

## 6. Specific thematic article: Distributed Ledger Technology (DLT)

### Markets in Crypto-assets (MiCA)

Axel Van Genechten

The work on dedicated EU legislation on crypto-currencies continues, as the original proposal by the European Commission called the “Markets in Crypto-Assets” Regulation (MiCA) is being refined through the involvement of various stakeholders. Released on 20 September 2020 as a result of the draft version being leaked, the proposal sets out to regulate any hitherto unregulated crypto-assets. By bringing this asset class under some form of supervision, the EU ensures a level playing field for consumer protection, market integrity, financial stability, monetary policy transmission, and monetary sovereignty, while simultaneously respecting the unique challenges of a budding industry.

Some argue in favour of strong restrictions, such as the Bank for International Settlements (BIS) in its consultative document on prudential treatment of crypto-exposures<sup>1</sup>. Believing that current activities in crypto-services may already pose a financial risk to banks, as a result of issuance of crypto-assets, service provision, or – in very limited cases – exposure, the BIS proposes a framework that divides crypto-assets into two major groups. One group could be treated according to the existing Basel framework, albeit with some modifications. This group, which is considered to be low risk, would comprise either tokenised versions of traditional assets, or crypto-assets which have a stabilisation mechanism. All the rights, interests and obligations would need to be clearly defined and legally enforceable in the respective jurisdictions. The assets’ design and the network would also need to incorporate adequate material risk mitigation. The entities that service these crypto-assets, particularly execution of transfers, redemptions, or settlement finality, need to be regulated and supervised. The other group, which would contain all crypto-assets other than those in the first group, would be subject to a conservative prudential regime, with a risk weighting of 1,250 %<sup>2</sup>. The final version of the Commission proposal is expected to be closely watched across the world, as the European Union remains the frontrunner in regulation of this delicate matter.

#### ***Main contents of the MiCA regulation***

The main focus of the initiative is to regulate so-called stablecoins, which are crypto-assets that possess underlying mechanisms or assets to support a relatively stable value. In particular, crypto-assets linked to underlying assets – both asset-referenced tokens and e-money tokens – are to be placed under closer supervision. Crypto-asset service providers (or CASPs) will also be subject to greater scrutiny, as these are the gateways between crypto-assets and the financial system.

<sup>1</sup> Available at <https://www.bis.org/bcbs/pub/d519.pdf>

<sup>2</sup> At a minimum capital requirement of 8 %, this would require a bank to hold € 1 for every € 1 in crypto-assets.

## E-money tokens

“Electronic money tokens” (or EMTs) are tokenised versions of traditional e-money, used as a means of payment rather than investment. The same regulatory requirements of EMD2<sup>1</sup> will remain applicable, while the definition is being revised to take technological changes into account (and thus avoid regulatory arbitrage). E-money institutions will be able to issue EMTs, as will credit institutions, in accordance with the requirements applicable to them. In order to ensure that the appropriate crypto-assets are captured, any EMT denominated in euro or another European Union currency will be assumed to be offered to the public, and subsequently subject to these requirements.

A white paper<sup>2</sup> will need to be notified to the appropriate national competent authority (NCA) and published, ensuring transparency and accountability. Other notable rules concern the investment of funds received, redemption rights, consumer protection, marketing communications, and liability. Under these rules, it will not be possible to remunerate consumers with an interest payment.

## Asset-referenced tokens

Asset-referenced tokens (or ARTs) are defined as *a type of crypto-asset that purports to maintain a stable value by referring to the value of several fiat currencies that are legal tender, one or several commodities or one or several crypto-assets, or a combination of such assets*. In cases where they qualify as financial instruments or are covered by other regulations, the latter would take precedence. Issuers will be required to provide adequate legal reasons why the ART does not fall under any other regime.

The procedure for authorising ARTs is to be stricter than the procedure for EMTs, as the white paper will need the regulator’s approval (rather than just needing to be notified). Except for the investment of funds, they will be subject to the same rules. However, the reserve of assets is strictly monitored with regard to the composition, management, and custody of the assets. Nevertheless, in cases where regulators have reason to believe that financial stability, monetary policy transmission or monetary sovereignty are at risk, they maintain the right to refuse authorisation to any issuer.

