Report on the DLT Pilot Regime

On the Call for Evidence on the DLT Pilot Regime and compensatory measures on supervisory data

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ESMA • 201-203 rue de Bercy • CS 80910 • 75589 Paris Cedex 12 • France • Tel. +33 (0) 1 58 36 43 21 • www.esma.europa.eu

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1 Executive Summary

Reasons for publication

The Regulation on a pilot regime for market infrastructures based on distributed ledger technology (DLT) ("the DLT Pilot") aims at developing the trading and settlement for 'tokenised' securities. The DLT Pilot entered into force on 23 June 2022 and will start applying on 23 March 2023. The DLT Pilot requires ESMA to assess whether the regulatory technical standards (RTS) developed under MiFIR relative to certain pre- and post-trade transparency and data reporting requirements need to be amended to be effectively applied also to securities issued, traded and recorded on DLT.

ESMA conducted a call for evidence from 4 January 2022 to 4 March 2022 to seek feedback on the need to amend the RTS on transparency and data reporting requirements. In addition, ESMA organised a workshop on 31 March to discuss feedback received to the call for evidence. This report presents the feedback received and the proposed way forward.

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Based on the feedback received, ESMA does not consider it necessary to amend the RTS on transparency and data reporting requirements for the purpose of the DLT Pilot. However, ESMA recognises that for certain technical elements guidance on ESMA's expectations would contribute to a consistent application of the DLT Pilot. ESMA intends to issue such guidance either before the application of the DLT Pilot, or based on first experiences of the Pilot, as appropriate.

Based on the feedback received, ESMA considers it important to already at this stage make some recommendations on compensatory measures that NCAs should request to ensure the integrity, completeness, consistency, usability, and comparability of the supervisory data collected from DLT Market Infrastructures. ESMA does not intend to provide guidance on other compensatory measures at this stage.

Section 3 presents the main elements of the DLT Pilot. Section 4 presents feedback from stakeholders on the use of DLT for trading and settlement. Section 5 discusses the feedback received on the RTS on pre- and post-trade transparency and data reporting requirements and the way forward. Finally, Section 6 presents feedback received to the possibility of regulators directly accessing the DLT.

Next Steps

Following the publication of this report, ESMA will work on supervisory guidance clarifying the application of certain elements of the RTS on transparency and data reporting requirements. ESMA also intends issuing guidance on questions received by various stakeholders on the DLT Pilot to contribute to the convergent application of the DLT Pilot.

Acronyms used

CCP	Central Counterparty
CfE	Call for Evidence
DLT	Distributed Ledger Technology
EC	European Commission
ESA	European Supervisory Authorities
ESRB	European Systemic Risk Board
ESMA	European Securities and Markets Authority
ETF	Exchange Traded Fund
EU	European Union
FIGI	Financial Instrument Global Identifier
FIRDS	Financial Instruments Reference Data System
FITRS	Financial Instruments Transparency System
ISIN	International Securities Identification Number
LIS	Large in Scale
MI	Market Infrastructure
MIC	Market Identifier Code
MiFID II	Directive 2014/65/EU of the European Parliament and the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU
MiFIR	Regulation (EU) No 600/2014 of the European Parliament and of the Council on markets in financial instruments and amending Regulation (EU) No 648/2012
MTF	Multilateral Trading Facility
NCA	National Competent Auhority
NT	Negotiated trade
OTC	Over-the-counter
OTF	Organised Trading Facility
OMF	Order Management Facility
PoS	Proof-of-stake
RM	Regulated Market
RTS	Regulatory Technical Standard
RTS 1	Commission Delegated Regulation (EU) 2017/587 of 14 July 2016 supplementing Regulation (EU) No 600/2014 of the European Parliament and of the Council on markets in financial instruments with

regard to regulatory technical standards on transparency requirements for trading venues and investment firms in respect of shares, depositary receipts, exchange-traded funds, certificates and other similar financial instruments and on transaction execution obligations in respect of certain shares on a trading venue or by a systematic internaliser.

RTS 2	Commission Delegated Regulation (EU) 2017/583 of 14 July 2016 supplementing Regulation (EU) No 600/2014 of the European Parliament and of the Council on markets in financial instruments with regard to regulatory technical standards on transparency requirements for trading venues and investment firms in respect of bonds, structured finance products, emission allowances and derivatives.
RTS 3	Commission Delegated Regulation (EU) 2017/ 577 of 13 June 2016 supplementing Regulation (EU) No 600 / 2014 of the European Parliament and of the Council on markets in financial instruments with regard to regulatory technical standards on the volume cap mechanism and the provision of information for the purposes of transparency and other calculations
RTS 22	Commission Delegated Regulation (EU) 2017/590 of 28 July 2016 supplementing Regulation (EU) No 600/2014 of the European Parliament and of the Council with regard to regulatory technical standards for the reporting of transactions to competent authorities
RTS 23	Commission Delegated Regulation (EU) 2017/585 of 14 July 2016 supplementing Regulation (EU) No 600/2014 of the European Parliament and of the Council with regard to regulatory technical standards for the data standards and formats for financial instrument reference data and technical measures in relation to arrangements to be made by the European Securities and Markets Authority and competent authorities
RTS 24	Commission Delegated Regulation (EU) 2017/580 of 24 June 2016 supplementing Regulation (EU) No 600/2014 of the European Parliament and of the Council with regard to regulatory technical standards for the maintenance of relevant data relating to orders in financial instruments
RTS 25	Commission Delegated Regulation (EU) 2017/574 of 7 June 2016 supplementing Directive 2014/65/EU of the European Parliament and of the Council with regard to regulatory technical standards for the level of accuracy of business clocks
SS	Settlement Systems
SSTI	Size specific to the Instrument
UCITS	Undertakings for Collective Investments in Transferable Securities

2 Introduction

1. ESMA published on 4 January 2022 a call for evidence[1] (CfE) on the proposal of the European Commission (EC) for a Regulation on a pilot regime for market infrastructures based on distributed ledger technology (DLT)[2]. This proposal was part of a package of measures proposed by the EC to further enable and support the potential of digital finance in terms of innovation and competition while mitigating the associated risks. The EC's Digital Finance Strategy includes also the Regulation on Markets in Crypto-assets Regulation (MICA) and the Digital Operational Resilience Act (DORA).

2. Following the agreement between the EC, the European Parliament and the European Council, a Regulation on a pilot regime for market infrastructures based on distributed ledger technology ("the DLT Pilot"), was published in the Official Journal on 2 June 2022[3]. It will start applying on 23 March 2023.

3. The DLT Pilot aims at developing the trading and settlement for 'tokenised' securities, i.e. digital representations of traditional securities and enabling market participants as well as EU regulators to gain experience on new opportunities and issues raised by DLT while ensuring financial stability, investor protection and market integrity.

4. The DLT Pilot includes a recital requiring ESMA to assess whether the regulatory technical standards (RTS) developed under MiFIR relative to certain pre-and post-trade transparency and data reporting requirements need to be amended to being effectively applied also to financial instruments issued, traded and recorded on DLT.

5. The CfE aimed at seeking input from stakeholders as to the need for amending the RTS on pre- and post-trade transparency requirements, i.e. RTS 1[4] (equity transparency), RTS 2[5] (non-equity transparency), RTS 3[6] (double volume cap and provision of data) and the RTS on data reporting requirements, i.e. RTS 22[7] (transaction reporting), RTS

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[1] call_for_evidence_-_dlt_pilot_regime_and_review_of_mifir_rts_on_transparency_and_reporting.pdf (europa.eu)

[2] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020PC0594

[3] EUR-Lex - 32022R0858 - EN - EUR-Lex (europa.eu)

[4] COMMISSION DELEGATED REGULATION (EU) 2017/587 of 14 July 2016 supplementing Regulation (EU) No 600/2014 of the European Parliament and of the Council on markets in financial instruments with regard to regulatory technical standards on transparency requirements for trading venues and investment firms in respect of shares, depositary receipts, exchange-traded funds, certificates and other similar financial instruments and on transaction execution obligations in respect of certain shares on a trading venue or by a systematic internaliser.

[5] COMMISSION DELEGATED REGULATION (EU) 2017/583 of 14 July 2016 supplementing Regulation (EU) No 600/2014 of the European Parliament and of the Council on markets in financial instruments with regard to regulatory technical standards on transparency requirements for trading venues and investment firms in respect of bonds, structured finance products, emission allowances and derivatives (Text with EEA relevance).

[6] COMMISSION DELEGATED REGULATION (EU) 2017/ 577 - of 13 June 2016 - supplementing Regulation (EU) No 600 / 2014 of the European Parliament and of the Council on markets in financial instruments with regard to regulatory technical standards on the volume cap mechanism and the provision of information for the purposes of transparency and other calculations (europa.eu)

[7] COMMISSION DELEGATED REGULATION (EU) 2017/590 of 28 July 2016 supplementing Regulation (EU) No 600/2014 of the European Parliament and of the Council with regard to regulatory technical standards for the reporting of transactions to competent authorities.

23 [8] (reference data), RTS 24 [9] (order record keeping) and RTS 25 [10] (clock synchronisation).

6. In the CfE, ESMA noted that any potential amendments to the RTS on transparency and data reporting should be assessed against the overall objective to remove obstacles hampering the use of DLT and to create legal certainty for the use of DLT for trading and settlement. Therefore, any amendments to the RTS should not result in increasing the regulatory burden for DLT market infrastructures (DLT MIs) compared to trading venues making available for trading financial instruments outside a DLT environment. Furthermore, this report takes into account the feedback received during a dedicated workshop held by ESMA in March 2022, as well as subsequent bilateral meetings held with some stakeholders with the goal to better understand the answers provided during the CfE and gain more insights on the structure of DLT trading. The summary of the feedback received during the workshop is provided in Annex I of this report.

7. This report presents stakeholders' responses to the CfE and highlights the way forward ESMA is planning to take on the various topics. In line with the structure presented in the CfE this report is organised as follows: Section 3 provides a high-level overview of the DLT Pilot, Section 4 discusses the use of DLT for trading and settlement, Section 5 includes respondents feedback and ESMA proposed way forward on the need for amending the transparency RTS (Section 5.1) and the data reporting RTS (Section 5.2). Finally, Section 6 covers the topic of regulatory access to the DLT.

3 Main elements of the DLT Pilot

3.1 Background

8. The DLT Pilot introduces three categories of DLT MIs: DLT Multilateral Trading Facilities (DLT MTF), DLT Trading and Settlement Systems (DLT TSS) and DLT Settlement Systems (DLT SS). DLT MIs can request limited exemptions from specific requirements in EU legislation (MiFID II, CSDR), provided they comply with the conditions attached to those exemptions and compensatory measures requested by the relevant NCA. The permission to operate a DLT MI may come in addition to an authorisation as a CSD or as an investment firm (or regulated market) or can be granted to new entrants that will have to meet the relevant MiFID II/ CSDR requirements, except those for which the applicant requests, and has been granted, an exemption.

9. A DLT MTF is an MTF as defined in MiFID II operated by an investment firm or a market operator. It may apply for an exemption to MiFID II to allow for direct retail participation to DLT MTFs, provided that appropriate compensatory measures are in place. In

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[8] COMMISSION DELEGATED REGULATION (EU) 2017/585 of 14 July 2016 supplementing Regulation (EU) No 600/2014 of the European Parliament and of the Council with regard to regulatory technical standards for the data standards and formats for financial instrument reference data and technical measures in relation to arrangements to be made by the European Securities and Markets Authority and competent authorities.
[9] COMMISSION DELEGATED REGULATION (EU) 2017/580 of 24 June 2016 supplementing Regulation (EU) No 600/2014 of the European Parliament and of the Council with regard to regulatory technical standards for the maintenance of relevant data relating to orders in financial instruments.
[10] COMMISSION DELEGATED REGULATION (EU) 2017/574 of 7 June 2016 supplementing Directive 2014/65/EU of the European Parliament and of the Council with regard to regulatory technical standards for the level of accuracy of business clocks.

addition, a DLT MTF and its members or participants may be exempted from the transaction reporting obligations provided that the DLT MTF keeps the relevant details of all transactions executed through its systems and that it grants direct and immediate access to such details to the national competent authority (NCA) entitled to receive the data under MiFIR, which shall be admitted to the DLT MTF as a regulatory observer participant. In exchange for these exemptions, NCAs can request any compensatory measures that they deem 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*.

