows, fractionalised ownership and investment, and more efficient execution of acquisitions and sales.

As the above examples demonstrate, **the tokenisation of real-world assets allows for their mobilisation, unlocking downstream benefits.** While the integration of operational and regulatory frameworks for all different types of assets held in token form remains to be developed, the principle is clear: a token economy will be less centralised and more distributed - and with that potentially more transparent and democratic – as it is based on linkage and cooperation across different private sector companies and citizens, as well as public sector authorities.

In order for the token economy to reach its full potential, it requires a shared network across the EU without national, industry (or other) silos or boundaries. A token economy will also be built on a more distributed, collaborative and network-like architecture across industries with a more distributed processing and governance framework. This needs to be considered when thinking about the future of Financial Markets Infrastructures (FMIs).

Capital Markets: A Sector-Specific Vision

Financial services have – and will continue to – help drive innovation across the whole economy. In fact, a prerequisite for moving to a token economy is innovation in financial services underpinned by DLT-based capital markets. The examples above show that a token economy can lead to value added services, especially once assets are in a shared network, and bring more accessibility to real economic actors seeking finance, as well as investors and public sector issuers alike. Advances in DLT-based capital markets, which can enable more streamlined and automated financing for companies, ease the use of (any) assets as collateral, and widen access for citizens to finance, are necessary for the development of the broader token economy.

At the same time, the automation, distribution, and innovation brought about by DLT-based capabilities can provide **incentives and unique opportunities to overcome long-standing challenges and thereby contribute to key EU policy objectives.** These policy objectives are explored in depth in the following pages, but at a high-level include:

- 1. Economic growth and competitiveness**
- 2. Completing the Capital Markets Union**
- 3. Promoting innovation, competition, and development of new services**
- 4. Reducing settlement risk and improving settlement choice**
- 5. Enhancing resilience (by reducing single-point-of-failure risks)**
- 6. Improving post-trade integration**
- 7. Data transparency and symmetry**

Indeed, the potential offered by DLT for European Capital Markets was recognised by the ECB in a recent speech by Piero Cipollone, in which he spoke of creating a ‘Digital Capital Markets Union’ based on the transformative power of DLT and tokenisation.⁵ While this vision still needs to be clarified, developed, and supported by consistent regulation across different asset classes, policymakers and market participants alike have indicated **benefits associated with adopting DLT as the underlying technology for the future**

⁵ Piero Cipollone, “Towards a digital capital markets union”:

<https://www.ecb.europa.eu/press/key/date/2024/html/ecb.sp241007~cc903db51d.en.html> (October 2024)

financial market infrastructure (FMI) system⁶. In the short- to medium-term, incremental adoption of DLT can serve as a complement to existing FMI operating models.⁷ Intermediaries' participation in a DLT-based financial system will remain important to the performance of key functions (such as custody) and facilitating investor participation.

The vision for DLT-based capital markets can be achieved through the development of what could be called a **Technology Financial Infrastructure (TFI)**: allowing and facilitating firms to perform – on DLT – components of the asset registration and settlement functions (currently performed by central securities depositories, or CSDs) on a functional basis. This can help pave a path towards a shared DLT-based infrastructure that can create accessibility for financial market participants and promote competition and innovation.

⁶ Recent reports and key initiatives involving public and private sector participants include the Project Guardian Fixed Income framework, providing a guide to implementing tokenisation in debt capital markets: <https://www.mas.gov.sg/-/media/mas-media-library/development/fintech/guardian/guardian-fixed-income-framework.pdf> (November 2024)

⁷ Swiss Digital Exchange and the D-FMI initiative of Euroclear demonstrate this approach.

Introducing the “Technology Financial Infrastructure” *(please see Part II for specific policy proposals on how to deliver on the TFI)*

Background: DLT introduces the possibility of existing functions performed by CSDs (notary, maintenance of securities accounts and settlement system) being provided at the functional level and in different combinations. As such, it would be preferable if different firms contributing to the overall holding and settlement arrangements were able to act with their own roles and accountability. While providers of core services in a distributed settlement system should be adequately regulated to the same outcome as the existing framework, it is essential to take an **outcomes-based, functional approach that opens the way to different business models to fully realise the benefits of DLT**. There are a number of barriers in existing legislation which need addressing to ensure that there is a level playing field and genuine technological neutrality.

Example of TFI: One firm may operate the Layer 1 DLT infrastructure, another may provide wallet services (to support holdings of DLT financial instruments directly by investors or indirectly by custodians), another may deploy smart contracts for asset servicing, and still another may manage interfaces with payment systems.

Challenges in the way of developing TFI:

- While firms are technically able to perform CSD functions in a DLT-based system, and their roles may evolve to replicate or complement those of a traditional CSD, their current ability to obtain authorisations and operate within their own specialist domains is limited by the structure of the CSDR and other regulations (such as the Settlement Finality Directive, MiFID, etc.)
- The CSDR was written in a way that describes CSDs as they are and not as they could be. The risk is that the models of incumbent CSDs are used to constrain the shape of new FMIs. We also note (in Part II and Appendix 5) that the CPMI-IOSCO Principles for Financial Market Infrastructures allow for settlement to be performed by a network of actors in a distributed manner, so long as those actors are authorised for the individual functions performed.

Solutions to be considered:

- **Simplified authorisation:** one solution is to create a new regime for the establishment of a distributed post-trade securities network, which is not based on existing regulations such as CSDR, but takes a novel approach based on permissioning of functions. This would be similar to that in MiCAR for crypto-asset service providers, permitting credit institutions and investment firms to extend their service offerings by notice to the competent authorities. Rather than requiring a firm to turn itself into a full CSD, serious consideration should be given to leveraging its existing authorisation to encompass the relevant activity, thereby preventing duplication of rules and resolving the contradictions set up by the CSDR.
- **Creation of a parallel regime to the CSDR which recasts the CSD core functions:** DLT can also be used to perform discrete functions, including providing the initial registration of securities, settling transactions, and maintaining records of entitlements, in ways that are at least as effective as traditional FMIs but on a distributed basis. While existing FMIs are well-placed to adapt their core services and functions to a DLT-based system, the distributed nature of DLT – permitting entities and validators to connect to the same network – can in fact facilitate a greater number of companies and entities to perform FMI core or ancillary functions (subject to authorisation). To facilitate the full potential of DLT and allow for greater competition, the regulatory regime going forward should permit eligible actors to perform services at the functional level. This would promote innovation as well as facilitate greater competition without creating additional risk.

How can a “Technology Financial Infrastructure” help meet policy objectives?

Policy objective	Description	Delivers on the following goals requested by the Commissioner’s mission letter
1. Economic growth and competitiveness	<ul style="list-style-type: none"> ▪ Europe should maintain its lead in DLT as a driver for digitalisation and economic growth. This is aligned with the conclusion of the Draghi Report: "The EU’s competitiveness will increasingly depend on the digitalisation of all sectors and on building strengths in advanced technologies, which will drive investment, job and wealth creation." ▪ A token economy can bring safer, faster, and cheaper transactions across sectors, while driving innovation, accessibility to goods, services, and capital markets, and economic growth. ▪ Within the token economy and capital markets, TFI can facilitate the creation of new business and operating models in a way that does not require innovations to conform to existing business arrangements and rules. 	<ul style="list-style-type: none"> ✓ Growth and prosperity ✓ Draghi Report ✓ Letta Report ✓ SME and competitiveness check ✓ Availability of venture and other risk capital
2. Completing the Capital Markets Union	<ul style="list-style-type: none"> ▪ DLT offers an unprecedented opportunity to achieve longstanding goals to integrate capital markets through upgrading and redesigning financial infrastructures. At the moment, EU capital markets remain fragmented due to a lack of harmonisation in legal and regulatory framework in relation to custody, asset servicing and tax-related processes.⁸ The information management capabilities of DLT can help capital market participants to manage differences in legal and regulatory frameworks, and can also facilitate the creation of efficient, common pan-European operational processes that meet underlying policy objectives. ▪ DLT presents a unique solution by offering the ability to streamline issuance processes, and compress execution and program settlement times, as well as innovate market structure.⁹ ▪ Streamlined issuance processes enabled by DLT can allow smaller and medium-sized corporates to tap 	<ul style="list-style-type: none"> ✓ Capital Markets Union ✓ Saving and investment products at EU level ✓ SME and competitiveness check

⁸ As noted in the recent reports from former ECB President Mario Draghi and Italian Prime Minister Enrico Letta.