## Crypto-assets other than ARTs/EMTs

Those assets that do not fall under either of these categories, and are not yet otherwise regulated, will be subject to a “light touch” regime. This entails a simple registration requirement with the appropriate NCA rather than *ex ante* approval. While not under strict supervision, those entities would be required to notify and publish a white paper, similar to the procedure for EMTs. These entities may be liable if their white papers do not comply with the regulatory standards. Strict conditions will also be imposed on the marketing allowed for these assets, ensuring an adequate degree of consumer protection.

## Crypto-asset service providers

The provision of services for crypto-assets is limited to credit institutions and other regulated entities, or those granted specific NCA authorisation. The services envisaged are custody, operation of trading platforms, exchange of crypto-assets, execution of crypto-assets, and provision of advice on crypto-assets, and will be recorded in a central register of authorised crypto-asset services maintained by ESMA.

1 Directive 2009/110/EC of the European Parliament and of the Council of 16 September 2009 on the taking up, pursuit and prudential supervision of the business of electronic money institutions amending Directives 2005/60/EC and 2006/48/EC and repealing Directive 2000/46/EC (‘Electronic Money Directive’ or ‘EMD2’).

2 Containing a description of the issuer’s governance arrangements, the reserve of assets, the custody arrangements, the investment policy of the reserve and the rights granted to the holders.

The requirements for service providers will consist of general rules, plus rules specifically linked to a particular service. General organisation requirements will be imposed in order to establish an appropriate governance structure. Other rules pertain to such topics as prevention of conflicts of interest, outsourcing, and conditions on the investment of funds received from consumers.

### **Conclusion**

While the final version is not expected to materialise soon, many spectators from both the traditional financial industry and the upcoming crypto-asset sector find elements that they value in this new legislation. Striking a balance between risk management and freedom to innovate is often a delicate affair in areas of great potential financial impact. This challenge is only exacerbated by the novelty of the underlying technology, and the creative applications that may yet arise. Nevertheless, the Commission remains confident that its proposal has found a way to introduce fairness and transparency in line with existing protections while allowing European citizens and enterprises the opportunity to engage in this novel technology.

## **CBDC: the digital euro in 2021**

Axel Van Genechten

The ECB and other central banks of the Eurosystem have been working intensively since the 2020 release of their report on a digital euro. In this report, they described the various ways a proprietary digital currency could contribute to the financial and payments system in the eurozone, as well as possible design choices. They have not yet decided whether to launch such a digital currency, or CBDC<sup>1</sup>, preferring to allow time for a prolonged investigation of this question.

One of the main objectives would be to guarantee access to central bank money, which is issued by central banks. For individuals, only cash satisfies this requirement. The decline of cash, which is more pronounced in some jurisdictions than others, has led to concerns that its acceptance may not remain universal. While its existence is supported and guaranteed by central banks, its use in a digital context or in the case of adverse market trends may lead to practical challenges. Commercial banks and payment institutions offer their own versions of digital money, albeit in the form of commercial bank money, which exists in the form of a liability of the bank or payment institution. Alternative payment solutions, such as crypto-currencies or those created by technology companies across the globe, may make further inroads into the European market while creating a risk of evasion of adequate oversight. Efforts are being made to regulate these entities<sup>2</sup>, but offering an attractive alternative may yet prove a bulwark against such incursions. Rather than compete against (European) commercial players, the project intends to involve the market in bringing this solution to consumers. Institutions offering various value-added services could benefit from the positive network effects, together with enterprises throughout the EU.

Stakeholders have been involved from the start in defining the characteristics of the project. A public consultation which attracted record participation was organised, and the results published in April 2021 indicated that citizens and market participants were in favour of a digital euro. Particular topics of note were privacy, security, and the involvement of existing payment infrastructures, financial intermediaries and market participants. An experimentation phase was set up as well, in order to ensure that policy and design choices would not be hindered by technological barriers. It showed that it was possible to create a DLT-based solution with a

1 Central bank digital currency.

2 See previous article on MiCA.

very low environmental impact, to have a high degree of privacy without compromising on AML, to reuse existing infrastructure while integrating new technology (such as E-ID), and to maintain financial stability via mitigating measures.