10. A DLT SS is a settlement system, operated by a CSD that settles transactions in DLT financial instruments. It may require exemptions from some definitions under CSDR (dematerialised form, transfer orders, securities account) as well as from rules on recording of securities, integrity of issue, segregation of assets, measures to prevent and address settlement fails, outsourcing, conduct of business, settlement finality, cash settlement or access between CSDs, and between CSDs, trading venues and CCPs, and might not be designated as a securities settlement system under the Settlement Finality Directive, provided that appropriate compensatory measures are in place.

11. A DLT TSS is a DLT market infrastructure operated by an investment firm or a market operator or by a CSD that combines the activities of both a DLT MTF and a DLT SS, and as such may apply for exemptions available both to a DLT MTF and a DLT SS, associated with relevant compensatory measures.

12. Only certain DLT financial instruments may be admitted to trading /recorded by DLT MIs. DLT MIs may only admit/record shares of issuers with a market capitalisation below EUR 500 million, bonds with an issuance size below EUR 1 billion and UCITS with assets under management below EUR 500 million. The total market value of DLT transferable securities recorded at a DLT MI may not exceed EUR 6 billion at the moment of admission to trading or initial recording. When the aggregate value of DLT financial instrument traded/recorded on a DLT MI reaches EUR 9 billion, this DLT MI would have to implement a pre-defined transition strategy, as further specified in the following paragraph. NCAs may set lower thresholds considering the market size and the average capitalization of financial instruments of a given type admitted to trading platforms in the Member States where the services and activities will be carried out.

13. In addition to the conditions attached to the exemptions requested, DLT MIs must comply with specific organisational requirements to mitigate the risks associated with DLT. DLT MIs must also establish a clearly defined and publicly available strategy for transitioning out of or winding down its infrastructure (the 'transition strategy'), ready to be deployed in a timely manner, in the event that the permission or some of the exemptions granted are discontinued or if the DLT MI voluntary ceases its activities. The transition strategy must set out how members, participants, issuers and clients will be treated in such circumstances.

14. The permission is granted by the NCA for a period of up to 6 years and may be withdrawn where the conditions for operating a DLT MI are no longer met. ESMA will be charged with issuing non-binding opinions before the permission is granted.

15. The DLT Pilot introduces a technology-neutral wording, leaving the door open for the authorisation of all DLTs that are able to comply with all applicable requirements for DLT MI. Article 7(2) allows an operator of a DLT market infrastructure not only *"to establish"* but also *"to document as appropriate",* the rules on the functioning of the distributed ledger it operates, the rules for accessing the distributed ledger and the participation of the validating nodes. The operator should also address potential conflicts of interest and manage risk foreseeing any mitigation measures to ensure investor protection, market integrity and financial stability.

16. Each DLT is designed with specific rules for accessing the blockchain and for performing tasks such as entering and validating information on the blockchain. For the purpose of this document, a public DLT should be understood as a DLT network in which virtually anyone can access and become a participant in the validation and consensus process, otherwise described as an unrestricted DLT. A private DLT should be understood as a DLT network limiting access and participation in the validation and consensus process to selected participants, otherwise known as restricted DLT. A permissioned DLT should be understood as a DLT network with unrestricted access (i.e. similar to a public DLT on access), but with restricted participation in the validation and consensus process (i.e. similar to a private DLT on validation and consensus).

17. The CfE requested stakeholders' views and general observations on the proposed regime, including any relevant information on their organisation that could be of interest to ESMA in the context of the Pilot regime. In addition, the CfE intended to be an information gathering exercise for ESMA and hence stakeholders were invited to share how each topic covered in the paper is relevant for their organisations.

3.2 Feedback to the call for evidence (Q1)

18. Respondents to the CfE welcomed the DLT Pilot and ESMA's focus on fostering digital innovation, highlighting growing demand from institutional investors for digital assets such as crypto currencies, and increasing interest in the use of DLT for 'conventional' assets.

19. A majority of respondents agreed that applying the "same business, same risk, same rules" principle would safeguard investor protection and market integrity. There was broad agreement amongst respondents that existing RTS should be the basis for trade and transaction reporting on DLT securities, with necessary technological neutrality, to ensure an adequate comparison between traditional financial instruments and DLT securities, and a smooth transition out of the pilot environment in the future.

20. A number of respondents noted that flexibility is a central feature of the DLT Pilot. These respondents described the Pilot regime as a 'sandbox' to test the use of DLT in financial markets, adapting the application of the current rulebook which was designed with traditional financial markets infrastructures in mind. Some respondents also called for early indications on how the lessons learned from the DLT Pilot would be integrated in the existing rules, as foreseen in the Regulation.

21. Most stakeholders called for interoperability across DLT MIs, and between DLT MIs and traditional financial market infrastructures, with some stakeholders positing that there is

a low likelihood that securities could be issued, traded and settled exclusively in a DLT environment in the short term[11]. Some stakeholders noted that the DLT Pilot would foster a move away from OTC trading of DLT-based securities to trading and settlement on DLT MTF. Others on the contrary indicated that trading in DLT-based securities would remain OTC or concluded through a traditional trading venue, whilst the settlement would be on a DLT environment.

22. In addition, ensuring the use of harmonised reporting standards, and allowing the trading or settlement of DLT securities in more than one DLT or more than one DLT MI were presented by stakeholders as means to foster innovation and increase competition in this area.

23. A few stakeholders expressed concerns on some elements anchored in the DLT Pilot Regulation itself, such as the cap on the total market value of DLT transferable securities for each DLT MI, and the time-limited nature of the DLT Pilot.

4 Use of DLT for trading and settlement

4.1 Background

24. Crypto assets are one of the major applications of DLT technology in finance. However, provisions in existing EU legislation may inhibit the use of DLT. The DLT Pilot aims at creating an EU framework that enables markets in crypto assets that qualify as financial instruments (i.e. tokenised financial instruments) and the wider use of DLT in financial services.

25. Via the CfE, ESMA aimed at gaining a better understanding on the use of DLT for trading and settlement, identifying potential challenges in relation to listing, trading and settlement using DLT, at assessing whether amendments to the technical standards on data reporting and transparency would be necessary for the successful implementation of the DLT Pilot as well as at preparing for the further tasks allocated to ESMA under the Regulation (for example on ESMA opinions, guidelines and regular reporting tasks).

26. The CfE requested stakeholders to indicate whether their organisation is planning to operate a DLT MI, which types of DLT MI would be contemplated and whether the underlying distributed ledger would be restricted (permissioned) or unrestricted (permissionless). In addition, stakeholders were invited to share their views on the main benefits and obstacles to the increased use of DLT-based solutions for listing, trading and settlement, and to provide an overview of how DLT securities trade in the current market structure and potential challenges following the application of the DLT Pilot.

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[11] It should though be noted that the extent to which this will be possible will depend on the national frameworks in place and, in particular, whether the national frameworks will allow the issuing, trading and settlement of the same financial instrument both on DLT MI and trading market infrastructures

4.2 Feedback to the call for evidence (Q2 – Q5)

27. A significant number of market participants expressed interest in operating a DLT MI under the DLT Pilot, split equally between DLT MTF, DLT SSS and DLT TSS. Interested respondents ranged from incumbent firms already authorised under MiFID or CSDR – with some looking to integrate their existing DLT-based financial market infrastructure into the DLT Pilot – and firms seeking their principal authorisation in the context of the DLT Pilot (newcomers). These respondents are both based in the EU and other third-country jurisdictions.

28. On the question of the type of DLTs that participants intend to pursue, some respondents favored operating a DLT with restrictions and permissions (private or permissioned DLT), which would allow, in their view, sufficient flexibility to embed compliance with regulatory requirements in the DLT architecture. Other stakeholders envisaged the use of all types of DLT, including public DLTs, provided that regulatory requirements ensure technological neutrality also with regards to the underlying distributed ledger.

29. Respondents mentioned as existing or potential use cases for DLT: security token offerings, 24/7 trading, tokenised securities as fund assets with DLT-based post-trade processes, and distribution of fund units.

30. The main stated benefits put forward by respondents for the increased use of DLT-based solutions on financial markets include the following areas:

    - Transparency: public ledgers provide information available to all participants in a distributed ledger (subject to the distributed ledger's specific rules), allow for the tracing of transactions throughout the life cycle of the security, and can act as a register of ownership.

    - Data integrity: data stored on the ledger has a high level of integrity, as consensus among participants is necessary to alter data blocks (subject to the distributed ledger's specific rules).

    - Disintermediation: DLT-based solutions could foster direct access to secondary markets with peer-to-peer models, decreasing the need for intermediation, and in turn reducing costs and counterparty risks.

    - Efficiency: DLT is deemed to improve efficiency for listing, trading and settlement due to decentralisation, improved access to information, real-time execution of transactions, and ease of exercising contractual rights, processing payments and transferring funds.

31. On the identification of the main obstacles to the further use of DLT on financial markets, in particular for listing, trading and settlement, the majority of respondents noted the following points:

    - Vulnerabilities of crypto-asset markets: responses highlighted as main vulnerabilities liquidity mismatches; credit and operational risks making stable coins and their providers susceptible to runs on their reserves; increased use of leverage

in crypto-based investment strategies; concentration risk on platforms trading crypto-assets; lack of transparency and regulatory oversight of the sector. The vulnerabilities could spill over to traditional financial markets due to increasing links with crypto-asset markets, notably on short-term funding markets.

- Vulnerabilities of the distributed ledger technology: Uncertainty remains on potential operational and security issues arising from the distributed ledger technology, for example on the level of embedded cyber-security, and on the perceived lack of clear lines of responsibilities in case of operational challenges.

- Limited interoperability and market fragmentation: respondents noted that interoperability both between DLT-based infrastructures and traditional market infrastructures, and between DLT-based infrastructures was still limited, in part due to the variety and heterogeneity of distributed ledgers networks, in turn leading to high market fragmentation.

- Lack of transparency of private DLTs: Some respondents pointed to private DLTs, described as centralised trading systems using DLT with encryption methods and deemed to provide limited to no transparency to other participants.

- Environmental footprint: DLT solutions and consensus mechanisms to validate transactions (notably proof-of-work) require intensive energy use that could impede their development in the long run.

32. Finally, respondents highlighted legal and regulatory limitations to the application of the DLT on the following aspects:

- Lack of harmonisation of regulatory regimes: respondents pointed to perceived divergence and inconsistency on transparency and reporting requirements, taxation and classification of digital securities, leading to complexity and potential conflicts of law between EU Member States in the absence of a harmonised framework at EU level.

- Technological neutrality of existing regulatory requirements: some respondents also mentioned that concepts and definitions in existing regulatory requirements (e.g. book-entry recording) could be inconsistent with the use of DLT-based solutions.

- Financial protection: a few respondents noted that issuers and (retail) investors of financial instruments could enjoy less financial protection for assets on a distributed ledger compared to assets on a traditional market infrastructure, for example due to the lack of a recourse procedure in the event of fraud on digital assets.

5 Reviewing the technical standards for pre- and post-trade transparency and data reporting

33. Recital 54 of the DLT Pilot requires ESMA to assess whether the RTS developed under MiFIR particularly relative to pre-and post-trade transparency requirements and certain data reporting requirements need to be amended to being effectively applied also to securities issued and traded on DLT. In particular, '*ESMA should take into account the specificities of those financial instruments issued on a distributed ledger technology and whether they require adapted standards which would allow for their development without undermining the objectives of the rules laid down in the regulatory technical standards adopted in application of Regulation EU No 600/2014*'.

34. The following subsections present the feedback received from the CfE and ESMA's reflections on the need to amend the RTS on equity transparency (RTS 1), non-equity transparency (RTS 2) and the RTS on the double volume cap mechanism (DVCM) and the provision of information for the purposes of transparency and other calculations (RTS 3) as well as to the data reporting RTS (RTS 22 on transaction reporting, RTS 23 on reference data reporting, RTS 24 on order record keeping and RTS 25 on clock synchronisation).

5.1 Transparency

5.1.1 RTS 1 and 2: Instruments and transactions

5.1.1.1 Background

35. The DLT Pilot covers DLT shares, UCITS and bonds. Hence, in the CfE ESMA assessed whether RTS 1 (shares, UCITS-ETFs) and RTS 2 (bonds) need to be amended. To recall, only UCITS funds that meet the definition of ETFs are subject to the MiFIR transparency requirements.