⁹ Indeed, a recent speech titled “Towards a digital capital markets union” from ECB Executive Board member Piero Cipollone has highlighted that technological advancements – including the deployment of DLT – through a model like TFI can help integrate digital asset markets and help drive capital market integration in the EU.

	<p>EU capital markets more easily, enabling the shift from bank-based financing to market-based financing.</p> <ul style="list-style-type: none"> ▪ In turn, this should also reduce incentives for EU companies to turn to look outside of the EU to raise capital, and enhance the depth, liquidity and integration of EU capital markets. ▪ DLT can also expand the scope of asset classes that can be tokenised, allowing non-financial and financial assets to benefit from highly automated trading and post-trade processes, unlocking liquidity. This can open up new pools of liquidity. ▪ The funds sector has also shown increasing appetite to invest in DLT-based securities, due to expected efficiencies and cost reductions in issuance and execution derived from DLT. This can ultimately lead to improved investment choices for European investors and contribute to the shift to market-based financing, as well as enabling the end-to-end creation of tokenised funds. ▪ Enabling the use of DLT in capital markets could also possibly facilitate and enhance supervision at the EU-level, with the potential for regulators to be connected to the TFI for real-time market monitoring and surveillance. 	
<p>3. Promoting innovation, competition, and development of new services</p>	<ul style="list-style-type: none"> ▪ TFI allows for incumbent financial institutions to fully take advantage of the efficiencies offered by DLT and develop their existing roles and business models in a safe and regulated manner. ▪ TFI can facilitate greater competitiveness and competition in the provision of post-trade services. ▪ The use of DLT can also help issuers and investors reduce costs, automate corporate actions, and also introduce new financial products and capabilities for sovereign and corporate issuers and investors, for example: <ul style="list-style-type: none"> ○ Key performance indicator (KPI) tracking for green and sustainability-linked bonds: DLT-based bonds can embed functionality on proceed allocation and fulfilment of sustainability KPIs, track supply origins and use of proceeds ○ Reducing and optimising reconciliation processes, which can also lead to more frequent straight-through processing coupon 	<ul style="list-style-type: none"> ✓ Digital finance and payments ✓ Draghi Report ✓ Availability of venture and other risk capital ✓ European Green Deal ✓ Scale up sustainable finance

	<p>payments, and enhanced tax and asset servicing</p> <ul style="list-style-type: none"> ○ Enabling end-to-end tokenisation of funds, with more customisation and tailoring optionality for investors 	
<p>4. Reducing settlement risk and improving settlement choice</p>	<ul style="list-style-type: none"> ▪ TFI offers the widespread possibility for programmable or atomic settlement.¹⁰ ▪ The merits of programmable settlement and possibility to shorten settlement cycles can critically help reduce settlement risk and improve the efficiency of capital flows.¹¹ ▪ Furthermore, trade confirmation, affirmation, allocation and settlement could be combined into a single step, and reconciliations would become practically superfluous. Benefits include reduced counterparty risk and potentially reduced settlement failures and penalties. ▪ Additional benefits can include: <ul style="list-style-type: none"> • Faster novation and post-trade processing • Auto-execution of smart contracts • Programmable settlement • Reduced risk via reduced margin/collateral requirements • Development of intraday (repurchase agreement) markets ▪ The parallel development of DLT-based central bank cash solutions would further allow for scaling up and enhancing the participants' choices for atomic or programmable settlement 	<ul style="list-style-type: none"> ✓ Stable financial system ✓ Risk-absorbing measures ✓ Make Europe faster and simpler
<p>5. Enhancing resilience (by reducing single-point-of-failure risks)</p>	<ul style="list-style-type: none"> ▪ TFI has the potential to reduce systemic risks by allowing to update a shared database (ledger) through multiple nodes and therefore distributing the ability of providing post-trade, communication, and information services across a wider range of eligible actors. 	<ul style="list-style-type: none"> ✓ Risk-absorbing measures ✓ Resilience ✓ Security

¹⁰ ECB Executive Board member Piero Cipollone has noted: "The promise of tokenisation and DLT lies in the creation of a transparent ledger which would make it possible to perform the three key functions of asset trading, namely negotiation, settlement and custody, on the same platform. This is expected to reduce transaction costs by reducing the need for reconciliation, matching and other data processing steps, which would foster resilience and make it possible to operate on a 24/7, 365 days a year basis. DLT also supports the native issuance of digital assets, enabling direct transactions between a wide range of investors. This could lower barriers to entry and create opportunities for small issuers, such as small and medium-sized enterprises, to access capital markets. DLT would also enhance efficiency by significantly reducing settlement times and using the self-executing, programmable functions in smart contracts. This could potentially bring substantial savings."

¹¹ <https://www.esma.europa.eu/sites/default/files/2024-07/Public_hearing_on_shortening_the_settlement_cycle_in_the_EU_-_Presentations.pdf>.

	<ul style="list-style-type: none"> ▪ DLT can help mitigate operational impact from events such as terrorist attacks, systemic cyber incidents, and outages which - in the current system - have evidenced that concentration of services in few actors can negatively lead to the build-up of market risks and ultimately, lock counterparties in positions in operational and/or liquidity stress. ▪ The distributed and shared nature of the system can also make it easier to recover both data and processes in the event of an attack (assuming that not all the validating nodes are corrupted at the same time). This could also reduce the need for costly recovery plans. 	
6. Improving post-trade integration	<ul style="list-style-type: none"> ▪ TFI offers a unique possibility to unify the settlement layer and pool liquidity by offering connectivity to different market participants without concentrating market power in the hands of few actors. ▪ TFI can also promote fair and open access to the post-trade services. 	<ul style="list-style-type: none"> ✓ Risk-absorbing measures ✓ Make Europe faster and simpler ✓ Review the regulatory framework
7. Data transparency and symmetry	<ul style="list-style-type: none"> ▪ DLT can facilitate the recording of securities and transparency on holdings in ways that reduce market abuse and fraud, improve AML/CTF monitoring, and enhance investor protection objectives. ▪ By allowing different market participants and real economy actors to connect to the same database, DLT can also enhance data symmetry and information accessibility. 	<ul style="list-style-type: none"> ✓ Democracy ✓ AML/CFT

Now is the time to Act

The EU has been a global leader in the implementation of DLT, especially in capital markets. However, other jurisdictions have boosted their ambitions to lead the world into the tokenisation era: the new UK Government has pledged to become a global leader in tokenisation; Hong Kong has been facilitating benchmark size issues by its Government and corporates; Singapore has been driving global initiatives in tokenisation and embraced a tokenisation-friendly policy framework; the Swiss regime has enabled large issues on DLT by cantonal governments, financial institutions, and corporates. While the US has thus far lagged in DLT adoption, it holds large latent potential for DLT adoption and has signalled a high degree of market readiness (once the regulatory regime is unblocked).

In order to maintain its lead in DLT adoption, and to lead the world towards to DLT-based capital markets and into a token economy– **the EU needs to urgently build on existing policy initiatives to enable new DLT-based and distributed business models, especially in capital markets**. This would necessitate **moving away from a wholly centralised financial market infrastructure towards a TFI model allowing**

connectivity with a distributed settlement system. In the future, we envisage that in a DLT-based system (interoperable with the current centralised FMIs), regulated financial institutions and eligible market participants can conduct activities on a distributed basis through the TFI. In practical terms, this should also facilitate firms to perform components of the record-keeping and settlement functions currently performed by central securities depositories (CSDs) in ways that are better aligned to the features and possibilities of DLT.

In the next part, we will set out concrete proposals that can be taken right now to help scale DLT-based capital markets, to move towards TFI, help develop a token economy, and improve competition and competitiveness.