In October 2021, the investigation phase officially took off, leading to a two-year exploration of whether to issue a digital euro, and what it would look like. Some of the main questions concern which use cases would be supported, the interaction with the European retail market, the business model, features and functionalities, underlying technology, and the legal implications. In order to deal with these questions, the High-Level Task Force on CBDC, consisting of central bankers from the Eurogroup, was called upon to analyse these issues. In order to include views from the private sector, the Market Advisory Group, consisting of 30 very senior individuals with experience in the European retail payments market, will also contribute their expertise to the project. Focus groups will be organised to involve the general public as well as merchants. A prototype will also be built to test the design in practice. In either case, a final decision is only expected in two years' time.

## Tokenisation of securities

Steven Van Cauwenberge

### Introduction

In recent years, distributed ledger technology (DLT), has gained a lot attention in the financial world, including that of financial market infrastructures. Many projects involving public and private entities were conducted to test the potential use of DLT in real-life situations<sup>1</sup>. A few of these projects resulted in the application of DLT-based services by existing traditional FMIs. In addition, a new type of FMI can be authorised, offering both trading and settlement services entirely based on DLT.

The Bank expects that DLT will gain even more traction in the coming year, as large players in the industry, both within and outside of the EU, are expected to launch new services using DLT. This includes exchanges, CCPs, CSDs, (global) custodians and potentially new hybrid forms of FMIs.

This article focuses on the tokenisation of securities and their post-trade processing via DLT. A distributed ledger (DL) is a decentralised record-keeping database where states can be changed. DLT refers to the processes and related technologies that enable nodes in a network (or arrangement) to securely propose, validate and record state changes (or updates) to a synchronised ledger that is distributed across the network's nodes.<sup>2</sup> The integrity of the records is ensured by their immutability and via the use of consensus-based validation protocols and cryptography.

In the post-trade space, DLT can be – and is – used to record (securities) ownership and transfers, thus providing custody and settlement services. DLT and the tokenisation of securities is said to have the potential to simplify clearing and settlement processes while reducing costs and increasing security.

1 E.g., in April 2021, the ECB published the paper "The use of DLT in post-trade processes" (available at [https://www.ecb.europa.eu/pub/pdf/other/ecb.20210412\\_useofdltposttradeprocesses~958e3af1c8.en.pdf](https://www.ecb.europa.eu/pub/pdf/other/ecb.20210412_useofdltposttradeprocesses~958e3af1c8.en.pdf)). For an overview of projects of tokenised settlement, see the annex of the article "On the future of securities settlement" (BIS Quarterly review, March 2020, available at <https://www.bis.org/publ/qtrpdf/rqt2003i.htm>).

2 See CPMI – Distributed ledger technology in payment, clearing and settlement – an analytical framework – February 2017 (available at <https://www.bis.org/cpmi/publ/d157.htm>).

### *Tokenisation of securities and their processing via DLT*

Tokenisation of securities is the digital representation of securities using DLT. See box 10 for a summary overview of DLT concepts. The holder of a tokenised security will be entitled to rights similar to those associated with a conventional security. Tokenised securities may be either native, i.e. they exist as a token on the ledger from their origination onwards, or they may be the tokenised representation of pre-existing conventional securities.

Securities tokenisation is inspired by the technology behind Bitcoin, a peer-to-peer network solution where transfers are made without the need for a trusted third party. Due to the characteristics of a DL, securities could be transferred without the need for a trusted party as is typically the case today, where a CSD fulfills this role in most cases. Despite the technological potential for a decentralised securities settlement platform, current industry applications have, in practice, reintroduced trusted parties via the use of a central administrator and restricted participation, whereby the identity of the participants is known.