36. In particular, in the CfE, ESMA aimed at gaining more insights on the specific characteristics and the functioning of the type of instruments that will be in the scope of the DLT pilot compared to standard instruments and of the type of transactions that will be out of the scope.

5.1.1.2 Feedback to the call for evidence (Q6 – Q10)

Instruments (Q6)

37. From the feedback provided by stakeholders, it appears that DLT instruments do not differ radically from standard instruments. However, DLT instruments present some peculiarities.

38. One respondent raised that financial instruments issued on DLT will have different technical characteristics and might bear some additional functionalities, for example: a) coupon and dividend payments on DLT might be delivered in stablecoin or utility tokens

and/or settled instantly; b) better investor relation management would be available to issuers; c) higher shareholder participation is expected due to increased ease of voting procedure; d) ETFs running with use of a 'liquidity pool', i.e. a pool of tokens or cryptocurrencies locked in a smart contract which enables trading by providing users liquidity; e) financial tokens could be staked in Proof-of-stake (PoS) protocols.

39. Finally, respondents explained that securities traded using DLT technology are analogous to non-DLT technology securities insofar as their functions and features are concerned. While reference data and instrument characteristics are considered to be basically the same, additional (mainly technical) features characterise a DLT instrument, i.e. nature of a digital instrument (digitised format), how it was issued, in which technology, method of recording, the product design, etc.

40. Different views were expressed on the issuer of DLT instruments. Some respondents considered that the use of DLT for the issuance, recording, transfer and storage of those securities does not change the legal nature nor the economic value of those instruments. Other respondents though noted that a DLT security does not have an identified issuer, therefore they consider that DLT securities are "constituted" rather than "issued". In addition, some respondents noted that DLT financial instruments could also be digital depository receipts.

41. Some stakeholders also brought to ESMA's attention the importance of a streamlined interpretation on which types of DLT instruments would be considered a transferable security and therefore would be in the scope of the DLT Pilot Regime. A few stakeholders called for a distinction between security tokens issued on a DLT that could qualify as a transferable security, and 'tokenised securities', described as financial instruments issued 'traditionally' and introduced on a DLT afterwards.

OTC-trading (Q7)

42. In addition to the specific characteristics of DLT instruments, ESMA aimed at understanding from market participants where DLT financial instruments are traded and whether there could be OTC trading in those instruments.

43. From the feedback provided, it emerges that OTC trading of DLT financial instruments is possible and currently the standard practice. Stakeholders considered that there would be also room for OTC trading under the DLT Pilot.

44. Respondents identified several cases which would in their assessment constitute OTC trading of DLT instruments. One stakeholder noted that the characteristics of the wallet that is used for the custody of the crypto-assets could be a relevant feature. Direct transactions between investors using non-custodial wallets that they control directly, with no interposition of a third-party, could be considered OTC trading, while exchanging an asset between two counterparties through the interposition of an DLT MI, where the infrastructure also offers the custodial wallet to the two counterparties, could be considered on-venue trading.

45. The same stakeholder identified the permissions embedded in the DLT as another relevant feature. Transactions on a public DLT based on Decentralised Finance (DeFi), with no limitations on the participants allowed to perform and validate transactions, would be more likely to constitute OTC trading, while validation rules embedded in a

private or permissioned DLT would be relevant to characterise on-venue transactions, for example if they only allow the participant managing the DLT MI to validate the transaction.

46. Other situations described by respondents as OTC trading in DLT financial instruments include a market participant executing a trade OTC and then recording the transaction details on a DLT SS, or transactions that would be above the thresholds defined in the DLT Pilot Regime and would therefore have to be executed bilaterally.

47. Overall, market participants were of the view that the definition of OTC trading in a DLT environment is crucial to ensure the consistent application of the MiFIR RTS. Some stakeholders were in favour of clarifying that OTC trading is permitted within the DLT Pilot regime, while other stakeholders noted that OTC trading with bilateral execution would be contrary to the spirit of a DLT. A few respondents pointed out that a transaction should be considered on-venue if the order is placed directly on the market platform and the execution is recorded on the DLT via the same platform.

Transactions (Q8-10)

48. In relation to non-price forming transactions covered under Article 13 of RTS 1 and Article 12 of RTS 2, the CfE focussed on whether the lists of transactions reflect relevant transaction types for DLT financial instruments and/or whether non-price forming transactions/technical trades/non-addressable liquidity transactions which are specific to DLT financial instruments should be included in such articles.

49. Overall, respondents to the CfE agreed that the list of transactions in Articles 13 and 12 of respectively RTS 1 and 2 are relevant also for DLT instruments.

50. One respondent noted that give-up / give-in transactions were introduced in the current market infrastructure to decorrelate the executed trade ownership from the transaction ownership from a settlement and clearing perspective, and that such a situation is unlikely to materialise in a DLT environment where trading and settlement would not be separated. In their views, a mechanism similar to give-up and give-in transactions may however be useful in cases where a DLT MI does not provide both trading and post-trading services.

51. Another respondent suggested that transactions on "contracts arising exclusively for clearing or settlement purposes" as defined in Article 13(a) RTS 1 and Article 12(a) RTS 2, could be excluded from post-trade transparency in a DLT context, notably for transactions concluded off-venue and settled on a DLT MI.

52. The same respondent noted that some events linked to a DLT instrument (for example related to registration settlement, creation of a DLT security, tokenisation of a 'traditional' security) would be recorded on the blockchain, depending on the design structure and the roles and responsibilities and the securities laws of the relevant jurisdiction, and suggests that such events should not be considered as price-forming transactions.

53. Taking into consideration the characteristics of DLT instruments, ESMA asked stakeholders whether the current transparency requirements in RTS 1 and 2 can be applied for such instruments.

54. The majority of respondents is of the view that the current regulatory framework does not need adjustments. A few stakeholders pointed out that information on DLT financial instruments would either already be available on the blockchain or can be incorporated as part of the rules of the blockchain, rendering in their view redundant some aspects of the transparency requirements, such as liquidity assessment or reporting fields.

5.1.1.3 Conclusions and way forward

55. Based on the feedback from the CfE, ESMA will look to provide additional guidance on the interpretation on topics identified as crucial to the functioning of the DLT Pilot Regime, without introducing amendments to the existing rulebook.

56. In particular, ESMA recognises the feedback received on the interpretation of 'transferable securities' for DLT financial instruments. ESMA will continue to engage on this topic with competent authorities and with the European Commission, aiming to provide clarity to market participants while ensuring consistency on instrument identification and categorisation (see proposed approach section 5.3.6).

57. In light of respondent's feedback, ESMA recognises that OTC trading in DLT instruments can be occurring within the remit of the DLT Pilot Regime (see sections 5.2.3.4 and 5.3.2) and will pay close attention to developments in this area, with a view to develop further guidance if necessary.

58. Finally, ESMA does not intend to amend the current requirements on non-price forming transactions in RTS 1 and 2 for the purpose of the DLT Pilot Regime, while considering whether further guidance would be necessary to ensure their effective application.

5.1.2 RTS 1 and 2: Liquidity

5.1.2.1 Background

59. As illustrated in the CfE, the proposal for a DLT Pilot only covers shares below a certain market capitalisation (EUR 500 million), bonds below a certain issuance size (EUR 1 billion)[12] and UCITS below a certain asset under management size (EUR 500 million).

60. The thresholds in the DLT Pilot and the current approach for determining the liquidity status of shares and ETFs (in Commission Delegated Regulation (EU) 2017/567) and bonds (in RTS 2) are not fully aligned.

61. The liquidity status defined in Delegated Regulation (EU) 2017/567 and RTS 2 determines the transparency obligations for the instruments (defined in RTS 1 for equity and equity-like instruments and RTS 2 for non-equity instruments). In general, illiquid instruments are subject to lighter transparency requirements.

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[12] The text of the political agreement reached by co-legislators clarifies that corporate bonds issued by issuers with a market capitalisation of less than EUR 200 million at the time of their issuance should be excluded from this threshold.

62. The current approach under Delegated Regulation (EU) 2017/567 and RTS 2 works as follows:

- For shares and ETFs, the current annual liquidity assessment is based on the free float, frequency of trading, the average daily number of transactions and the average daily turnover of a share and not on the market capitalisation[13].

- For bonds, the current approach for newly issued bonds is based on the issuance size of bonds, whereas for other bonds the liquidity assessment is performed quarterly based on the average daily notional amount traded, the average daily number of trades and the percentage of days traded over the period considered.

63. As a consequence of the different approaches under the DLT Pilot and Delegated Regulation (EU) 2017/567 and RTS 2 not all instruments eligible for the DLT Pilot Regime will be considered illiquid in the context of the MiFIR transparency requirements.

64. ESMA did not see any issues as such with this different approach under the DLT Pilot and the liquidity assessment but asked stakeholders their views on whether problems may emerge from the current liquidity concepts in Delegated Regulation (EU) 2017/567 and RTS 2 for the application of related transparency requirements for DLT financial instruments.

5.1.2.2 Feedback to the call for evidence (Q11)

65. The majority of stakeholders does not foresee issues between the two different concepts of liquidity since they serve different purposes. However, respondents made some considerations.

66. Firstly, some respondents raised that shares/units of non-ETFs UCITS are not covered by the liquidity determination of Delegated Regulation (EU) 2017/567. Therefore, their treatment would be inconsistent compared to the other instruments subject to the DLT pilot regime.

67. One respondent was of the view that all instruments (equity and non-equity) should be deemed illiquid for the purpose of the DLT Pilot in order to disapply transparency requirements.

68. Some stakeholders emphasised the need for central bank digital currencies (CBDCs) to make the chain comprehensive and face potential liquidity issues. In addition, some respondents also noted that DLT markets have not yet been tested by crisis, so liquidity remains an open question.

69. Finally, respondents highlighted that if the existing liquidity ratios for financial instruments are used under the DLT Pilot, the projects realised under the DLT Pilot would not be considered as a liquid market, with the consequence that it would be impossible to consider them as "high-quality liquid assets (HQLA)" for the purpose of the calculation of the Liquidity Coverage Ratio under Basel III. If a DLT financial instrument is not recognized as HQLA, there would be no interest from government

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[13] However, for shares traded on MTFs only and in case the free float information is not available, the market capitalisation can be used as a proxy for the free float.

issuers to issue DLT securities nor for major asset managers to experiment the trading of such instruments. Due to its experimental nature, stakeholders are of the view that liquidity ratios under the DLT Pilot Regime should be provided based on issuance ratios.

5.1.2.3 Conclusions and way forward

70. ESMA appreciates the comments made concerning ETFs, however, already now UCITS-ETFs and non-ETFs UCITS have a different transparency regime since the latter do not fall into the scope of the MiFIR transparency provisions. Therefore, the same discrepancy would apply also to UCITS and non-UCITS ETFs traded on a DLT.

71. With regard to the disapplication of the transparency requirements, the feedback received overall is that the DLT market is already a transparent market. Therefore, ESMA expects that the possibilities to waive or defer transparency will be of limited use, if any.

72. The comment on the need of CBDCs to sustain the liquidity of the market is not strictly related to the RTS 2 review. While a link could be established in relation to the potential suspension of the transparency obligations in the case of a sudden liquidity drop as set out in Article 11 of MiFIR as further specified in RTS 2, ESMA does not consider it necessary to tailor the regime to DLT securities. Therefore, the same approach would apply to DLT bonds as well as other non-equity instruments.

73. The last remark received on HQLA seems not to be strictly related to the RTS 1 and 2 review. Indeed, the liquidity assessment of bonds provided in RTS 2 is not used to define the status of HQLA for the purpose of the CRR. Therefore, despite the liquidity status of the bonds for transparency purposes might help the case of the qualification of the bond as HQLA, it is not a requirement.

74. As a consequence of the above, ESMA concludes that the two different definitions of liquidity do not lead to the creation of issues.

5.1.3 RTS 1 and 2: Trading systems

5.1.3.1 Background

75. The MiFID transparency obligations apply to trading venues and investment firms. Therefore, DLT TSS and DLT MTFs would be subject to the MiFID II requirements for MTFs and would hence be in the scope of the MiFIR transparency provisions.

76. The CfE noted that in ESMA's understanding the DLT Pilot will cover only on-venue trading. Therefore, the CfE did not make any consideration related to off-venue trading (trading executed by systematic internalisers and OTC) in the context of pre-trade transparency for the different trading systems.