PART II. POLICY RECOMMENDATIONS

In order to achieve the above vision, it is vital that the regulatory framework be made ready for a shift towards a token economy and enable the use of DLT in capital markets to achieve its full potential. To allow for financial market participants and real economy actors to connect to a tokenised real economy and perform key economic functions in a shared system, regulation should enable the creation of distributed models in capital markets, based on DLT. Such models, if well-designed and well-regulated, can help drive forward innovation in capital markets and link capital markets to a broader token economy. The urgency to act is now while the EU is a leader in the application of DLT.

SUMMARY OF PROPOSED POLICY RECOMMENDATIONS

<p>Short-term 'Quick Fix' Changes (0-2 years)</p>	<ul style="list-style-type: none"> - Q1 2025: the Commission should take immediate steps towards: <ul style="list-style-type: none"> ▪ Adopting DLT Pilot Regime Quick Fix legislative proposals for 1) eliminating the requirement for CSD authorisation for DLT SS authorisation, and 2) raising transaction thresholds. Relatedly, support the ECB to achieve central bank collateral eligibility for instruments issued through the DLT Pilot Regime. ▪ Ensuring that the EU implementation of internationally agreed prudential standards not penalise the capital treatment of DLT-based securities; in addition, ensure the same liquidity treatment of DLT-based securities as traditional securities
<p>Long-term: Delivering on TFI through Permanent CSDR Changes (2-5 years)</p>	<ul style="list-style-type: none"> - Q1 2025: EC to launch comprehensive consultation on: <ul style="list-style-type: none"> ▪ Compatibility between the use of DLT and securities regulation, covering: Central Securities Depositories Regulation, Financial Collateral Directive, Settlement Finality Directive, also taking into account the findings of the EC study on national legal framework and obstacles for asset tokenisation in Member States¹² ▪ The consultation should, at a minimum, cover: <ul style="list-style-type: none"> ▪ Re-examination of the securities registration requirement (CSDR Art. 3(2)) ▪ Creation of a parallel framework to the CSDR for TFI which recasts the CSD core functions ▪ New governance requirements ▪ Financial Collateral Eligibility and permanent Central Bank Collateral Eligibility ▪ Achieving settlement finality ▪ Encouraging post-trade integration through the use of DLT ▪ The consultation should have regards to: <ul style="list-style-type: none"> ▪ Technological benefits of DLT for improving competition, accessibility, and information symmetry ▪ Incentives for financial market participants to upgrade infrastructure - By Q4 2025: comprehensive consultation to be completed - By H2 2026: EC to adopt legislative proposal based on the outcome of the comprehensive assessment

¹² <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/tender-details/82c6b1b2-e156-4fe5-ba0f-4fbd10739fe4-CN>

- | | |
|--|---|
| | <ul style="list-style-type: none"> - H2 2026-H2 2028: EU inter-institutional negotiations on and finalisation of the legislative proposal - By March 2029: updated securities and settlement regime to enter into application |
|--|---|

Short-term (0-2 years): Reforming the DLT Pilot Regime

Background: In the EU, while the EU DLT Pilot Regime is a welcome initiative to demonstrate the capabilities of DLT systems within FMIs, the regime suffers from limitations that bar commercial development; and, in turn, constrain investment. The European Securities and Markets Authority (ESMA) has noted a number of issues that appear to have slowed or discouraged applications to take part in the DLT Pilot:

- the lack of available digital money arrangements, such as e-money tokens;
- a lack of clarity for arrangements involving self-hosted wallets;
- interoperability with traditional market infrastructures and other novel infrastructures;
- limitations to scope influenced by the possibility of retail participation; and
- the commitment to timing and the thresholds.¹³

The experience and perspective of AFME Members is that ESMA's report only partially explains the failure of the DLT Pilot Regime to gain significant traction to date. The most important challenges not included in ESMA's list are:

- The requirement to establish a CSD to operate a DLT Settlement System (DLT SS) – this effectively prohibits credit institutions and investment firms from DLT SS authorisation.
- The corresponding need for firms which are not CSDs to operate an MTF alongside DLT with settlement capabilities, in order to be authorised as a DLT Trading and Settlement System (DLT TSS).¹⁴
- It appears that the CSDR security registration requirement (Article 3(2)) is not switched off where securities are registered and settled by a non-CSD DLT TSS and therefore, it appears that issuers are required to deposit publicly traded securities (or when used as collateral) in a CSD despite the availability of non-CSD DLT TSS. This would in practice constrain DLT TSS to DLT financial instruments that are privately placed and traded over-the-counter (OTC).

For the reasons above, to date, the DLT Pilot Regime has failed to attract significant interest; either from the financial institutions most experienced in operating financial market infrastructures or fintechs that are best placed to create new models. The DLT Pilot Regime is an important initiative of the EU to test regulatory modifications, but it has become apparent that its limitations on scope and scale have dampened the enthusiasm of expected participants.

We therefore consider the below suggested changes to be critical to enlarging participation in the DLT Pilot Regime, and encourage the changes to be implemented as soon as possible through a 'Quick Fix' legislative proposal so that scaling of DLT-based markets can begin through the Pilot Regime.

Issues with the DLT Pilot Regime:

- **Restrictions on the operation of a DLT SS are incompatible with non-CSD DLT platforms.** At a high level, the DLT pilot regime is largely based on CSDR, and therefore incompatible at its core with a distributed network model (i.e. TFI) that would fully allow for the benefits of using DLT to materialise

¹³ [Letter](#) from ESMA Chair to EU Institutions on DLT Pilot Regime Implementation (April 2024)

¹⁴ Unless authorised as a DLT SS

(see Part I). At a practical level, the greatest challenge to the success of the DLT Pilot is the restriction on the operation of DLT SS to authorised CSDs. A number of firms have developed DLT-based infrastructures to record the issuance of securities and the holdings of investors or intermediaries. These infrastructures, however, are not authorised CSDs for the purpose of satisfying CSDR-related security requirements, and therefore the securities issued through them generally do not benefit from listing and trading eligibility, nor collateral eligibility. They are also not eligible to become DLT SS under the Pilot Regime, which is restricted to CSDs to benefit from the exemption of certain CSDR requirements.

- **Related to the above, financial institutions face prohibitive costs and lack commercial incentive (whilst requiring large investment) in applying to become a DLT SS.** The cost of setting up a standalone entity subject to CSD authorisation and regulation is a very significant investment with an uncertain return, given a lack of clarity around the future of the regime. Even with the benefit of the exemptions under the DLT Pilot Regime, the cost to firms pursuing the route of creating new CSDs to access the Pilot Regime would be excessive; particularly when weighed against the restrictions on scale and the temporary nature of the DLT Pilot Regime. Setting up in competition to the incumbent CSDs is likely to be (i) costly, (ii) a distraction from the main business of the potential applicant, and (iii) attract few peer firms as participants, due to competition considerations. In addition, there are specific provisions within the CSDR¹⁵ which directly conflict with the ability of credit institutions and investment firms from being able to perform the DLT SS function by virtue of their characterisation and existing business/group structure. Further, for the reasons outlined above, for non-CSDs to perform DLT SS and DLT TSS functions, the regime needs to clarify that settlement does not need to be performed by a CSD where the securities are traded on a regulated trading venue.¹⁶
- **There is also a lack of incentives to develop trading venues, which undermines the development of secondary market liquidity.** In addition, firms have not built trading venues to support secondary markets in DLT-based securities. The DLT Pilot Regime requires them to do so in order to operate as a DLT TSS, but there is a mismatch between the functions of (i) sourcing the liquidity needed to support a DLT multilateral trading facility (MTF) and (ii) providing records to reflect holdings or effecting settlement of transactions. The firms which have developed the capabilities to perform the latter two functions on DLT are not necessarily in a position to gather sufficient buying and selling interests to justify establishing an MTF to support trading in the financial instruments they are supporting. This is due to: (i) the relatively low level of market maturity; (ii) the fragmentation of DLT-based infrastructure; and (iii) competition considerations. Without a business case to create a DLT MTF, there is no business case to operate a DLT TSS. The challenge is not the technology used for trading in an MTF (i.e. whether book-entry systems or DLT); it is the lack of liquidity necessary to generate revenues at a level that will support the investment needed to launch and operate a trading venue.
- **The Pilot Regime's international competitiveness needs to be maintained.** From the perspective of prospective applicants, the UK Digital Securities Sandbox (now live) offers a more flexible route for participation. The DSS, shaped by the delegation of rulemaking to supervisors, is more enabling of the scope of changes that can be made to existing legislation—most of it aligned with the *acquis* for historical reasons. A key difference is that the UK Digital Securities Sandbox does not require CSD authorisation to operate a DSD (UK version of a DLT SS), which could permit a higher degree of flexibility for non-CSD DLT platforms to qualify as DSDs and therefore attract more participants. Given

¹⁵ For example, CSDR Articles 18 and 54.