A distributed ledger holding and transferring securities is a record-keeping database where transfers are made by changing the states on the ledger. On a permissionless (public) ledger, each node may intervene in transferring a security and may even have a full readable copy of each transfer. For holding, transferring and processing securities in a trading and post-trading environment, there is a (legal) need for confidentiality e.g. because the disclosure of participant securities positions is detrimental. Selective and restricted access and permissioned processing – with selective writing and reading rights – is therefore appropriate. In that case, the validation of changes on the ledger is done by the trusted participants or a subset thereof (permissioned DL). Furthermore, to establish the rules of operation of a DLT-based FMI, central governance is needed, usually in the form of a single trusted and liable party.

DLT can be used to provide securities holding and settlement, and thus to provide CSD services. The core CSD services – according to the CSDR – concern keeping the records of the securities issued (notary function), the (centralised) maintenance and servicing of securities accounts, and settlement of securities trades. The processing of securities on a DLT-based platform typically includes the use of so-called smart contracts, for example to process coupon payments or to provide delivery-versus-payment settlement.

#### BOX 10

## Distributed Ledger Technology (DLT) Terminology

**Distributed ledger** – DLT enables the decentralisation of record-keeping. It refers to the recording and sharing of data across multiple data stores or ledgers. It allows for transactions and data to be recorded, shared, and synchronised across a distributed network. A DL is not centrally maintained but distributed across the nodes of a network where a node is controlled by one of the network participants. Different nodes can have different roles and a subset of nodes can perform the same roles.

**Blockchain** – DLs may store and transmit data in packages called blocks. In a blockchain the data are batched in blocks to the DL using cryptography. If a token is held and transferred on a blockchain, the decentralised ledger maintains the history of all transactions.



**Validation** – DLs are categorised as permissioned or permissionless, depending on whether network participants (nodes) need permission from any entity to make changes to the ledger. In permissioned systems a limited number of selected users is able to read and write to a ledger. Updating of the ledger state occurs via a validation protocol. Permissionless validation of the ledger uses a consensus mechanism without knowing the identity of the participants. The algorithm may require the majority of the nodes to intervene and can be costly to physically process. Permissioned validation is faster and less physically costly but depends on fewer parties. It is more vulnerable to censorship or collusion and thus requires trust between the participants and appropriate, selective access. Examples of permissioned blockchains are Fabric's Hyperledger and R3's Corda that focus on the financial industry.

**Openness (Access)** – Distributed ledgers are frequently categorised as public or private depending on whether the ledgers can be accessed by anyone or only by the participating nodes in the network. For a private DL, centralised governance will be in place. A permissioned DLT where the data is validated only by a set of participants would be considered a private, permissioned ledger.

**Smart contracts** – A DL can also include pre-arranged automated executable code, known as "smart contracts". They can automate the implementation of decisions by allowing self-executing code to take actions at specified times and/or based on reference to the occurrence (or non-occurrence) of an action or event.

### ***Benefits and challenges of DLT for post-trade securities processing***

DLT has the potential to reduce costs and complexity for securities services but also entails existing or new challenges. Generally speaking, the settlement risk (i.e. liquidity, principal and replacement cost risks<sup>1</sup>) does not disappear when DLT is used to process securities transfers. These risks are independent of the underlying technology used to transfer securities. Neither do the legal<sup>2</sup> and operational risks disappear. Benefits and challenges are still being debated by market participants and stakeholders.

**Main benefits** frequently presented include the *reduction of reconciliation needs*, that is now an integral feature of the way the DL itself functions. Decentralisation of the ledger also *avoids the presence of a single point of failure*, and elimination of the requirement to centrally maintain back-up systems could lead to cost savings. DL would also facilitate the introduction of *shorter settlement periods* for securities settlement, thus reducing the settlement risk (replacement cost) incurred over the period. Some studies indicate that an end-of-day T+0 settlement period may be optimal, taking into account the need to pre-position cash and securities for settlement<sup>3</sup>. The shorter settlement period over which counterparty risk is incurred would reduce the CCP's margin requirements, or could even call into question the relevance of interposing a central counterparty in standard cash market trades. Furthermore, it could *facilitate direct ownership holdings* by investors instead of

1 Generally speaking, principal risk in securities settlement is taken care of by processing the securities trade in "delivery versus payment" (DvP) mode; while the replacement cost risk incurred over the settlement period can be covered via collateralisation or via the interposition of a central counterparty.