77. The MiFID pre-trade transparency obligations are calibrated based on the different trading systems that can be operated by a trading venue. Those requirements are defined in Table 1 of Annex I of RTS 1 and in Annex I of RTS 2.

78. Given that the DLT Pilot allows for DLT TSS and DLT MTFs to provide for direct retail participation with no broker intermediation, this could mean that the trading systems of DLT TSS and DLT MTFs may significantly deviate from the current trading systems used. The CfE aimed at understanding whether the different types of trading systems for "standard" instruments differ from those trading DLT financial instruments.

5.1.3.2 Feedback to the call for evidence (Q12 – Q15)

79. Most of the feedback received noted that traditional systems are appropriate for DLT securities and no specific changes to the definition of trading systems is required, in particular for those transactions taking place off the blockchain (off-chain), i.e. when (selected) DLT participants are executing the transactions on traditional market infrastructures or bilaterally

80. However, for a small number of stakeholders, on-chain transactions, i.e. transactions arranged on the blockchain that are validated and recorded entirely on the blockchain with no intervention from stakeholders that are not participating in the DLT, may require tailored regimes as they do not fit the current traditional systems prescribed in RTS 1 and 2. The use of 'liquidity pools' was highlighted as one example of on-chain transactions. One respondent further added that in their view the price discovery mechanism can only be achieved off-chain, due to the reduced matching capabilities for on-chain transactions.

81. Most respondents considered that OTC trading works well in a DLT context and should be taken into consideration when evaluating potential changes to the regulatory framework. Nevertheless, responses also considered that no changes would be necessary in this context to the definition of trading systems.

82. ESMA also requested feedback on the potential impact of the choice of trading protocols and applications on the trading of instruments and the ability of DLT MI to publish information in accordance with the requirements of RTS 1 and 2.

83. Some respondents considered that pre- and post-trade transparency should be a future ambition and that only a light regime should apply during the DLT Pilot Regime. In addition, those respondents considered that pre-trade transparency would be disproportionate as DLT securities are highly illiquid.

84. Whilst the current regime is applicable for off-chain protocols, with on-chain trading, e.g. using liquidity pools there may be the emergence of new protocols. In addition, while on-chain liquidity pools offer significant pre-trade transparency, a system without bids and offers is not foreseen in RTS 1 and 2.

85. Concerning the question on whether DLT financial instruments require tailored pre-trade transparency requirements, most comments received distinguished between on- and off-chain systems. For the on-chain systems, respondents consider that RTSs 1 and 2 should include new trading protocols with tailored pre-trade requirements. In addition, some respondents are of the view that ESMA should develop a tailored regime for non-CLOB (Central Limit Order Book) trading protocols.

86. Finally, the majority of the feedback received noted that how pre-trade transparency should be applied in the same manner regardless of the types of DLT used, with many

of the respondents restating the points made on previous questions that the rules applicable to conventional MTFs and DLT MTF should be the same.

87. One respondent reiterated the fact that the type of DLT (public, permissioned, private) may not have an impact but the choice between on-chain or off-chain is determinant for how transparency is applied.

88. Finally, one responded argued that public DLTs may suffer from frontrunning as market participants may gain access to information about transactions. This would not be possible for permissioned and private DLTs.

5.1.3.3 Conclusions and way forward

89. ESMA considers that no further guidance is necessary for off-chain transactions, as the current requirements would apply at the level of transactions executed outside of the blockchain.

90. ESMA will continue to assess the need to provide additional guidance on applying the current requirements for on-chain transactions and for OTC trading of DLT instruments.

5.1.4 RTS 1 and 2: Pre-trade transparency waivers

5.1.4.1 Background

91. Article 4 of MiFIR allows NCAs to waive the pre-trade transparency obligations for equity and equity-like instruments. More specifically, four types of waivers are allowed:

- the reference price (RP) waiver: for systems that match orders based on a trading methodology by which the price of the financial instrument referred is derived from the trading venue where that financial instrument was first admitted to trading or the most relevant market in terms of liquidity, where that reference price is widely published and is regarded by market participants as a reliable reference price. The reference price should be either the mid-point of the current bid and offer prices where the instrument was first traded or the most relevant market in terms of liquidity, or, when this price is not available, the opening or closing price of the relevant trading session;

- the negotiated transaction (NT) waiver: for systems that formalise negotiated transactions which are:

  o made within the current volume weighted spread reflected on the order book or the quotes of the market makers of the trading venue operating that system (liquid equity instruments);

  o are dealt within a percentage of a suitable reference price (illiquid equity instruments);

  o subject to conditions other than the current market price of that financial instrument, which are further specified in RTS 1 (for both liquid and illiquid equity instruments);

- the large-in-scale (LIS) waiver: for orders that are large in scale compared with normal market size;

- the order management facility (OMF) waiver: for orders held in an order management facility of the trading venue pending disclosure.

92. In the CfE, ESMA requested feedback from market participants on a number of implementation aspects of these waivers with respect to DLT-shares and UCITS-ETFs. ESMA's view, at the time of drafting the CfE, was that it would be unlikely for a specific DLT financial instrument to be traded on different venues. Therefore, ESMA considered that the reference price waiver as far as concerns DLT instruments does not necessitate the identification of the venue from which to derive the price. Concerning negotiated trades, ESMA requested feedback from stakeholders if the list of transactions subject to conditions other than the current market price might need to be amended to reflect the trading of DLT shares and UCITS-ETFs, for example the case of transactions contingent to the creation of a derivative contract. With regard to the LIS and the OMF waiver, ESMA requested feedback whether DLT shares and UCITS-ETFs trade differently in terms of sizes with respect to "standard" instruments and therefore whether the parametrisation of the LIS threshold or of the order size for orders benefitting from an OMF waiver, in particular for reserve orders, might need to be adjusted.

93. Concerning non-equity instruments, Article 9 of MiFIR allows NCAs to waive the pre-trade transparency obligations. As for equity instruments, pre-trade transparency requirements may be waived for orders that are LIS compared with normal market size and orders held in an OMF of the trading venue pending disclosure (Article 9(1)(a) of MiFIR).

94. MiFIR introduces a pre-trade transparency waiver for non-equity instruments for actionable indications of interest (AIOIs) in RFQ and voice trading systems above a size specific to the instrument (SSTI) which would expose liquidity providers to undue risks and takes into account whether the relevant market participants are retail or wholesale investors (Article 9(1)(b) of MiFIR). The SSTI waiver is only a partial waiver as Article 8 of MiFIR requires a trading venue benefitting from such a waiver to still make available some minimum level of pre-trade transparency information. In such circumstances, the trading venue is required to make public at least indicative pre-trade bid and offer prices which are close to the price of the trading interests advertised through its systems and as further defined in Article 5(2) of RTS 2.

95. Pre-trade transparency obligations may also be waived for financial instruments for which there is not a liquid market (Article 9(1)(c) of MiFIR).

96. Finally, to address some specific trading patterns not initially included in MiFIR, the MiFID Quick Fix in June 2016 extended the non-equity transparency regime by providing for waivers for (i) orders for the purpose of executing an exchange for physical or EFP (Article 9(1)(d) of MiFIR) and for (ii) package orders where at least one component is above LIS or does not have a liquid market, provided that the package order does not have a liquid market as a whole or where all components are executed on a RFQ or voice trading system and are above SSTI (Article 9(1)(e) of MiFIR).

97. The waivers above are available to DLT bonds subject to meeting the respective conditions.

98. As for equity instruments, ESMA requested feedback from stakeholders in order to further investigate some implementation aspects of these waivers with respect to DLT bonds and whether the current framework to determine the LIS and the SSTI thresholds might need adjustments to take into account specific characteristics of DLT-bonds trading compared to "standard" bonds.

5.1.4.2 Feedback to the call for evidence (Q16 – Q17)

99. Most respondents did not see the need to make changes to the overall functioning of the waivers for shares and UCITS-ETFs in RTS 1 and bonds in RTS 2

100. A small number of respondents suggested not to change how pre-trade transparency waivers work but rather to recalibrate some to cater for DLT securities. One respondent also suggested to loosen the policy around waivers to allow for experimentation.

101. In particular, some respondents suggested that waivers should be adapted to cater for on-chain transactions, and that a tailored regime could be created for liquidity pools.

5.1.4.3 Conclusion and way forward

102. ESMA will assess whether a recalibration of the existing waivers would be needed following an assessment of the first experiences once the DLT Pilot applies, with specific attention to on-chain transactions and to the use of liquidity pools. However, a complete overhaul of the functioning of pre-trade transparency waivers for the purpose of the DLT Pilot Regime is not foreseen.

5.1.5 RTS 1 and 2: Post-trade transparency deferrals and details to be published

5.1.5.1 Background

103. The post-trade transparency regime for equity and non-equity instruments defined in MiFIR, requires the publication of information on transactions as close to real time as possible.

104. As close as real time as possible is considered to be within one minute for equity and equity-like instruments and 5 minutes for non-equity instruments.

105. However, deferred publication is possible for LIS transactions in equity and equity-like instruments and non-equity instruments, for SSTI transactions in non-equity instruments and transactions in illiquid non-equity instruments.

106. In conjunction with the deferred publication in the cases mentioned above, Article 11(3) of MiFIR allows NCAs to provide for an additional discretionary regime of deferred publication of non-equity instruments.

107. ESMA carried out a preliminary assessment of the fields and flags to be populated when publishing post-trade transparency information. ESMA could not identify any major issues linked to the fields and flags.

108. In the CfE, ESMA invited respondents to clarify in which time frame post-trade transparency reports can be considered published as close to real-time as possible and, in order to better understand the need to calibrate the post-trade transparency regime for DLT-securities, ESMA aimed at gathering views on whether the current deferral periods for equity and non-equity instruments are appropriate for DLT securities and whether it is necessary to amend the current fields and flags for post-trade transparency for their application to DLT shares, ETFs and bonds.

5.1.5.2 Feedback to the call for evidence (Q18 – Q20)

109. Stakeholders replying to the CfE highlighted that the "conclusion" of a transaction on-chain will not necessarily occur at the same time as the settlement of the transaction. What is "as close to real time as technically possible" therefore depends according to the feedback received on the system design and on technical feasibility. In particular, stakeholders recommended to consider the variety of consensus mechanisms (Proof of Work, Proof of Stake, Proof of History), the structure of the off-chain layer(s) and the interoperability mechanism. Stakeholders mentioned examples like Bitcoin, whereby validation of transactions takes up to 60 minutes, and Ethereum, whereby validation takes on average 6 minutes.

110. With reference to deferrals, the majority of respondents were of the view that the current deferral periods for equity and non-equity instruments are appropriate for DLT securities. On the contrary, few respondents believe that there is no need to allow for any deferral periods in the context of DLT securities, because deferral periods are considered incompatible with DLT. In fact, they explained that the information is published on the blockchain immediately after a block has completed its validation, and the transactions have been inserted in the blockchain, so every participant will see all the information at the same time, if the ledger is public or semi-public.

111. Similar feedback was provided in the context of fields and flags for post-trade transparency of DLT instruments: the majority of respondents did not foresee any implementation issue on the basis of the current fields and flags. In particular, stakeholders believed it is not necessary to amend the current fields and flags for their application to DLT shares, ETNs and bonds in light of the "same activity, same rules" and "technology neutrality of law" principles.

112. In addition to this, a respondent suggested to consider the inclusion of identifiers that provide coverage of cryptocurrencies and digital assets to either work alongside the ISIN (e.g. DTI) or potentially replace it in certain circumstances (e.g. Financial Instrument Global Identifier - FIGI).

5.1.5.3 Conclusions and way forward

113. Based on the feedback received, ESMA will not amend existing requirements on post-trade transparency and could provide further guidance on the effective application of deferrals, and on the use of flags if necessary. Considerations on the use of fields are provided in sections 5.3.6 and 5.3.8.

114. While ESMA recognises that the use of identifiers such as the DTI or FIGI together with the ISIN could prove useful (see also section 5.3.6), ESMA does not favor replacing the ISIN with alternative identifiers.

5.1.6 RTS 3

5.1.6.1 Background

115. In the CfE, ESMA carried out a preliminary assessment on whether there is the need for changing RTS 3 and concluded that most of the provisions of RTS 3 do not seem to create issues for operating DLT MIs. In fact, based on ESMA's analysis, (i) DLT TSS and DLT MTFs trading DLT equity instruments would be subject to reporting under the DVCM, since the DVCM applies to any equity instruments and would also cover DLT shares and other DLT equity instruments (UCITS-ETFs) and (ii) DLT TSS and DLT MTFs are trading venues and would hence be subject to reporting of data for performing the various transparency calculations under MiFID II/MiFIR.