¹⁶ That is, the application of CSDR Article 3(2).

these developments, we view that the DLT Pilot Regime's competitiveness needs to be maintained at a minimum by removing the prerequisite requirement of CSD authorisation for DLT SS authorisation.

Suggested Changes

The DLT Pilot Regime is a stepping-stone on the path to the transformation of Europe's financial infrastructure. **Three key changes** can be made to open the way to DLT-based infrastructure and growth of DLT-based markets, while maintaining the stability and integrity of markets. We have set out, in the Appendices, those which ought to be considered as part of a "quick fix" for the DLT Pilot Regulation (DLT PR) in detail.

1. Elimination of CSD authorisation requirement for DLT SS authorisation (see suggested amendments in Appendix 1)

A serious obstacle to the development of the DLT Pilot Regime is the burden of obtaining authorisation as a specialised CSD by an investment firm/credit institution if they wish to operate a DLT SS Authorisation as a CSD cannot be attained easily - due to commercial and regulatory constraints - by credit institutions and investment firms. While an investment firm/credit institution could perform the core functions of a CSD through the DLT TSS route, this would require the set up and operation of an MTF, which is prohibitive for many investment firms/credit institutions that do not wish to commercially carry out trading venue activity. We consider that the DLT SS function should be a most appropriate route available for investment firms/credit institutions to perform the CSD core functions under the DLT Pilot Regime. **However, for it to be workable, it requires eligibility expansion (i.e. removal of the requirement to be authorised as a CSD) and revision of the requirements/exemptions accordingly.** To further facilitate participation in the Pilot Regime and boost secondary market liquidity, it should also be allowed for a consortium of DLT SS and DLT MTFs to be authorised as a DLT TSS.

The key issues related to the current prerequisite requirement for CSD authorisation for DLT SS are:

- Art 18(1) of the CSDR states: "The activities of the authorised CSD shall be limited to the provision of services covered by its authorisation or by notification in accordance with Article 19(8)." This means that where the CSD is a credit institution or investment firm, this restriction appears to conflict with the business of the firm. This would **effectively require setting up a separate entity that would be uneconomical.**
- This is combined with Art 18(3) of the CSDR, which states: "An authorised CSD may have a participation only in a legal person whose activities are limited to the provision of services listed in Sections A and B of the Annex, unless such a participation is approved by its competent authority on the basis that it does not significantly increase the risk profile of the CSD." The **need to obtain approval for participation** by the firm in other firms which do not meet the conditions set out in this provision creates an unnecessary burden where the CSD authorisation is sought by a credit institution or investment firm subject to CRR, MiFID II, etc.
- As a further example, Article 54 contemplates **group wide restrictions for CSDs performing non-core CSD functions.** Where the DLT SS (and accordingly the DLT TSS) function is broadened by way of the eligibility criteria, it should not inadvertently restrict the ability of credit institution/investment firms from applying to be a DLT SS as a result of its existing services and group structure.
- As part of this widening of the eligibility of the DLT SS, in order for the DLT SS to be effective, the regime will need to ensure that **securities trading on trading venues can be settled through non-CSD DLT SS** (i.e. CSDR Article 3(2) will need to be switched off). As a general point, given the regulatory

and supervisory regimes of investment firms and credit institution are not contemplated by the CSDR, we suggest that the Commission carefully consider the workability of the regime for such entities (e.g. making exemptions available) within the Pilot Regime.

2. Raising Caps (see suggested amendments in Appendix 1)

The current thresholds under the Pilot Regime are inadequate. They are low enough that six bond issuances of just under EUR 1 billion – the threshold for eligibility pursuant to Art 3(1)(b) of the DLT PR – would use up the entire capacity of a DLT TSS or DLT SS pursuant to Art 3(2) of the DLT PR, irrespective of the volume of trading in the bond. Given evolving market dynamics and the pace of growing issuances (outside of the DLT Pilot Regime and internationally), we recommend lifting the thresholds imposed by the Pilot Regime by 10x in keeping with broader market developments. In addition, to allow for more flexibility in the EU regime and the ability to ensure that the DLT Pilot Regime remains competitive and attractive, the Commission should maintain the power to remove the thresholds altogether through Delegated Regulation. Alternatively, the Commission could consider the ability to increase or lift the caps through a supervisory mechanism.

3. Achieving central bank collateral eligibility for instruments issued through the DLT PR (see suggested amendments in Appendix 2)

While not within the EC's direct remit, we support the Commission to coordinate with the ECB on ensuring instruments issued through the DLT PR received **central bank collateral eligibility**. In [Appendix 2](#), we have identified for the ECB's consideration a number of changes to be made to its General Documentation Guideline for this purpose. The main adjustments are to ensure that DLT SS and DLT TSS under the DLT PR are given the same status as CSDs for the purposes of the GDG, by explicitly recognising them and clarifying that a DLT-based digital wallet has the same status as a traditional book-entry account. Separately, the EC should also support the ECB in making available DLT-based central bank money, which would help support the growth of DLT-based capital markets.

Capital and liquidity treatment

A lack of technology neutrality in capital and liquidity regulation can prove a significant obstacle to DLT-based market development. In particular, divergent prudential treatment can create obstacles for banks to act as underwriters and intermediaries (including as market makers) for DLT-based securities, as this would unduly penalise their balance sheets.

Suggested changes:

- The EU implementation of BCBS standards on crypto assets should not penalise any DLT-based securities issuances or transactions.¹⁷
- Existing liquidity regulation should not preclude DLT-based securities from receiving the same treatment as traditional securities, including possible treatment as Level 1 High Quality Liquid Assets (subject to meeting the existing criteria).

¹⁷ Please find more details in the joint GFMA, IIF, ISDA, FIA, and FSF response to the BCBS Crypto Standard Amendments consultation: <https://www.gfma.org/correspondence/joint-response-to-bcbs-crypto-standard-amendments-consult/>

Long-term (2-5 years): Delivering on TFI

Reforming the DLT Pilot Regime is an immediate priority. There are, in addition, steps that need to be taken outside of the framework of the Pilot to facilitate the development of a Technology Financial Infrastructure (TFI) and create an environment in which DLT may be taken up by FMs and financial market participants more widely.

The current EU securities and settlement regulatory framework was not designed with the use of DLT in mind, and poses a number of regulatory blockers that undermine the economic value and function of DLT-based securities. For the EU to maintain its lead in DLT-based capital markets and capitalise on the opportunity to deliver on its policy objectives through the DLT, we support to Commission to launch a comprehensive assessment aimed at regulatory adjustments that ensure **the appropriate application of securities regulation throughout the lifecycle of DLT-based securities and fully leverage the technological benefits of DLT**. This assessment should commence **as soon as possible** in order to provide necessary regulatory certainty for market participants (at least by the end of the DLT Pilot Regime).