2 In what follows, we only focus on some legal issues specific to securities processing in DL mode, but broader risks and the corresponding regulations, such as know-your-customer requirements and the regulations to combat money laundering and the financing of terrorism remain applicable.

3 See, for instance, the Euroclear project to settle French government bonds in central bank digital currency with blockchain, available at <https://www.euroclear.com/newsandinsights/en/press/2021/2021-mr-24-cbdc-to-settle-french-government-bonds.html>

securities being held indirectly through a chain of custodians. Disintermediation may thus reduce the reliance on (chains of) intermediaries and the related operational and legal risk, and make the beneficiary ownership more transparent for the issuer.

**Challenges** remain for the implementation of DLT for securities processing, and new risks may arise. Even if the ledger embeds validation processes providing integrity, a trusted body – a *single entity such as a CSD or a set of trusted validators* – *may still be needed* to guarantee the validity of the securities issued (notary function). *Legal questions* arise both where existing (non-native) securities are tokenised (what constitutes the “golden copy”?) and where securities issuance occurs directly in DL form (native token). Another legal challenge concerns determining when a securities transfer order becomes final in a DL environment. The operation of an immutable DL that includes smart contract processing may require *appropriate exception management* in the event of potential operational errors, but also for example in the event of issuer or participant defaults requiring some discretionary actions. Besides these “going concern” challenges, the recovery and resolution specificities of the operator(s) need to be clarified. *Interoperability* of a token-based system with a standard account-based system has to be guaranteed, especially to enable DvP settlement. In that case, the securities token DL has to interact with the cash leg. As digital central bank money is not currently available for the euro, the DL would have to interact via an interface with the cash accounts of participants held externally. In a transition phase, interoperability between DL-based and legacy systems may be required. More generally, the lack of interoperability between systems may also cause a lack of competition. For financial market transactions, it is essential to guarantee pre- and post-trade anonymity and the *confidentiality* of the positions and the transfers. For FMI applications, scalability is key and may require validation of a transfer by only a subset of participants. Last but not least, the securities holding and processing has to be *cyber resilient*, requiring e.g. appropriate identity and access management and identity verification. DL algorithms to operate in a distributed mode to reach consensus (e.g. proof-of-work) might still be vulnerable in certain cases. Business continuity arrangements will have to take into account DL specificities.

All in all, the benefits and challenges indicate that financial services DLs, including securities processing market infrastructures, will operate by assigning particular roles to a range of entities. The governance of the arrangement will determine whether issuers and end-investors, and intermediaries and infrastructure operators providing issuer and investor services, will take up more or less the same roles, or may be disintermediated in certain regards. Given the above challenges there could be significant implementation risks if market participants or infrastructures seek a first-mover advantage and deploy solutions without sufficient testing.

### **Regulatory responses**

National and/or EU legislation takes a two-track approach with regard to DL. On the one hand, DLT post-trade services for tokenised securities that qualify as financial instruments under the existing MiFID legislation<sup>1</sup> can be provided under the existing (adapted) legislation. On the other hand, a number of jurisdictions have set up a dedicated regime for exploring DLT for securities tokenisation via a so-called “sandbox” approach. In this vein, the EU legislators are enacting a pilot regime (see box below). Under the pilot regime, DLT market infrastructures providing trading and/or settlement services are temporarily exempted from specific legal requirements that could otherwise prevent them from developing and deploying DLT-based services, without weakening existing requirements and safeguards.

### **Use of DLT under the existing national and EU legislation**

In general, tokenised securities are considered to qualify as financial instruments in the legal sense and hence to be regulated by existing financial instruments regulation.

<sup>1</sup> For crypto-assets not qualifying as financial instruments in this sense, a dedicated EU-level regime will be created in the MiCA regulation.