116. In this respect, ESMA asked market participants to provide views on whether it is necessary to amend RTS 3 and/or whether they anticipate problems with the application of RTS 3 under the DLT Pilot.

5.1.6.2 Feedback to the call for evidence (Q21)

117. The majority of stakeholders agreed with ESMA's assessment that there is no need to amend RTS 3, since DLT MTFs and DLT TSSs should be able to provide the information stipulated by RTS 3 and should follow the same transparency requirements that are today applicable to standard MTFs.

5.1.6.3 Conclusions and way forward

118. The feedback received confirmed that no changes are needed to RTS 3 for the purpose of the DLT Pilot. Therefore, ESMA confirms its preliminary view and does not propose any changes to this RTS.

5.1.7 RTS 1, 2 and 3: Conclusions and way forward

119. Overall, when it comes to the transparency regime the feedback received overwhelmingly suggested that no changes are needed to RTS 1 and 2. There are however a few areas where regulatory guidance would be welcomed by market participants. It should be noted that market participants are expected to comply with the transparency regime, regardless of whether they provide access to data on the blockchain to their relevant regulators, as meeting such requirements is crucial to ensure transparency to the wider public.

120. With regards to the different trading systems used for trading securities in the context of the DLT, the feedback noted that transactions arranged on the blockchain may deserve a special look from regulators. ESMA will therefore aim to provide further guidance to better capture on-chain transactions.

121.	In addition, when referring to trading protocols, ESMA took note of some concerns in relation to the possible emergence of new trading protocols also in the context of on-chain transactions.

122.	Although respondents did not see a need to amend the technical standards to cater for possible developments concerning on-chain transactions, ESMA may publish regulatory guidance in the future should developments in the market so require.

123.	In relation to waivers, ESMA will keep monitoring the evolution of the market and the proposals put forward by firms to NCAs in the context of the DLT pilot regime and evaluate whether guidance may be needed, in particular when it comes to the use of liquidity pools.

124.	ESMA also recognises the DLT Pilot Regime would allow for OTC trading of DLT financial instruments and will consider whether issuing guidance on this aspect could be necessary based on first experiences of the DLT Pilot regime.

125.	Finally, it was noted by respondents that it may be difficult to differentiate the "conclusion" of a transaction on-DLT and the time of the settlement of the transaction. In addition, the concept of "as close to real time as possible" may require some guidance considering respondents concerns with its dependency on the system design and on technical feasibility. ESMA may provide guidance on these aspects.

126.	As noted, respondents did not see the need for ESMA to change any elements of RTS 1 and 2, but some guidance may be required on some elements of the practical application of the transparency requirements. Such guidance is expected to cover at minimum considerations on ISIN and currency fields outlined in sections 5.3.6 and 5.3.8. Particularly in relation to the ISIN and currency fields, ESMA will endeavor to publish its guidance before the start of application of the DLT Pilot regime.

5.2 Regulatory reporting/record keeping

5.2.1 Introduction to RTS 22, 23, 24 and 25

5.2.1.1 Background

127.   Given the transaction reporting exemption as explained in Section 3.1, ESMA's preliminary view is that ESMA and NCAs efforts should focus on making the DLT direct access and re-distribution provisions operational. An additional set of changes to adapt the relevant parts of RTS 22 on reporting would appear neither efficient nor necessary. Consequently, DLT MTFs and DLT TSSs would need to choose between (a) the full exemption from RTS 22 which will be accompanied with the obligation to record all relevant details on the DLT and to grant direct access to the regulators and (b) the full application of RTS 22.

128.   In the CfE ESMA asked whether market participants agreed with the proposed approach.

5.2.1.2 Feedback to the call for evidence (Q22)

129.   Nearly all respondents agree that a review of the RTS on reporting/record keeping does not need to be completed ahead of the go-live of the DLT Pilot regime as none of the requirements envisaged in these technical standards will pose serious obstacles to the operation of the DLT MIs.

130.   One respondent argued that, in the context of the reporting exemption, there should be the option to submit a transaction report that is appropriate for the DLT securities without having to provide direct access to regulators.

5.2.1.3 Conclusions and way forward

131.   Given the feedback received from stakeholders, ESMA considers that the proposal made in this CfE should be maintained and will not review the RTSs on reporting/record keeping ahead of the go-live of the DLT Pilot regime. In addition, ESMA is conscious that the MiFIR review process might trigger a broader review of the standards on reporting in the medium/long term, so the proposed approach under the DLT Pilot should avoid multiple and consecutive reviews of the same reporting standards in case such review is confirmed. In this context, it should be emphasised that the experience gained with the application of the Pilot would be important for ESMA to develop long term regulatory changes that are evidence based.

132.   In addition, ESMA considers that some clarification of how specific L1 provisions under MiFID/R and DLT Pilot regulation should apply to DLT MI, and its members are equally needed ahead of the go-live of the regime. Notably, a clarification on the application of the definition of "DLT financial instrument", "DLT MTF" as well as a clarification on how Article 50 of MiFID on clock synchronisation apply to private individuals that are member of DLT platforms, i.e., the requirement for members of the TVs that are private individuals using smartphones or personal computers to

synchronise their "business" clocks to record the date and time of reportable events. ESMA has requested a clarification on the interpretation of these L1 provisions to the European Commission.

133.   Based on the feedback, targeted clarifications on the application of the RTS 22/23/24 and 25 should be provided before the go-live of the regime and could be addressed through ad-hoc supervisory convergence measures. Such clarifications are further explained under each question related to sections 5.2 and 5.3 of this report.

134.   Finally, ESMA considers that the traditional transaction reporting approach might not be the most efficient way to gather supervisory data on DLT transactions. Feedback provided by market stakeholders[14] during the development of the EC proposal for the DLT Pilot regime indicated that: (i) the main benefits of DLT for regulators would consist in the enhanced monitoring capabilities by removing the need for systematic transaction reporting by all stakeholders involved in a transactions[15]; (ii) a single reporting system could be beneficial and (iii) changes that would reduce compliance costs, including IT/reporting, would be beneficial to avoid potential barriers to entry for the smaller market participants.

135.   For these reasons, the DLT Pilot regulation provides flexibility in the framework to allow for NCAs to test alternative reporting/data access solutions. In order to ensure that ESMA and NCAs have access to important information to be able to assess the specificities of DLT data that would allow them to develop long term regulatory changes adapted to the technology, ESMA considers that the best approach would be that both NCAs and stakeholders use the flexibility provided in the Pilot framework and concentrate their implementation efforts on making the reporting exemption operational.

136.   With respect to the use of the exemption, ESMA emphasises the importance of maintaining a consistent approach across NCAs to ensure the integrity, consistency, usability, and comparability of the supervisory data collected from DLT market infrastructures across the EU. Following this CfE, ESMA have already identified a few policy recommendations that NCAs should consider when developing the compensatory measures in exchange for the reporting exemption. Considering the importance of ensuring immediate convergence with respect to data reporting and to allow for consistent and comparable supervisory data, ESMA has included these recommendations in sections 5.2.2, 5.2.3.3, 5.3.1.6 and 5.3.1.8 of this report.

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[14] Financial services – EU regulatory framework for crypto-assets (europa.eu) and Financial services – EU regulatory framework for crypto-assets (europa.eu)

[15] In both the "pull approach" and DLT-based "reporting", financial authorities are no longer passive recipients of data but are actively extracting the information they need from financial institutions. Hence, in essence, this is no longer "data reporting" but more like "data-sharing" arrangements. […] In such a system, the current regulatory reporting process could be simply replaced by sharing relevant data aggregates with the supervisor in the DLT network. In this case, since everyone is looking only at a single record of financial contracts, "data standardisation" effectively happens at the level of the operational data. A main benefit of this approach is that it would make reconciliation efforts a thing of the past. Cit. from BIS – Financial Stability Institute – FSI Insights on policy implementation No 29 From data reporting to data-sharing: how far can suptech and other innovations challenge the status quo of regulatory reporting?"

5.2.2 RTS 22 on transaction reporting – Private individuals

5.2.2.1 Background

137.　　ESMA preliminary view in the CFE was that DLT MTFs could be requested to report the transaction on behalf of the private individual as part of the compensatory measure foreseen by Article 4(1)(c) of the pilot regime.

138.　　ESMA also wanted to understand what other solutions can be explored to address this data gap before the Pilot Regime becomes fully applicable.

5.2.2.2 Feedback to the call for evidence (Q23)

139.　　All respondents agreed with ESMA regarding the DLT MTFs reporting of transactions on behalf of private individuals either by actively reporting it to their supervisor or allowing all relevant competent authorities access to those data. Some respondents explicitly indicated that they would be interested to request a permission under the DLT Pilot to provide direct access to DLT trading to natural persons.

140.　　Two respondents commented that all the data on a DLT MTF would be available to the members of the DLT MTF due to the inherent characteristics of the blockchain. According to them, the most efficient solution considering the nature of DLT would be for the DLT MTFs to grant read access to regulators for market monitoring purposes. For any additional information prescribed in RTS 22, it would be possible to register such information off-chain in a separate database connected to the ledger. In the same vein, one other respondent indicated that, for the DLT Pilot to be successful, regulators should offer credible DLT-based alternatives to the traditional systems that can equally secure all of the underlying regulatory objectives.

5.2.2.3 Conclusions and way forward

141.　　ESMA considers that while private individuals will not be subject to transaction reporting, a legal gap remains due to the fact that MiFIR Article 26(5) imposes an obligation on Trading Venues to report transactions on behalf of "firms" and not "natural persons". A solution to address this gap would be for NCAs to grant the reporting exemption and request DLT MTFs to give access to all relevant data concerning natural persons executing transactions as a compensatory measure in exchange for the exemption.

142.　　Alternatively, the information about the natural persons executing transactions could be requested to DLT MTFs as a compensatory measure from the intermediation exemption. Concerning the latter case, ESMA has requested a clarification to the European Commission on the possibility for NCAs to use such compensatory measure to request additional supervisory data in transaction reports even if the exemption linked to the compensatory measure does not concern the obligation to report transactions under Article 26 MiFIR.

5.2.3 RTS 22 - Details to be reported

5.2.3.1 Cancellations and corrections

5.2.3.1.1 Background

143.   ESMA intended to gather views on how details to be reported under Annex I Table 2 of RTS 22 would be reported, with a specific focus on reporting of cancellation and corrections.

144.   ESMA sought feedback to understand how DLT environments could treat cancellations given that the data recorded in these infrastructures is immutable. ESMA intended also to understand whether in a DLT environment is necessary to introduce another status field beyond "NEW" and "CANC".

5.2.3.1.2 Feedback on the call for evidence (Q24)

145.   The majority of respondents agreed with ESMA arguing that it is not necessary to amend current fields 1 and 2 in RTS 22. However, respondents clarified that the transactions recorded on a blockchain are immutable, so it is not possible to modify such records. To report a modification or a cancellation a new block should be created and a "gas fee" is requested to cover the costs arising from the creation of a new block. Gas fees are the costs to conclude a transaction on a DLT. One respondent suggested to report transactions after the settlement process to limit the number of corrections and related costs.

146.   During the workshop carried out by ESMA in March 2022, respondents mentioned one issue related with the sequencing of transactions. In the current reporting regime, entities can report new transactions or cancel them. In case of modification the reporting entities must cancel the original transactions and then resubmit it. However, in an immutable environment such as in a DLT infrastructure, this may not be possible.

147.   The transaction reports occurred in a DLT MTF cannot be cancelled and it would not be possible to modify records in case of misreporting (more details. are available in Annex 6). According to the respondents, in case of wrong report that transaction would remain available in the DLT. To correct the mistake, the entity would report a new block representing the correct transaction, but the previous one would not be eliminated.

5.2.3.1.3 Conclusions and way forward

148.   ESMA intends to further investigate the impact of gas fees as a result of the transaction reporting requirements under the DLT pilot. In particular, the reporting scenarios for cancellations or modifications due to the misreporting might need to be revisited. ESMA preliminary view is that, when the error is attributable to the DLT MI, "gas fees" should be paid by the DLT MI and not the parties to the transactions. In addition, such fees should not be included in the price related fields of RTS 22 in a similar fashion as "commissions" are not included for traditional transactions.