We acknowledge that changes will require a comprehensive assessment and consultation that could lead to drastic changes, and therefore urge this work to begin as soon as possible according to the following Roadmap:

- **Q1 2025:** EC to launch comprehensive consultation to assess:
 - Compatibility between the use of DLT and securities regulation, covering: Central Securities Depositories Regulation, Financial Collateral Directive, Settlement Finality Directive, also taking into account the findings of the EC study on national legal framework and obstacles for asset tokenisation in Member States¹⁸
 - The consultation should cover:
 - Re-examination of the securities registration requirement
 - Creation of a parallel framework to the CSDR for TFI which recasts the CSD core functions
 - New governance requirements
 - Financial collateral eligibility and permanent central bank collateral eligibility
 - Achieving settlement finality
 - Encouraging post-trade integration through the use of DLT
 - The consultation should have regards to:
 - Technological benefits of DLT for improving competition, accessibility, and information symmetry
 - Incentives for financial market participants to upgrade infrastructure
- **By Q4 2025:** comprehensive consultation to be completed
- **By H2 2026:** EC to adopt legislative proposal based on the outcome of the comprehensive assessment
- **H2 2026-H2 2028:** EU inter-institutional negotiations on and finalisation of the legislative proposal
- **By March 2029:** updated securities and settlement regime to enter into application

¹⁸ <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/tender-details/82c6b1b2-e156-4fe5-ba0f-4fbd10739fe4-CN>

The Comprehensive Assessment should cover:

1. Re-examination of the security registration requirement (CSDR Art. 3(2))

- **Background:** Art 3(2) of the CSDR provides: "Where a transaction in transferable securities takes place on a trading venue the relevant securities shall be recorded in book-entry form in a CSD on or before the intended settlement date, unless they have already been so recorded." Art 3(2) is a prerequisite for key economic functions (listing, tradability, and collateral eligibility) to be performed by securities, and there is recognition of the issues posed for DLT-based securities: Art 5(2) of the DLT PR allows for an exemption from Art 3 of the CSDR, provided that the applicant for the exemption can demonstrate that the use of "book-entry accounts" is incompatible with the particular DLT. However, there is no general disapplication of Article 3(2).
- **Problem:** without changes, DLT-based securities registered and settled by non-CSD DLT platforms (without CSD linkage) would not be able to enable key economic functionalities, such as tradability and collateral eligibility. This would impede the vision of enabling new business models (TFI) in settlement which could achieve greater connectivity, innovation and competition.
- **Proposed action:** the CSDR security registration requirement is an arrangement that is problematic for DLT-based securities. It should be addressed on a permanent basis, by ensuring that the regime permits non-CSD DLT platforms performing registration and settlement to settle securities traded by regulated venues (see Point 2 below).

2. Creation of a parallel framework to the CSDR for TFI which recasts the CSD core functions

- **Background:** the functional performance of CSD core functions envisaged by the concept of TFI (*as set out in the vision in Part 1*) derives from the IOSCO-CPMI Principles for Financial Market Infrastructure (PFMI), which define a CSD (ensuring integrity of securities issues and maintaining securities), securities settlement system (SSS), and notary functions separately (see table in [Appendix 5](#)).
- However, the EU CSDR bundles these functions together and defines a CSD as a legal person that performs settlement service (3), along with one or both of services (1) and (2) below:¹⁹
 - 1. Initial recording of securities in a book-entry system ('notary service');
 - 2. Providing and maintaining securities accounts at the top tier level ('central maintenance service');
 - 3. Operating a securities settlement system ('settlement service')
- According to the PFMI, central maintenance and settlement are in fact separate functions, and a CSD only needs to perform central maintenance services. However, in the EU, the design of the CSDR has effectively led to an outcome where there are no incumbent CSDs that provide settlement services without also

¹⁹ The reason for expressing the definition in these terms is that the operation of a securities settlement system (SSS) has been the core function of a CSD in all Member States. At the time that the United Kingdom was a Member State, it allowed service (1), which is in substance an issuer-facing service, to be performed by a different entity to the provider of services (2) and (3). Ireland, which had no independent CSD at the time the CSDR was adopted, followed the UK model.

providing central maintenance services. The only question is whether they also deliver the notary service themselves or provide for it to be undertaken by specialist registrars.²⁰

- To cater for the use of DLT in capital markets, a number of EU Member States (Germany, Luxembourg, and Italy) have introduced special authorisations for entities to perform functions for DLT-based securities akin to the specialist registrar, maintenance, and settlement services. However, such entities are not granted CSDR status as notaries, maintenance or settlement services, and therefore the securities registered and settled with them do not meet the CSDR Art. 3(2) security registration requirement (see above), unless otherwise registered with a CSD, and therefore do not benefit from tradability and, associated with that, collateral eligibility. This undermines the benefits of DLT, as well as the securities' economic function and attractiveness to investors. In [Appendix 5](#), we also map the roles of these specialist entities onto the CSD core functions and the PFMI.
- **Problem:** without changes to allow for the creation of a parallel framework to the CSDR for TFI that recasts the CSD core functions, the vision for DLT-based capital markets and its full benefits (including delivering on longstanding EU policy objectives based on TFI (*outlined in Part 1*) could not be achieved. In addition, the benefits associated with novel Member State regimes, which have led to innovation on a national basis, could not be realised on a cross-border basis within the EU. For example, due to a lack of harmonisation, an EU issuer or investor based outside of Germany faces legal uncertainty in issuing / accessing securities registered with a qualified "crypto securities registrar" in Germany.
- **Suggested action:** The EC's analysis should assess how to enable the development of a TFI that envisages CSD core functions to be recast and performed by individual actors on a network basis (in line with PFMI). This could include creating a workable EU-level regime for 1) qualified DLT-based securities registrars and notaries, such that these entities can fulfil the CSDR security registration requirement, and 2) maintenance and settlement services to be performed at the functional level. Such a regime would contemplate a network of arrangements for TFI to be constructed in an appropriate manner.²¹

3. New governance arrangements for TFI

- **Background:** CSDR includes governance arrangement considerations and requirements for CSDs. For example, pursuant to the CSDR, a user committee must be established for a CSD.²² However, the procedures to be followed are not completely consistent with the possibility of new individual governance arrangements for TFI entities performing the functions of maintenance of securities accounts and/or operation of securities settlement system.

²⁰ The utility of the definition is that it distinguishes CSDs from specialist registrars and intermediary custodians who internalise settlement by effecting transfers in their own books and records. In markets where the holder of record is an intermediary, the latter is an efficient method of recording positions – albeit, on a contractual basis.

²¹ We note that we are not recommending that this new regime limit or constrict the ability of market participants from performing core functions within the current regime today (for TFI or otherwise). In particular, from an EU framework law perspective, the core functions of notary and maintenance services can currently be performed by any person without requiring authorisation and likewise any person can perform the settlement function without requiring authorisation as a CSD except in relation to securities traded on regulated trading venues. This should not be impacted. The new framework would be a regime specifically envisaged and drafted appropriately for TFI whereby core functions would be performed on a network basis.

²² Art 28(1) of CSDR: "A CSD shall establish user committees for each securities settlement system it operates, which shall be composed of representatives of issuers and of participants in such securities settlement systems. The advice of the user committee shall be independent from any direct influence by the management of the CSD."

- **Problem:** as discussed in Part 1, one of the benefits of the use of DLT for capital markets is allowing different market participants to access and – depending on governance arrangements and permissioning – participate in the governance of the ledger, rather than concentrating all the different CSD functions in single actors. New governance arrangements, which distribute control in a less hierarchical manner, are one of the key innovations introduced by DLT, and should be assessed as part of the Commission’s assessment.
- **Proposed action:** we recommend that the Commission casts governance for the new framework for TFI (set out in our recommendations in Point 2 above) with the aim of facilitating 1) the use of DLT (including smart contracts) to make decisions about matters in the competency of users and developments²³, and 2) development of TFI. The EC assessment should explore how governance arrangements can continue to be applied at the individual (entity) level, but also whether additional network level requirements are needed for a TFI. For example, an appropriate network-level governance framework could cover: clear terms of reference, admission criteria, criteria for the ability to perform certain functions, coordination for business continuity planning, and a body which can police and enforce that framework/system. The requirement for a network-level governance entity can also be explored.²⁴

4. Financial collateral Eligibility

- **Background:** DLT-based financial instruments currently do not have eligibility as financial collateral, due to fact that the Financial Collateral Directive does not take a technology-neutral approach to the treatment of financial instruments in traditional book-entry accounts and those held on DLT or similar systems.
- **Problem:** Without changes to financial collateral eligibility rules, investors and underwriters do not deem DLT-based financial instruments to be equivalent to traditional financial instruments. In order to put DLT-based financial instruments on a level playing field with financial instruments that take other forms, we have identified a number of issues (including possession of collateral, conflict of laws arrangements) under the FCD that need to be examined and addressed.
- **Proposed Action:** the Commission should complete its review of the FCD (launched in 2021) to ensure that it provides a technologically neutral treatment for DLT-based financial instruments. Appendix 3 sets out , on a non-exhaustive basis, possible amendments to the FCD that would put DLT-based financial securities on a level playing-field as traditional financial instruments. The main adjustments are to clarify that a DLT-based digital wallet has the same status as a traditional book-entry account for the purposes of the FCD. Moreover, the Commission should seek to support the ECB in achieving central bank collateral eligibility (pursuant to the discussion above under the DLT Pilot Regime Quick Fix) for DLT-based instruments issued outside of the Pilot Regime on a permanent basis.