**Belgian law** – As the recording of securities is part of national corporate and/or securities law that is not harmonised at EU level, several EU jurisdictions have introduced legislation that allows securities to be issued or recorded using DLT, whereby the existing securities laws remain applicable. Under Belgian law, as adapted on 27 June 2021<sup>1</sup>, securities accounts can be kept in – or by means of – secured mechanisms for electronic registration, including mechanisms for distributed electronic registration (i.e., DLT). The new law, however, does not explicitly deal with the tokenisation of securities since a securities account would still be required.

**EU legislation** – EU legislation for securities issuance, trading and post-trade processing remains applicable. Under CSDR, issuers are obliged to use a regulated CSD to hold their securities traded on a trading venue or used in a financial collateral arrangement<sup>2</sup>. Existing financial market infrastructures – including CSDs – can develop post-trading services for crypto-assets which qualify as financial instruments or are based on DLT, under the existing EU financial services legislation. For CSDs, the CSDR continues to apply. Processing tokenised securities by CSDs is currently problematic, as it is not always clear how certain requirements of CSDR could be met in a DLT context. In a report dated 2 August 2021<sup>3</sup>, ESMA enumerated a number of points needing clarification. These include legal clarifications related to securities holding and transfers, and requirements on outsourcing rules and on procedures and standards for communication.

### EU pilot regime

In September 2020 the European Commission proposed a draft regulation for a pilot regime for market infrastructures as part of its Digital Finance package, and in December the EU Parliament and member states reached a provisional political agreement<sup>4</sup>. The regime creates a new EU status for market infrastructures based on DLT in a context of conditional and regulated experimentation. It aims to identify regulatory obstacles to DLT and may eventually lead to a more permanent and adapted regulatory regime for trading and post-trading services. See box 11 for a further description.

1 Title V (Arts. 407 ff.) of the Law of 27 June 2021 containing various financial provisions adapted to that end the Belgian Royal Decree n° 62 of 10 November 1967 on the deposit of fungible financial instruments and their settlement; the Belgian Law of 2 January 1991 relating to public debt securities, the Belgian Law of 28 April 1999 implementing the EU Settlement Finality Directive, and the Belgian Company Code of 23 March 2019. Belgian executive law may further specify the conditions for safe use of mechanisms for distributed electronic registration.

2 See Art. 3 CSDR.

3 See the ESMA report of 2 August 2021 on the use of FinTech by Central Securities Depositories (CSDs), available at <https://www.esma.europa.eu/press-news/esma-news/esma-publishes-its-report-use-fintech-csds>. The Commission announced in its Report to the European Parliament and the Council under Article 75 of CSDR (available at [https://ec.europa.eu/finance/docs/policy/210701-csdr-report\\_en.pdf](https://ec.europa.eu/finance/docs/policy/210701-csdr-report_en.pdf)) that it will further consider the issue, referring to the market demand that CSDR is to be “technology-neutral”.

4 The Commission proposal and the provisionally agreed text of 16 December 2021 for an EU Regulation on a pilot regime for market infrastructures based on distributed ledger technology, is available at <https://www.consilium.europa.eu/en/press/press-releases/2021/12/21/distributed-ledger-technology-member-states-endorse-agreement-reached-with-european-parliament/>

## BOX 11

### The EU pilot regime for market infrastructures based on DLT

**Eligible operators** – Under the pilot regime, authorised investment firms and market operators are eligible to apply for permission to operate a so-called DLT multilateral trading facility (DLT MTF), while authorised central securities depositories (CSDs) can apply for permission to operate a so-called DLT settlement system (DLT SS). In both cases, the applicable rules of MiFID II and CSDR respectively



apply, except where specific exemptions are granted under the pilot regime. In order to allow end-to-end processing over the whole securities value chain, the same eligible entities are also allowed to operate a so-called DLT trading and settlement system (DLT TSS). Finally, DLT access to the three DLT market infrastructure types is also open to new entrants, under the same conditions.

**Eligible securities** are shares, bonds with standard characteristics and UCITS. For each category, a maximum market capitalisation upon admission or recording in the DLT market infrastructure applies. For financial stability reasons, a limit on the total market value admitted or recorded per DLT market infrastructure is set at € 6 bn.