149.   In addition, ESMA considers that corrections under the transaction reporting regime are dependent on the fact that transaction reports/files are in sequence (i.e., NEWT/CANC/NEWT), therefore DLT infrastructures that do not request the reporting

exemption should have systems in place to ensure that the right sequencing is respected**.**

150.	Furthermore, following the feedback received during the subsequent workshop with the respondents to the CfE (see Annex 1 of this Report), the cancellation under the traditional sequential reporting process might not be the most efficient approach in the context of the reporting exemption. Granting the reporting exemption and having direct access to DLT data will allow regulators to explore alternative approaches to the sequential cancellation process.

### 5.2.3.2	Trading Venue Transaction Identification, TVTIC

5.2.3.2.1	Background

151.	ESMA intended to gather views on how details to be reported under Annex I - Table 2 of RTS 22 would be reported, with a specific focus on the TV Transaction Identification Code (TVTIC). Annex I – Table 2 of RTS 22 provides the list of fields that reporting entities should use to provide transaction reports under MiFIR Article 26.

152.	ESMA sought feedback from market participants to understand whether the current field used to report the TVTIC is fit for purpose in a DLT environment.

5.2.3.2.2	Feedback to the call for evidence (Q25)

153.	The vast majority of respondents agreed with ESMA and confirmed that the TVTIC field should not be amended in RTS 22.

154.	One responded suggested to assign a new identification code to DLT MTFs, while another respondent considered the TVTIC inappropriate in a DLT MTF because each transaction recorded on a blockchain is uniquely identified via a transaction hash (unique cryptographic key).

5.2.3.2.3	Conclusions and way forward

155.	ESMA considers that TVTIC should not be amended under RTS 22. At the same time, ESMA notes that, granting the reporting exemption and having direct access to DLT data could allow regulators to explore alternative approaches to the use of the TVTIC, e.g. based on the transaction/block hash.

5.2.3.3 Identification of parties to DLT transactions

5.2.3.3.1 Background

156. ESMA intended to gather views as to whether the use of LEI and natural person identifier, as prescribed by MiFIR Article 26(6) and Article 5[16] and 13[17] of Commission Delegated Regulation (EU) 2017/590, would cause implementation issues for a DLT MTF.

5.2.3.3.2 Feedback to the call for evidence (Q26)

157. Most respondents agreed with ESMA and confirmed that the fields in RTS 22 that identify the Firm, Buyer, Seller and Decision maker should not be amended. One entity requested to clarify how to define the decision maker in case of liquidity pools. ESMA considers that these fields in RTS 22 should not be amended.

158. Regarding field 4 on the executing entity identification code, respondents indicated that there might be a need to relax the validation rule for such field in the cases where an exemption from the intermediation rule is granted and natural persons become members of the DLT MI. One respondent indicated that it would be sufficient to allow for the LEI of the DLT MI to be populated in Field 4 because in such cases the national IDs of the individual executing entities could be retrieved via the relevant buyer/seller fields.

5.2.3.3.3 Conclusions and way forward

159. As indicated in section 5.2.2.3 above, ESMA considers that the national ID of executing entities that are natural persons could be requested as a compensatory measure from the reporting exemption or from the intermediation exemption. Concerning the possibility of retrieving the national ID and integrate it in traditional RTS 22 reports via compensatory measure from the intermediation exemption, ESMA has requested a clarification to the European Commission on the possibility for NCAs to use such compensatory measure to request additional supervisory data in transaction reports even if the exemption linked to the compensatory measure does not concern the obligation to report transactions under Article 26 MiFIR.

160. In this respect, ESMA would like to emphasise that the existing validation rule of field 4 of RTS 22 would need to be relaxed to allow for the provision of the national ID of natural persons in this field because the intermediation exemption would not allow

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[16] "An investment firm which executes a transaction shall ensure that it is identified with a validated, issued and duly renewed ISO 17442 legal entity identifier code in the transaction report submitted pursuant to Article 26(1) of Regulation (EU) No 600/2014. 2. An investment firm which executes a transaction shall ensure that the reference data related to its legal entity identifier is renewed in accordance with the terms of any of the accredited Local Operating Units of the Global Legal Entity Identifier System."

[17] "Member States shall ensure that legal entity identifiers are developed, attributed and maintained in accordance with the following principles: (a) uniqueness; (b) accuracy; (c) consistency; (d) neutrality; (e) reliability; (f) open source; (g) flexibility; (h) scalability; (i) accessibility. Member States shall also ensure that legal entity identifiers are developed, attributed, and maintained using uniform global operational standards, are subject to the governance framework of the Legal Entity Identifier Regulatory Oversight Committee and are available at a reasonable cost. Investment firm shall not provide a service triggering the obligation for an investment firm to submit a transaction report for a transaction entered into on behalf of a client who is eligible for the legal entity identifier code, prior to obtaining the legal entity identifier code from that client. The investment firm shall ensure that the length and construction of the code are compliant with the ISO 17442 standard and that the code is included in the Global LEI database maintained by the Central Operating Unit appointed by the Legal Entity Identifier Regulatory Oversight Committee and pertains to the client concerned."

to depart from the field description in RTS 22. Any change to the existing validation rules should not affect market participants that are not involved in DLT trading, any change to the validation rules should ensure backward compatibility. ESMA is exploring practical solutions to amend these rules in a way that do not affect stakeholders that are not involved in DLT transactions.

161.　　　At the same time, as mentioned under section 5.2.2.1, a more robust solution to address this information gap that would not imply system changes affecting the whole market would be for NCAs to grant the reporting exemption and request DLT MTFs to give access to an adapted version of the RTS 22 template which would allow for the LEI of the DLT MTF to be included in the executing entity field while the IDs of natural persons would be populated in the respective buyer/seller fields as a compensatory measure in exchange for the reporting exemption.

5.2.3.4 Transmission of an order

5.2.3.4.1 Background

162.　　　ESMA sought the views from market participants to understand whether the current requirements on order transmission for investment firm transmitting the order in a DLT financial instrument, i.e. obligation to submit a separate report to its NCA in case such investment firm did not submit all required details to the firm receiving the order, can be also applied in a DLT environment. ESMA sought feedback on the neccessity to amend Fields 25-27 of RTS 22 on the transmission of an order, to account for the specificities of DLT transactions.

5.2.3.4.2 Feedback to the call for evidece (Q27)

163.　　　The vast majority of respondents agreed with ESMA assessment and stated that the fields related to the transmission of the order should not be amended. One entity suggested to discriminate between the fields that should appear on the transaction published on the DLT compared to fields that can be stored off-chain provided that they can be reconciled with the data available on the ledger.

5.2.3.4.3 Conclusions and way forward

164.　　　In light of the above clarifications, ESMA confirms that the specific rules concerning order transmission as defined in RTS 22[18] and related guidelines[19] do apply in the context of the DLT Pilot regime. As a general principle, the investment firm transmitting the order in a DLT financial instrument should submit a separate report to its NCA in case such investment firm did not submit all required details to the receiving firm; these requirements apply regardless of whether an exemption from reporting is granted to the DLT MI and its member or not.

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[18] RTS 22: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R0590&from=EN

[19]　　　Guidelines　on　transaction　reporting :　　　https://www.esma.europa.eu/sites/default/files/library/2016-1452_guidelines_mifid_ii_transaction_reporting.pdf

165. ESMA considers that the application of the reporting rules concerning the "transmission of an order" are dependent on the interpretation of the definition in the DLT Pilot regulation of "DLT financial instruments" as "*transferable securities as defined by Article 4 of MiFID II that are […] transferred [..] using a DLT*".

166. Stakeholders indicated that it is unclear whether the term *"transferred"* allows for chain of intermediaries to provide access to DLT markets to investors who do not want themselves to be direct members/participants of the DLT, i.e. whether an execution in a DLT financial instrument be allocated to an end client that is not a direct member of a DLT MTF/TSS.

167. ESMA understands that such scenario is possible under the DLT Pilot regime. The fact that the Pilot allows a wider scope of persons to benefit from disintermediated access to trading venues does not preclude intermediated access to DLT for those clients that wish such an access. In other words, transfers on DLT can be executed by intermediaries on behalf of clients, without those clients being members of a trading venue on which that transaction has been executed. These considerations are subject to a formal confirmation by the European Commission.

168. In addition, ESMA considers that, depending on their execution model and the number of intermediaries in the transaction chain, the transfer of orders outside the DLT MI might have an impact on NCAs' surveillance due to the fact that compensatory measures that NCAs could impose on the DLT MI to obtain essential data needed to supervise trading in DLT financial instruments cannot be equally imposed on the other intermediaries in the transaction chain passing the order that is ultimately executed on the DLT MI.

169. These intermediaries, will no longer be obliged to report the specific segment MIC code of the DLT MTF as the venue of execution nor will they be obliged to report additional supervisory data that might be required to the DLT MIs as compensatory measure, which creates a gap in the data that should be used by supervisors to monitor trading activity on these venues as well as it creates an uneven playing field between DLT MI and the intermediaries passing the order in DLT financial instrument. In light of these considerations, ESMA is reflecting on possible compensatory measures that could be requested to mitigate the above risks in the case where a DLT MI request an exemption under the DLT Pilot.

5.2.3.5 Trader, algorithms, waivers and indicators

5.2.3.5.1 Background

170. ESMA intended to gather views from market participants to understand whether the fields used to identify traders, algorithms and waivers can be also used in a DLT environment. ESMA sought feedback on the neccessity to amend Fields 57-65 of RTS 22, to account for the specificities of DLT transactions.

5.2.3.5.2 Feedback to the call for evidence (Q28)

171. The majority of respondents agreed with ESMA and argued that Fields from 57 to 65 should not be amended. One responded argued that waivers and post-trade

indicators are not applicable in a DLT, because all information is either public or semi-public.

5.2.3.5.3 Conclusions and way forward

172. ESMA considers that these fields should not be amended under RTS 22. Further details on the applicability of pre-trade waivers or post-trade indicators are provided in Section 5.1.1 of this Report.

5.2.3.6 Short selling

5.2.3.6.1 Background

173. ESMA sought feedback on the neccessity to amend Field 62 of RTS 22, to account for the specificities of DLT transactions, and in particular on whether short selling is possible at all on a DLT MI.

5.2.3.6.2 Feedback to the call for evidence (Q29)

174. The majority of respondents believe that field 62 covering the short-selling flag should not be amended. However, seven respondents argued that short-selling would not be technically possible in a DLT MTF environment because the transfer of assets can occur only in case it is effectively owned.

5.2.3.6.3 Conclusions and way forward

175. In its Report on the review of MiFIR transaction reporting [20], ESMA recommended for the removal of this information from the transaction reporting considering that the definition of a short sell in the short selling regulation and its application within MiFIR transaction reporting cannot be reconciled. For this reason, pending the review of the MiFIR transaction reporting requirement, ESMA will issue specific convergence measures for NCAs in relation to the application of the RTS 22 requirement to report Field 62 for DLT transactions. ESMA also notes that, in the case where an exemption from transaction reporting is granted, the obligation for the DLT MIs to obtain the information required in the short selling field of RTS 22 could be waived.

5.2.3.7 *Transaction details (Fields 28-40)*

5.2.3.7.1 Background

176. ESMA sought feedback on the neccessity to amend Fields 28-40 of RTS 22, to account for the specificities of DLT transactions.

177. ESMA sought views from market participants to understand whether the transaction details currently reported from field 28 to 40 by reporting entities can be also applied in a DLT environment or if RTS 22 should be amended.

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[20] See section 8.2 of ESMA Final report: ESMA proposes amendments to MiFIR transactions and reference data reporting regimes (europa.eu)

5.2.3.7.2 Feedback to the call for evidence (Q30)

178.   The vast majority of respondents argued that the transaction details in field 28 to 40 in RTS 22 should not be amended.

179.   Regarding the reporting of price currencies, the feedback received under this question are addressed under Section 5.3.8 below

5.2.3.7.3 Conclusions and way forward

180.   Considering the feedback received and further to the workshop held by ESMA with the respondents to the CfE (see summary in the Annex), ESMA believes that L2 rules on Fields 28-40 should not be amended while L3 guidance should be provided on the reporting of a specific sub-set of fields such as:

181.   Field 33 – Price: ESMA would like to clarify that gas fees should not be included in the price fields in a similar fashion as it is currently done with commissions (see analysis under Q24 for further details).