5. Settlement finality

- **Background:** the importance of settlement finality is that it changes the rules concerning the insolvency of a participant in a designated system in a limited way. Once transfer orders have been submitted to the system, they become binding in accordance with the rules of the system, even on the insolvency of the participant. They can also be binding if submitted in the period between the moment of insolvency and the time at which the system operator becomes or should have become aware of the insolvency. This

²³ For an overview of the use of smart contracts in financial services and risk mitigation solutions, please refer to the GFMA and GDF Smart Contract Primer: <https://www.gfma.org/policies-resources/gfma-and-gdf-publish-smart-contract-primer/>

²⁴ Please find more details in the Point 2 “Future proofing settlement functions” of AFME’s EU Policy Roadmap for Scaling DLT-based Capital Markets: https://www.afme.eu/Portals/0/DispatchFeaturedImages/AFME_DLT_SSA_Bonds_Policymaker_EU_05.pdf

prevents instructions being disclaimed or challenged by insolvency practitioners. Counterparties settling in a designated system have confidence that, once clearing procedures like trade matching have been concluded, and transfer orders have been submitted, a point is reached when they may rely upon the system to definitively reflect transfers. Even more importantly, settlement finality protects the integrity of the system as a whole. The designation of a system means that the failure of one or more participants won't disrupt the operations of the system by requiring actions to be reversed in conformance with applicable insolvency law. In the EU, the Settlement Finality Directive addresses the status of certain collateral in the event of a participant's insolvency; ringfencing it to discharge settlement obligations.

- **Problem:** The Settlement Finality Directive is designed to address the operations of traditional finance, including book-entry securities and bank money. As written, the Directive can address some elements of settlement involving DLT-based securities; however, we have identified possible outstanding changes that are required to put DLT-based securities and book-entry securities on the same legal footing.
- **Proposed action:** while settlement finality is key to the well-functioning of financial markets, it should not be predicated on the existence of a central, authorised FMI (CSD or CCP) which declares when transactions are final. The Commission should therefore complete its review of the SFD (launched in 2021) by investigating 1) application of the SFD in a DLT context, and 2) other ways to achieve legal settlement finality, e.g. by having a contractual framework between network participants as to when a transaction is final (for example, when a transaction is added to the distributed ledger). [Appendix 4](#) contemplates potential changes that could be made to the current consolidated version of the SFD in order to realise this objective.

6. Encouraging post-trade integration through the use of DLT

- **Background:** post-trade fragmentation (and as part of that, the interoperability of CSDs) is a pressing issue that has been on the EU agenda for many years. It is recognised that there will be merits for investors and issuers if CSDs are better aligned in the use of standards, and by the potential (and unprecedented) opportunity to create a common settlement layer with improved accessibility, a TFI can help improve post-trade integration and, ultimately, liquidity. There are important roles to play for incumbent CSDs in the transition to a token economy.
- **Problem:** TFI – in a mature stage – can offer opportunities for post-trade integration through greater and more seamless linkage between different participants and FMIs, potentially in the same network. However, given the current system's reliance on CSDs (due to market evolution and regulation), unless there are interfaces between traditional FMIs and new, DLT-based FMIs, then the risk is that securities markets will be fragmented further. The end goal should be to reduce – and, ultimately, remove – the obstacles to interoperability between and among incumbent CSDs and new entrants, and in an end state create a common network on which value added services and functions can be performed.
- **Proposed action:** the EC assessment should examine the benefits of DLT for integration the post-trade landscape, through different potential models.. This study should identify legislative and non-legislative solutions (such as standardisation) for establishing connectivity among TFI and distributed settlement actors (performing CSD core services at a functional level) and between such participants and existing CSDs through a shared settlement layer.

APPENDICES

APPENDIX 1: DLT PILOT REGIME – ‘QUICK FIX’ AMENDMENTS

1. Elimination of CSD authorization requirement for DLT SS

- Recital 14 of the DLT PR should be amended as follows:

The use of distributed ledger technology, by which all transactions are recorded on a distributed ledger, can expedite and combine trading and settlement in near real-time and could enable the combination of trading and post-trading services and activities. However, the combination of trading and post-trading activities within a single entity is not envisaged by the existing rules, irrespective of the technology used, due to policy choices related to risk specialisation and unbundling for the purposes of encouraging competition. The pilot regime should not be a precedent to justify a fundamental overhaul of the separation of trading and post-trading activities or of the landscape of financial market infrastructures. However, in view of the potential benefits of distributed ledger technology in terms of combining trading and settlement, it is justified to provide for a dedicated DLT market infrastructure in the pilot regime, namely, the DLT TSS, which combines the activities normally performed by multilateral trading facilities and securities settlement systems. It is also justified to provide for the functions of a DLT TSS which correspond to the core activities of a CSD under Regulation (EU) No 909/2014 to be performed separately by multiple entities under the pilot regime as a consortium (and such consortium may be authorised as a DLT TSS or DLT SS), provided that each of the entities is authorised under Regulation (EU) No 909/2014 or Directive 2014/65/EU.

- Recital 18 should be amended as follows:

~~A DLT SS should be a settlement system operated by a CSD authorised under Regulation (EU) No 909/2014, an investment firm authorised pursuant to Directive 2014/65/EU, or a credit institution as defined under Regulation 2024/1623/EU, in any case that has received a specific permission to operate a DLT SS under this Regulation. A DLT SS, and the CSD which operates it, should be subject to all relevant requirements under Regulation (EU) No 909/2014, and any other applicable Union financial services legislation, except for requirements in respect of which an exemption has been granted in accordance with this Regulation.~~

- Art 2(10) of the DLT PR should be amended as follows:

‘DLT trading and settlement system’ or ‘DLT TSS’ means a DLT MTF or DLT SS that combines services performed by a DLT MTF and a DLT SS (which may be organised in a single entity or in multiple entities which are acting as a consortium, provided that they are authorised under Regulation (EU) No 909/2014 or Directive 2014/65/EU);

- Insert a new Art. 5a, as follows:

Article 5a

1. An investment firm or credit institution operating a DLT SS shall be subject to:

- a) as applicable, the relevant requirements that apply to an investment firm under Regulation (EU) No 600/2014 and Directive 2014/65/EU,
- b) for credit institutions, the relevant requirements that apply to credit institutions under Regulation (EU) No 1623/2024 and Directive (EU) No 1619/2024,
- c) mutatis mutandis, the requirements that apply to a CSD under Regulation (EU) No 909/2014, with the exception of Articles 9, 16, 17, 18, 20, 26, 27, 28, 31, 42, 43, 44, 46 and 47 of that Regulation, provided that, in the event of any conflict or inconsistency between Regulation No 909/2014 and any financial services law applicable to such an investment firm or credit institution, the latter shall apply.

The first subparagraph does not apply in respect of those requirements from which the investment firm or credit institution operating the DLT SS has been exempted under Article 5(2) to (9), provided that that investment firm or credit institution complies with:

- a) Article 7;
- b) Article 4(2), (3) and (4) and Article 5(2) to (10); and
- c) Any compensatory measures that the competent authority deems appropriate in order to meet the objectives of the provisions in respect of which an exemption has been requested, or in order to ensure investor protection, market integrity or financial stability

- The introductory sentence of Art 6(1) of the DLT PR should be amended as follows:

An investment firm or market operator operating a DLT TSS (or part of it) shall be subject to:

- A new Art. 6(3) as follows:

Article 3(2) of Regulation (EU) No 909/2014 shall be deemed to have been satisfied if the securities or financial collateral have been recorded by a DLT SS or DLT TSS.