**Permission** to operate a DLT market infrastructure and conditional exemptions are granted by the relevant national competent authority (NCA)<sup>1</sup>, and apply exclusively to the DLT FMI services. The NCA is required to consult with the European Securities and Markets Authority (ESMA) as part of the decision-making process. Permission means granting a passport to provide the DLT-based services across the EU. ESMA will issue guidelines to harmonise the approaches taken across the EU, specifically to ensure the consistency of the exemptions granted.

**Exemptions** – In general, each exemption from MiFID and/or CSDR requirements is to be proportionate and justified by the use of DLT. Exemptions granted are therefore conditional upon proposing compensatory measures that meet the objectives of the exempted provision.

Available exemptions from MiFID II requirements include:

- the intermediation obligation, to allow retail clients to deal on their own account; and,
- the transaction reporting requirement, to allow an alternative way of keeping and accessing the records.

Available exemptions from CSDR requirements include:

- the measures to prevent and address settlement fails;
- the rules referring to the notion of 'securities account' or 'book-entry form', so as to allow the recording of DLT financial instruments on a distributed ledger;
- requirements for participation, transparency and communication procedures with participants and other market infrastructures;
- the requirement of authorisation for outsourcing CSDR core services;
- exemption from the notion of participant to allow direct access for retail investors;
- exemption from the designation as a settlement system under the EU Settlement Finality Directive, and from the provision of CSDR on settlement finality;
- exemption from the CSDR rules on cash settlement to develop solutions through access to commercial bank money or the use of 'e-money tokens'; and,
- exemption from the requirement to give access to another CSD or market infrastructures on a non-discriminatory and transparent basis if this is disproportionate to the size of the DLT SS.

**Additional requirements** – The pilot regime also imposes additional requirements on eligible operators, in order to address the novel forms of risk raised by the use of DLT. Thus, the operator of the DLT

<sup>1</sup> See Art. 1(22) of the pilot regime Regulation. The competent authority is normally the one designated under MiFID and CSDR, but Member States can designate other authorities.



market infrastructure granted permission has to devise a business plan and set out how the DLT market infrastructure functions and what the obligations are for all parties involved. The operator of a DLT market infrastructure has to ensure the adequacy of the overall IT and cyber arrangements. He is held liable in the event of loss of funds. As the permission and exemptions are temporary, an exit strategy has to be drawn up from the outset.

**Duration of the pilot regime** – The pilot regime is temporary in principle and is expected to run for a period of six years. Prior to the expiry of this period, there will be a review to decide whether the pilot regime should be extended, amended, made permanent or terminated.

### **Concluding remarks**

DLT seems to have its role in securities processing. The DLT configuration adopted for securities issuance and securities transfers will determine the benefits, risks, and costs involved and how they are distributed. It is difficult to predict how DLT might affect the settlement industry. FMs – at each level of the trading-clearing-settlement value chain – are networks. At the settlement level, a CSD brings together issuers and investors, and the intermediaries providing services to them. Network externalities will co-determine where costs and benefits arise. DLT may also not be the simplest and most efficient solution available. In the near term, existing CSDs and intermediaries may use DLT to lower operating costs without significant changes to business models. In the longer term, implemented solutions may re-design aspects of markets or post-trade services, and new forms of intermediation and concentration may emerge.

For regulators and supervisors, it remains important to further analyse the potential benefits and risks of the use of DLT in securities holding and settlement in market infrastructures. The liquidity and credit risks that arise in securities settlement do not disappear when securities transfers are processed with DLT. Neither do the legal and operational risks related to holding and transferring securities. Where existing national and EU legislative frameworks for securities settlement in financial market infrastructures seem adequate in principle to accommodate DLT, they may have to be formally adapted or at least clarified for a number of aspects. A continued learning process and fine-tuning remain required. To that end, both the applications that went live in the recent past and that will start to operate under the “sandbox” approach set up by the EU pilot regime for market infrastructures are expected to provide valuable experience and insights.