182.   Field 34 – Price currency: conclusions related to all currency fields to be reported under RTS 22, RTS 1 and RTS 2 are indicated under section 5.3.8 below.

183.   Field 36 – Venue: concerning the use of "XOFF", ESMA considers that the application of the reporting rules concerning the allocation of "market facing" transaction to clients that are not direct members/participants of the DLT MI are dependent on the interpretation of the DLT Pilot regulation definition of "DLT financial instruments" as *"transferable securities as defined by Article 4 of MiFID II that are […] transferred [..] using a DLT"*.   In light of the considerations in section 5.2.3.4 above, ESMA confirms that the specific rules concerning the use of "XOFF"[21] for "client facing" transactions as defined in RTS 22 and related guidelines[22] do apply in the context of the DLT Pilot.

184.   Field 40 – Complex trade ID: ESMA clarifies that this field does not apply in this context because strategies do not fall within the DLT Pilot scope.

5.2.4 RTS 23 on reference data reporting

5.2.4.1 Technical arrangements to submit reference data to ESMA

5.2.4.1.1 Background

185.   ESMA sought feedback on the arrangements DLT MTFs will have to implement to provide reference data to ESMA's Financial Instrument Reference Data System (FIRDS).

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[21] RTS 22 – Field 36 – Venue: Use MIC code 'XOFF' for financial instruments admitted to trading, or traded on a trading venue or for which a request for admission was made, where the transaction on that financial instrument is not executed on a trading venue, SI or organised trading platform outside of the Union, or where an investment firm does not know it is trading with another investment firm acting as an SI: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R0590&from=EN
[22]   Guidelines   on   transaction   reporting :   https://www.esma.europa.eu/sites/default/files/library/2016-1452_guidelines_mifid_ii_transaction_reporting.pdf

186.   In the Call for Evidence, ESMA intended to gather views from market participants to understand whether the current reporting system of reference data can be also applied in a DLT environment.

5.2.4.1.2 Feedback to the call for evidence (Q31)

187.   The feedback provided by respondents is mainly positive as they believe that the current arrangements to report reference data under RTS 23[23] in the context of the DLT pilot should not be amended. In this context, stakeholders requested clarifications on the interpretation of term "*issued using DLT*" of the L1 definition of DLT financial instrument under the DLT Pilot regulation[24]. Given that the regulation does not provide a definition of issuance, stakeholders considered that it was unclear whether the re-issuance of existing traditional instruments in DLT form would be compatible with the definition of DLT financial instrument under the DLT Pilot.

188.   The majority of respondents argued that a new optional field for Digital Token Identifier (DTI) may be important. Further details on this topic are described in section 5.3.1.6 under Q43-45.

5.2.4.1.3 Conclusions and way forward

189.   Given that this is the only additional field compared to the set of fields required in RTS 23 that was identified as needed by stakeholders, ESMA considers that an immediate review of the technical standards on reporting to accommodate solely for this additional field to be reported would not be appropriate at this stage (see considerations under section 5.2.1 above).

190.   However, ESMA fully recognises the importance of the DTI to ensure market integrity. Among others, ESMA has identified some benefits of obtaining the DTI, notably:

a) The ability to identify the type of e-money tokens used for settling transactions, without it NCAs will not be able to distinguish between central Bank money in tokenised form and stable coins (see section 5.3.1.8 below for further details).

b) The ability to identify the governance model associated with the type of DLT underlying the tokenised instrument, which ESMA understand may be important to assess the safeguards that DLT MI have in place to prevent new form of market abuses[25].

c) The ability to unambiguously link the tokenised instrument with the relevant blockchain where the instrument is issued/traded/settled, which enables regulators to monitor DLT specific risks[26] and

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[23] RTS 23: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R0585&from=EN
[24] "financial instruments' within the meaning of Article 4(1)(15) of Directive 2014/65/EU that are issued, recorded, transferred and stored using a DLT".
[25] See BIS report N.58 for further details: Miners as intermediaries: extractable value and market manipulation in crypto and DeFi (bis.org).
[26] See section 3.3 of the BIS report on Distributed ledger technology in payment, clearing and settlement (bis.org) for further details on DLT-specific risks.

d) The ability to connect the ISINs pertaining to traditional financial instruments with their tokenised version. Such ability is important in light of the extensive interpretation of the concept of "DLT financial instrument" which allows for existing financial instruments to be re-issued in digital form. In such cases, the same ISIN can be traded on both traditional venues and DLT ones.

191.   For all these reasons, ESMA recommends NCAs to require the DTI as compensatory measure under the DLT Pilot regime. Such compensatory measure would be important 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.

192.   Concerning the re-issuance of existing traditional instruments in DLT form, ESMA understands that recital 3 expressly confirms that 'tokenisation of financial instruments' can be done by either "the digital representation of financial instruments on distributed ledgers or the issuance of traditional asset classes in tokenised form to enable them to be issued, stored and transferred on a distributed ledger", which "is expected to open up opportunities for efficiency improvements in the trading and post-trading process."

193.   Therefore, even if the term 'issuing' is not defined in the DLT Pilot Regime, considering the purpose and objectives of this legal act, the definition of DLT Financial Instruments does not seem to prevent issuing existing financial instruments in digital form on distributed ledger and thus allowing market infrastructures that trade or settle using DLT to benefit from the DLT Pilot Regime. In the same vein, the DLT Pilot Regime also seem to allow for trading in existing 'tokenised financial instruments'. These considerations are subject to a formal confirmation by the European Commission.

194.   However, it is up to the market operators, by liaising with competent authorities, to assess practical difficulties and feasibility of different ways to issue or record securities on distributed ledger and to assess the compliance of any such issuance with the applicable national rules. In light of these rules, national legislators might decide to restrict the possibility of re-issuing existing financial instrument in DLT form.

5.2.4.2 Issuer related fields

5.2.4.2.1 Background

195.   Annex I Table 3 of RTS 23 contains the details to be reported according to Article 1 of the same regulation. ESMA sought feedback on reporting of (i) issuer related fields; (ii) Issuer and venue fields; (iii) notional; (iv) bonds and other forms of securitised debt.

5.2.4.2.2 Feedback to the call for evidence (Q32)

196.   The vast majority of respondents believe that field 5 on the issuer of the financial instruments should not be amended. In case of security tokens representing shares/units of non-ETF UCITS that are re-issued using DLT, one entity proposed to populate the issuer field with the LEI of the DLT MI. In case of security tokens that are solely issued using DLT, the same entity proposed to populate field 5 with the LEI of the fund (or the respective sub-fund, where relevant).

5.2.4.2.3 Conclusions and way forward

197.   ESMA concludes that this field under RTS 23 should not be amended, and no other fields should be introduced. In addition, ESMA considers that the approach suggested by one entity concerning non-ETF UCITS is dependent on the interpretation of the notion of "issuer" under the DLT Pilot.

198.   As highlighted in Section 5.1.1.2 above, respondents to the CfE provided mixed feedback on this question, some of them argued that DLT financial instruments should be treated as derivatives instrument, i.e. they are not "issued" but rather "created" by the DLT MI; other stakeholders indicated that the use of DLT for the issuance, recording, transfer and storage of those securities does not change the legal nature nor the economic value of those instruments.

199.   ESMA considers that a case-by-case assessment should be made depending on the type of instrument being issued and its characteristics. As a general principle, if the characteristics of the financial instrument are the same as its DLT version and the only difference is the technology used for creating the respective instruments, then the issuer of both the financial instrument and its tokenised version should be the same.

200.   Such principle is in line with the ISIN allocation principles in the recently revised ISO 6166:2021 standard (clause 4.2). The principle for ISIN issuance is technology-agnostic, meaning that the type of technology used for issuance should not give rise to a different identification and classification system.

201.   Maintaining the same ISIN for traditional financial instruments and their tokenised version has the benefit of ensuring that the trading activity in the DLT financial instrument and the one in its tokenised version can be linked via the same identifier. ESMA considers that NCAs should rely on an additional identifier – the Digital Token Identifier – to be able to distinguish between traditional financial instruments and their tokenised version.

202.   ESMA has requested a clarification on the interpretation the concept of "issuer" under the DLT Pilot to the European Commission. Following such clarification, ESMA will issue specific convergence measures in relation to the reporting of Field 5 of RTS 23.

5.2.4.3 Venue related fields

5.2.4.3.1 Background

203.   Annex I Table 3 of RTS 23 contains the details to be reported according to Article 1 of the same regulation. ESMA sought feedback on reporting of (i) Trading venue – segment MIC code; (ii) Financial Instrument Short Name; (iii) date of admission related fields.

204.   ESMA intended to gather views from stakeholders to understand whether the current reporting of these fields can be also applied in a DLT environment.

5.2.4.3.2 Feedback to the call for evidence (Q33)

205.   The majority of respondents believes that the fields from 6 to 12 should not be amended. One respondent suggested to add a field for DTSN ("digital token short name") which represents the DLT security.

5.2.4.3.3 Conclusions and way forward

206.   ESMA concluded that this field under RTS 23 should not be amended, the DLT MI should be identified with a separate segment MIC and no other fields should be introduced. ESMA is considering further guidance on the population of Field 2 of RTS 23 to ensure that DLT MI report the information related to the DTSN in this field.

5.2.4.4 Notional

5.2.4.4.1   Background

207.   Annex I Table 3 of RTS 23 contains the details to be reported according to Article 1 of the same regulation. ESMA sought feedback on reporting of field 13 – notional currency. ESMA intended to gather views from stakeholders to understand how DLT MTFs would report notional currencies in FIRDS and whether RTS 23 should include new fields to capture other type of currencies.

5.2.4.4.2 Feedback to the call for evidence (Q34)

208.   ESMA received mixed views on this topic. One respondent argued that DLT financial instruments that are solely issued via DLT could be in principle denominated in e-money or CBDC and thus the 'notional' could be expressed in non-ISO currency. In this scenario, the respondent indicated that there are merits in flagging the reference data reports that the denomination is in digital currency/e-money token.

209.   Five respondents recommended to also make sure that digital currencies and e-money tokens are included in the list of reportable currencies. Concerning the general feedback on currency fields, further details are provided in section 5.3.1.8. below.

5.2.4.4.3 Conclusions and way forward

210.   ESMA intends to further assess whether Field 13 should be amended under RTS 23 in light of the observation provided by one of the respondents concerning DLT financial instruments that are solely issued using DLT.

5.2.4.5 Bonds or other forms of securitised debt

5.2.4.5.1 Background

211.   Annex I Table 3 of RTS 23 contains the details to be reported according to Article 1 of the same regulation. ESMA sought feedback on reporting of bonds and debt related fields. ESMA intended to gather views from stakeholders to understand how DLT MTFs would report information related to bonds and other forms of securitised debt.

5.2.4.5.2 Feedback to the call for evidence (Q35)

212. The vast majority of respondents believes that for debt related fields from 14 to 23, it is not necessary to amend the current reporting structure, confirming that they do not expect any implementation issue on these fields.

5.2.4.5.3 Conclusions and way forward

213. Following the positive feedback from stakeholders ESMA considers that these fields should not be amended under RTS 23.

5.2.5 RTS 25 on clock synchronisation

5.2.5.1.1 Background

214. ESMA expressed its preliminary view that no significant issues should be expected with DLT MTF ability to comply with the requirements set in RTS 25 and sought confirmation of such understanding.

5.2.5.1.2 Feedback to the call for evidence (Q36)

215. The vast majority of respondents agreed with ESMA's assessment that clock synchronization rules as defined in RTS 25 can apply to DLT MTFs too.

216. One respondent commented that DLT enabled environments are not as latency sensitive as traditional venues, because the sequence of distributed block publication enforces a synchronicity of its own. PTP synchronization could therefore reveal a significant cost for no added value.

217. While recognizing that changes to RTS 25 are not needed, some respondents also highlighted that a clarification on how the L1 obligation of clock synchronisation in Article 50 of MiFID applies to private individuals that are member of DLT platforms. In particular, it is unclear how the requirement to synchronise "business" clocks to record the date and time of reportable events applies to members of the DLT MI that are private individuals using smartphones or personal computers. ESMA has requested a clarification on the interpretation of these L1 provisions to the European Commission

5.2.5.1.3 Conclusions and way forward

218. ESMA will evaluate the impact of latency in the DLT environment and might issue specific convergence measures for NCAs in relation to the application of the RTS 25 requirement for DLT MI to synchronize their business clocks with a maximum divergence from UTC of 100 microseconds.