- Art 7(9) of the DLT PR should be amended as follows:

CSDs, investment firms, and credit institutions operating a DLT SS that are only permitted to operate a DLT SS under Article 9(2) of this Regulation and that do not indicate in their transition strategies that they intend to obtain an authorisation to operate a securities settlement system under Regulation (EU) No 909/2014, and investment firms, credit institutions or market operators operating a DLT TSS (or part of it), shall use best efforts to conclude arrangements with CSDs operating a securities settlement system to take over their operations, and shall specify those arrangements in their transition strategies.

- A new Art 7(11) should be added to the DLT PR as follows:

For the purposes of this section, references to an "operator of DLT market infrastructure" shall include each separate operator of part of a DLT market infrastructure in cases involving a consortium of any combination of investment firms, credit institutions, and CSDs.

- Art 9(1) of the DLT PR should be amended to read:

A legal person who is authorised as a CSD under Regulation (EU) No 909/2014 or as a credit institution or an investment firm may apply for a specific permission to operate a DLT SS under this Regulation.

- Art 9(12) of the DLT PR should be amended to read:

Without prejudice to Article 20 of Regulation (EU) No 909/2014, the competent authority shall withdraw a specific permission or any related exemptions where:

- (a) a flaw has been discovered in the functioning of the distributed ledger technology used, or in the services and activities provided by the CSD, investment firm or credit institution operating the DLT SS, that poses a risk to investor protection, market integrity or financial stability, and the risk outweighs the benefits of the services and activities under experimentation;
- (b) the CSD, investment firm or credit institution operating the DLT SS has breached the conditions attached to the exemptions;
- (c) the CSD, investment firm or credit institution operating the DLT SS has recorded financial instruments that do not fulfil the conditions set out in Article 3(1);
- (d) the CSD, investment firm or credit institution operating the DLT SS has exceeded the threshold referred to in Article 3(2);
- (e) the CSD, investment firm or credit institution operating the DLT SS has exceeded the threshold referred to in Article 3(3) and has not activated the transition strategy; or
- (f) the CSD, investment firm or credit institution operating the DLT SS obtained the specific permission or related exemptions on the basis of misleading information or a material omission.

- Art 13 of the DLT PR should be amended to read:

Where a CSD, investment firm or credit institution operating a DLT SS intends to introduce a material change to the functioning of the distributed ledger technology used, or to the services or activities of that CSD, investment firm or credit institution in relation to the DLT SS, and that material change requires a new specific permission, a new exemption, or the modification of one or more of that CSD's, investment firm's, or credit institution's existing exemptions or of any conditions attached to an exemption, the CSD, investment firm or credit institution operating the DLT SS shall request a new specific permission, exemption or modification.

Where a CSD, investment firm or credit institution operating a DLT SS requests a new specific permission, exemption or modification, the procedure set out in Article 5 shall apply. That request shall be processed by the competent authority in accordance with this Article.

2. Transaction thresholds

- The thresholds specified in Art 3(1) of the DLT PR should be amended as follows:
 - (a) ▪ shares, the issuer of which has a market capitalisation, or a tentative market capitalisation, of less than EUR [5] billion;
 - (b) ▪ bonds, other forms of securitised debt, including depositary receipts in respect of such securities, or money market instruments, with an issue size of less than EUR [10] billion, excluding those that embed a derivative or incorporate a structure which makes it difficult for the client to understand the risk involved; or
 - (c) ▪ units in collective investment undertakings covered by Article 25(4), point (a)(iv), of Directive 2014/65/EU, the market value of the assets under management of which is less than EUR [5] billion.

Corporate bonds issued by issuers whose market capitalisation did not exceed EUR [2] billion at the time of their issuance shall be excluded from the calculation of the threshold referred to in the first subparagraph, point (b).

- The threshold specified in Art 3(2) of the DLT PR should be amended as follows:

The aggregate market value of all the DLT financial instruments that are admitted to trading on a DLT market infrastructure or that are recorded on a DLT market infrastructure shall not exceed EUR [60] billion at the moment of admission to trading, or initial recording, of a new DLT financial instrument.

Where the admission to trading or initial recording of a new DLT financial instrument would result in the aggregate market value referred to in the first subparagraph reaching EUR [60] billion, the DLT market infrastructure shall not admit that DLT financial instrument to trading or record it.

- The threshold specified in Art 3(3) of the DLT PR should be amended as follows:

Where the aggregate market value of all the DLT financial instruments that are admitted to trading on a DLT market infrastructure or that are recorded on a DLT market infrastructure has reached EUR [90] billion, the operator of the DLT market infrastructure shall activate the transition strategy referred to in Article 7(7). The operator of the DLT market infrastructure shall notify the competent authority of the activation of its transition strategy and of the timescale for the transition in the monthly report provided for in paragraph 5.

- The thresholds specified in Article 5(8) of the DLT PR should be amended as follows:

By way of derogation from the second subparagraph of this paragraph, Title IV of Regulation (EU) No 909/2014 does not apply to a credit institution when it provides the settlement of payments using commercial bank money to a DLT market infrastructure that records DLT financial instruments whose aggregate market value, at the time of the initial recording of a

new DLT financial instrument, does not exceed EUR [60] billion, as calculated in accordance with Article 3(4) of this Regulation.

- The ability to adjust upward the thresholds through a Delegated Act through a new Art. 3a:

Article 3a

1. The Commission shall monitor the issue sizes and market values of DLT financial instruments against the thresholds specified under Article 3, including as regards the impact of those thresholds on the growth of issues and overall market value of DLT financial instruments.
2. The Commission shall be empowered in its discretion to adopt delegated acts to amend this Regulation by either:
 - a) Increasing the thresholds referred to in Article 3 and Article 5(8); or
 - b) Removing the thresholds referred to in Article 3 and Article 5(8).

Alternatively, a supervisory mechanism to increase or remove the thresholds could be added to the new Article 3a.

APPENDIX 2: PROPOSED AMENDMENTS TO THE EUROPEAN CENTRAL BANK LEGAL FRAMEWORK

- Art 2(25b) of Guideline (EU) 2015/510 of the European Central Bank of 19 December 2014 on the implementation of the Eurosystem monetary policy framework (General Documentation Guideline) (ECB/2014/60) (GDC) should be amended to read as follows:

'eligible SSS' means an SSS operated by a CSD, or a DLT SS or DLT TSS under Regulation (EU) 2022/858, that the Eurosystem has assessed as compliant with the eligibility criteria laid down in Annex VIa for use in Eurosystem credit operations and is published on the Eurosystem list of eligible SSSs on the ECB's website;

- Art 2(82) of the GDC should be amended to read as follows:

'securities settlement system' (SSS) means a securities settlement system as defined in point (10) of Article 2(1) of Regulation (EU) No 909/2014, which allows the transfer of securities, either free of payment (FOP), or against payment (delivery versus payment (DVP)), or a DLT SS or DLT TSS under Regulation (EU) 2022/858;

- Art 2(95) of the GDC should be amended to read as follows:

'tri-party agent' (TPA) means a CSD, or a DLT SS or DLT TSS under Regulation (EU) 2022/858, operating an eligible SSS that has entered into a contract with an NCB whereby such CSD, or a DLT SS or DLT TSS under Regulation (EU) 2022/858, is to provide certain collateral management services as an agent of that NCB

- Art 67(1) of the GDC should be amended to read as follows:

In order to be eligible, debt instruments shall be transferable in book-entry form, or through entries in wallets on DLT or similar systems, and shall be held and settled in Member States whose currency is the euro through an account with an NCB or with an eligible SSS, so that the perfection and realisation of collateral is subject to the law of a Member State whose currency is the euro.

- Art 67(2) of the GDC should be amended to read as follows:

If the CSD, or a DLT SS or DLT TSS under Regulation (EU) 2022/858, where the asset is issued and the CSD, or a DLT SS or DLT TSS under Regulation (EU) 2022/858, where the asset is held are not identical, the SSSs operated by these two CSDs, DLT SSs or DLT TSSs under Regulation (EU) 2022/858, must be connected by an eligible link in accordance with Article 150.

- Art 1 of Part I of Annex 4Ia of the GDC shall be amended to read as follows:

The Eurosystem determines the eligibility of an SSS operated by a central securities depository (CSD), or a DLT SS or DLT TSS under Regulation (EU) 2022/858, established in a Member

State whose currency is the euro or a national central bank (NCB) or a public body as specified in Article 1(4) of Regulation (EU) No 909/2014 of the European Parliament and of the Council (26) of a Member State whose currency is the euro (hereinafter an 'SSS operator' or an 'operator of an SSS') on the basis of the following criteria:

APPENDIX 3: POSSIBLE AMENDMENTS TO THE FINANCIAL COLLATERAL DIRECTIVE (FCD)

- Art 1(5) of the FCD should be amended to read as follows:

This Directive applies to financial collateral once it has been provided and if that provision can be evidenced in writing.

The evidencing of the provision of financial collateral must allow for the identification of the financial collateral to which it applies. For this purpose, it is sufficient to prove that the book entry securities collateral has been credited to, or forms a credit in, the relevant account **or wallet** and that the cash collateral has been credited to, or forms a credit in, a designated account **or wallet**.

This Directive applies to financial collateral arrangements if that arrangement can be evidenced in writing or in a legally equivalent manner.

- Art 2(g) of the FCD should be amended to read as follows:

"book entry securities collateral" means financial collateral provided under a financial collateral arrangement which consists of financial instruments, title to which is evidenced by entries in a register or account maintained by or on behalf of an intermediary, **or through entries in a wallet on DLT or a similar system;**

- A new Art 2(o) should be added to the FCS to read as follows:

"wallet" means software or hardware that enables a person to interact with a digital asset, for example, via the generation and management of public and/or private cryptographic keys.

- Art 9 of the FCD should be amended to ensure that the conflict of law provisions applies to digital assets.
- Art 13(1) of the FCD should be amended to read as follows:

Any question with respect to any of the matters specified in paragraph 2 arising in relation to book entry securities collateral shall be governed by the law of the country in which the relevant account is maintained. The reference to the law of a country is a reference to its domestic law, disregarding any rule under which, in deciding the relevant question, reference should be made to the law of another country. **For the purposes of this Article 13, a financial instrument held on DLT or similar system shall be deemed to be held in an account of the person who has control of the wallet or account to which the financial instrument has been credited. For the purposes of this Article 13, 'control' shall include possession of a private cryptographic key or other device that is required to transfer the financial instrument between wallets or accounts on the DLT or similar system.**

APPENDIX 4: POSSIBLE AMENDMENTS TO THE SETTLEMENT FINALITY DIRECTIVE (SFD)

- Art 2(i) of the SFD should be amended to read as follows:

‘transfer order’ shall mean:

- any instruction by a participant to place at the disposal of a recipient an amount of money by means of a book entry on the accounts of a credit institution, a central bank, a central counterparty or a settlement agent, or any instruction which results in the assumption or discharge of a payment obligation as defined by the rules of the system, or
- an instruction by a participant to transfer the title to, or interest in, a security or securities by means of a book entry on a register, or otherwise;

For the purposes of this Directive:

— an instruction may include the use of a cryptographic key or other device or method to digitally sign a transaction which has the same effect as the first and second indents;
and

— a register may include distributed ledger technology.

- Art 2(l) of the SFD should be amended to read as follows:

‘settlement account’ shall mean an account at a central bank, a settlement agent or a central counterparty, or an address on distributed ledger technology, used to hold funds or securities and to settle transactions between participants in a system;

APPENDIX 5: Mapping of CSD functions onto CPMI-IOSCO Principles for Financial Market Infrastructures and Novel Member State Frameworks

In alignment with the IOSCO-CPMI Principles for Financial Market Infrastructures and national regimes, we envisage the key roles, risks and considerations for the performance of CSD core functions as following:

CSD Core Function	Role (as set out by PFMI)	Do the PFMI require function to be performed by CSD?	Key considerations under PFMI:	Examples of standalone authorisation at functional level
<ul style="list-style-type: none"> ▪ Notary Service 	<p>A securities registrar is an entity that provides the service of preparing and recording accurate, current, and complete securities registers for securities issuers</p>	<p>No. A CSD may maintain the definitive record of legal ownership for a security; in some cases, however, a separate securities registrar will serve this notary function</p>	<p>N/A – as a securities registrar is not a FMI, the PFMI do not specify considerations for the operation of a securities registrar</p>	<ul style="list-style-type: none"> ▪ The UK has historically allowed notary services to be performed by a different entity to the provider of central maintenance and settlement services ▪ “Central account keeper” acting as agent for the issuer with respect to the maintenance of the register constituting the DLT-based bonds and top-tier accountholder and top tier account keeper of the DLT system which can be performed by an EU credit institution or investment firm (Luxembourg Blockchain Law) ▪ “Digital Register Manager” allowing qualified issuers

				<p>and managers to be authorised by CONSOB (Italian Fintech Decree)</p> <ul style="list-style-type: none"> ▪ “Crypto securities registers” (German Electronic Securities Law)
<ul style="list-style-type: none"> ▪ Central Maintenance Service 	<p>Maintains securities in an immobilised or dematerialised form for their transfer by book entry.</p>	<p>Yes, under the PFMI a CSD provides securities accounts, central safekeeping services, and asset services, which may include the administration of corporate actions and redemptions, and plays an important role in helping to ensure the integrity of securities issues. Key considerations are set out under PFMI 11 (CSDs – see considerations under next column).</p>	<ul style="list-style-type: none"> ▪ Appropriate rules, procedures, and controls, including robust accounting practices ▪ Prohibit overdrafts and debit balances in securities accounts ▪ Prevent unauthorised creation or deletion of securities ▪ Conduct periodic and at least daily reconciliation of securities issues maintained ▪ Maintain securities in an immobilised or dematerialised form for their transfer by book entry ▪ Protect assets against custody risk ▪ Asset segregation ▪ Identify, measure, monitor, and manage its risks from other activities that it may perform 	<ul style="list-style-type: none"> ▪ PFMI ▪ “Control agent” can maintain the issuance account, monitor the chain of custody, and reconcile positions in securities accounts – this can be performed by a MiFID investment firm or CRD credit institution (Luxembourg Blockchain Law)
<ul style="list-style-type: none"> ▪ Settlement Service 	<p>A securities settlement system (SSS) enables securities to be transferred and settled by book entry according to a</p>	<p>No, but PFMI note that in market practice, CSDs often perform SSS</p>	<ul style="list-style-type: none"> ▪ Measure and monitor credit risk (PFMI 4) ▪ Mitigate and manage credit risk (PFMI 4) ▪ Managing liquidity risk - maintain sufficient liquid resources in all relevant currencies to effect same-day 	<ul style="list-style-type: none"> ▪ PFMI ▪ “Central Account Keeper” that acts as top tier account keeper (Luxembourg Blockchain Law)

	set of predetermined multilateral rules ²⁵		<p>settlement, and where appropriate intraday or multiday settlement, of payment obligations with a high degree of confidence under a wide range of potential stress scenarios (PFMI 7)</p> <ul style="list-style-type: none"> ▪ Consider adopting RTGS or multi-bath processing during settlement day (PFMI 8 – settlement finality) ▪ When acting as an exchange-of-value settlement system, eliminate principal risk by linking the final settlement of one obligation to the final settlement of the other through an appropriate DvP, DvD, or PvP (PFMI 12) ▪ Fair and open access (PFMI 18) 	
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²⁵ Furthermore, the PFMI state: “Such systems allow transfers of securities either free of payment or against payment. An SSS typically allows transfers of securities either free of payment or against payment. When transfer is against payment, the SSS should provide delivery versus payment (DvP). DvP is settlement mechanism that links a securities transfer and a funds transfer in such a way as to ensure that delivery occurs if and only if the corresponding funds transfer occurs. An SSS may be part of a formal organisational structure that includes other FMIs, or it may operate as a completely independent entity with its own governance structure and operating rules. An independent SSS may also provide additional securities clearing and settlement services, such as the confirmation of trades and settlement obligations. An SSS may operate independently of, or as part of, a CSD. Further, an SSS can provide a guarantee of finality or settlement from the system itself or its participants for each transaction accepted by the system, or offer no form of guarantee at all and simply provide the technical operations of an SSS.”

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