219. In addition, a clarification is needed on the L1 requirement for members of the TVs that are private individuals using smartphones or personal computers to synchronise their "business" clocks to record the date and time of reportable events (Article 50 of MIFID). ESMA has requested a clarification on the interpretation of these L1 provisions to the European Commission. Pending these clarifications, ESMA is considering specific convergence measures for NCAs in relation to the enforcement of

MiFID Article 50 requirement with respect to members of DLT MI that are private individuals.

5.3 Common aspects RTS 1/2/3/22/23/24

5.3.1 Definition of order

5.3.1.1 Background

220.　　ESMA asked respondents to provide their views on the need to adapt the definition of "order" contained in RTS 22 to better account for the specificities of DLT transactions.

5.3.1.2 Feedback to the call for evidence (Q37)

221.　　The respondents seemed overall aligned on the possibility to use the current definition of "order" to transactions in DLT instruments. In this regard some respondents advocated in favor of not introducing different definitions, so to keep the regulation technologically neutral.

222.　　They also raised no specific objection to the application of order record keeping requirements under Article 25 of MiFIR and found that the related RTS 24 would still be applicable in a DLT context. However, it was highlighted that the RTS 24 requirement to include the LEI of the submitter of the order should be waived for private individuals that are not eligible for an LEI.

223.　　Respondents however provided some feedback which ESMA duly noted for additional consideration:

- One respondent observed that cancellation of orders is not possible after the order is registered on the DLT;

- Another respondent argued that there is no "order" in DLT, but only transactions being queued for network execution. The notion of "order" would therefore be obsolete. In a similar fashion, a perspective DLT market infrastructure opined that the definition of order should be relaxed, so to ensure its applicability to trading protocols where a mix of on and off-chain solution are used.

5.3.1.3 Conclusions and way forward

224.　　Considering the feedback received, ESMA expects to issue specific convergence measures for NCAs in relation to the application of RTS 24 requirement for DLT MTFs to record the LEI of the submitter of the order in field 1 when the order is submitted by natural persons that are not eligible for LEIs.

225.　　In addition, ESMA has requested clarification to the EC in the relation of the application of Article 25(3) MiFIR obligation to record *details of any modification, cancellation, partial or full execution of the order* to DLT MIs. Pending such clarifications,

ESMA expects to issue specific convergence measures for NCAs in relation to the application of the corresponding requirements in RTS 24.

5.3.2 Chains of transmission on DLT financial instruments

5.3.2.1 Background

226.   ESMA asked respondents to provide their views on whether (i) chain on transmission; (ii) split and aggregation of orders and (iii) transmission of an order can occur on DLT.

5.3.2.2 Feedback to the call for evidence (Q38)

227.   Respondents mainly confirmed that chains of transmission can occur on DLT financial instruments, with only one respondent claiming the opposite (although without providing motivation).

228.   A trade association remarked that the actual working of transmission chains would differ depending on technology implemented:

–   Where order handling and execution takes place off-DLT (but settlement is on-DLT), chains of transmission operate in the same way as for traditional securities;

–   Where order handling and execution is on-chain, the systems can be designed so that orders can be transmitted within the DLT network.

5.3.2.3 Conclusions and way forward

229.   As already highlighted in the context of Section 5.2.3.4 above, ESMA understands that chain of intermediaries are admissible in the context of the DLT Pilot as compatible with the interpretation of the definition in the DLT Pilot regulation of "DLT financial instruments" as "*transferable securities as defined by Article 4 of MiFID II that are […] **transferred** [..] using a DLT***".

230.   ESMA considers that this possibility might result in an uneven application of the compensatory measures in the case one of the exemptions foreseen in the DLT Pilot is granted because the related compensatory measures cannot be imposed on the entities in the transaction chain that are not direct members of the DLT MI. ESMA is reflecting on possible compensatory measures that could be requested to mitigate the risks arising from intermediated access in the case where a DLT MI request one of the exemptions foreseen under the DLT Pilot.

5.3.3 Split or aggregated orders

5.3.3.1 Feedback to the call for evidence (Q39)

231.   All respondents confirmed that aggregation and disaggregation of orders is possible, both off-chain and directly on the DLT. Two respondents explained that this is

not an inherent feature, and that the system shall be specifically developed to allow for this possibility.

5.3.4 "Transmission of an order"

5.3.4.1 Feedback to the call for evidence (Q40)

232.   Respondents overall argued that the concept of "transmission of an order" as defined in Article 4 of RTS 22 is useful in the context of transactions in DLT instruments. In particular, a data provider noticed that this notion is particularly relevant when orders are routed via third parties.

233.   Only two respondents, both technology providers, opined on when an order should be considered as transmitted:

234.   The first respondent found that the point in which the order is "transmitted" is arbitrary from a technology point of view, so it would be for the regulator to determine.

235.   The second respondent proposed to consider the order as "transmitted" either after it has been submitted to the DLT node for validation, or after its validation and inclusion in the ledger.

5.3.4.2 Conclusions and way forward

236.   In the light of the feedback received, ESMA found that there is no compelling reason to amend the provision on order transmission to adapt it to DLT MTFs. As already highlighted in the context of Section 5.3.4 above, ESMA understands that the term *"transferred"* in the DLT financial instrument definition allows for orders in DLT financial instruments to be transmitted across several intermediaries that are not direct members of the DLT MI for final execution on the DLT MI, which in turns confirms the applicability of the "order transmission" requirements under RTS 22.

5.3.5 Definition of execution and transaction

5.3.5.1 Background

237.   ESMA analysed the phases of a transaction in financial instruments as defined in RTS 22, and gathered the preliminary views that those had to be amended, as not well reflecting the different stages of a DLT transaction. ESMA sought respondents' opinion as to whether the concept of "transaction" as currently defined is applicable at all to DLT trades. In particular, it was not clear at which stage a DLT transaction could be considered as "executed", thus triggering the reporting obligation.

5.3.5.2 Feedback to the call for evidence (Q41 - 42)

238.   Respondents largely agreed that the concept of "transaction" is still applicable to DLT transactions. Some of them observed that, as long as there is a transfer or

ownership or other rights, a transaction takes place, regardless of the technology used to enable such transfer.

239.　　Respondents indicated that the phases of a DLT transaction can vary depending on the technology. For instance, different types of digital signature may require the broadcast of the transaction to the network or not, and the moment in which the ownership of the DLT financial instruments is transferred can vary too, depending on how the accounts are set-up

240.　　A trade association warned that the legal concept of transaction should not be confused, at terminological level, with that of "DLT transaction", which is a term carrying a specific technical meaning within DLT systems.

241.　　Indeed, as another respondent clarified during the workshop held on 31 May 2022 (see Annex for further details), a "DLT transaction" involves several actors (such as validators, nodes, etc), which, while not being party to the legal transaction, play a specific role in its conclusion.

242.　　A technology provider disagreed with the majority of respondents. It explained that in a DLT MI context, trade and transaction are the same thing, while an order and a pending transaction are also the same thing. This respondent suggested that a revision of the definition of "transaction" may be required.

5.3.5.3　Conclusions and way forward

243.　　Considering the feedback received, ESMA reckons that there is no compelling evidence suggesting the need to revise the definition of transaction set in RTS 22, ESMA will therefore not propose amendments to the notion of "execution" as defined in RTS 22 as the current definitions are broad and flexible enough to capture in scope all types of DLT. However, ESMA will closely monitor the DLT Pilot implementation to assess the need to issue guidance/introduce legislative changes on how this concept applies to DLT MTF.

5.3.6　General fields: instrument identification and classification

5.3.6.1　Background

244.　　In the CfE ESMA expressed its interest in evaluating the introduction of a specific DLT financial instrument identifier, to provide competent authority with additional information relevant for supervisory purposes. ESMA requested respondents to provide their view on the usefulness of introducing such additional identifier.

5.3.6.2　Feedback to the call for evidence (Q43 - 45)

245.　　Respondents seemed divided between incumbent firms and new market participants.

246.　　Six respondents (three traditional trading venues, two trade associations and one university) argued that there is no need to amend the current instrument

identification and classification fields, as they would be applicable to financial instruments traded on DLT as well.

247. In this regard, one trade association suggested however that it is unlikely that DLT securities would be considered as fungible with traditional securities, by virtue of the constitution of the DLT security and the embedded features in the smart contract. As such, they would require their own ISINs different from the one assigned to the same instrument when traded on traditional venues. According to the same association, RTS 1 to 3, 22 and 23 should provide for specific Pilot Regime fields and flags. These would record that a DLT security has been issued using DLT market infrastructure under the Pilot Regime and nothing further.

248. Six respondents (four standard setting bodies, two trade association and two technology providers) proposed to introduce a specific identifier for DLT financial instruments. In particular, these respondents argued that while the revised ISIN standard clarifies that ISIN can also be assigned to DLT instruments, this identifier is not designed to capture all specificities of such instruments, and should therefore be complemented either by DTI, or by another identifier having similar features.

249. This latter remark was echoed by three standard setting bodies, which confirmed that ISIN identifies the assets, but does not reflect the technical and technological features of the of DLT instruments. These instruments may be traded on different types of DLTs having different technical features[27], which would not be reflected in the ISIN. In addition, in the case where a traditional financial instrument is re-issued in tokenised form, if the characteristics of the financial instrument are the same as its DLT version and the only difference is the technology used for creating the respective instruments, then the same ISIN should be assigned to both.

250. The reasoning above is in line with the ISIN allocation principles in the recently revised ISO 6166:2021 standard (clause 4.2). The principle for ISIN issuance is technology-agnostic, meaning that the type of technology used for issuance should not give rise to a different identification and classification system.

251. On a similar note, a technology provider observed that ISIN would not be assigned to specific tokenised assets that are not classified as financial instruments but are traded as such. Therefore, a specific identifier would be needed. To this remark, ESMA observes that at this stage such assets would not be subject to the reporting obligation under MiFIR.

252. A data seller, a technology provider and an innovative exchange proposed that uniqueness could be further enhanced by using, alongside ISIN and DTI, another identifier (FIGI).

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[27] As an example, please consider the case of a "fork" on DLT. In this situation, each side of the fork will contain its copy of the original records but validate transactions according to a different protocol. All instruments recorded on the DLT before the fork event would maintain their original ISIN, but their DTI would change to account for the different transmission protocol.

5.3.6.3 Conclusions and way forward

253. Following additional research on this topic, and further interactions with standard setting bodies, ESMA considers that a case-by-case assessment should be made depending on the type of instrument being issued and its characteristics.

254. As outlined in the conclusions to Section 5.2.4.2 above, in the case where a traditional financial instrument is re-issued in tokenised form, it would not be possible to assign a different ISIN to the tokenised instrument if the full set of characteristic of this instrument remains the same as the traditional instrument and the only difference is the technology used for issuing the respecting instruments as this allocation would not be compatible with the general principle for ISIN issuance that is technology-agnostic, meaning that the type of technology used for issuance should not give rise to a different identification and classification system .

255. Based on the above, ESMA considers that the introduction of a DLT instrument identifier would indeed be important to ensure that the standard trading activity in the financial instrument and the one in its tokenised version can be monitored and compared and that potential abuse via different platforms or across platforms can be detected.

256. In addition, ESMA has identified additional benefits of obtaining the DTI, notably:

   e) The ability to identify the type of e-money tokens used for settling transactions. Without the DTI, NCAs will not be able to distinguish between central Bank money in tokenised form and stable coins (see Section 5.3.8 below for further details).

   f) The ability to identify the governance model associated with the type of DLT underlying the tokenised instrument, which ESMA understand may be important to assess the safeguards that DLT MI have in place to prevent give rise to new form of market abuses[28].

   g) The ability to unambiguously link the tokenised instrument with the relevant blockchain where the instrument is issued/traded/settled, which enables regulators to monitor DLT specific risks[29].

   h) The ability to enable regulators to connect and distinguish the traditional financial instruments univocally and unambiguously from its tokenised version. This ability is crucial in light of the extensive interpretation of the concept of "DLT financial instrument", which allows for existing financial instruments to be re-issued in digital form. In such case, the same ISIN can be traded on both traditional venues and DLT ones.

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[28]

[29] See Raphael Auer, Jon Frost and Jose Maria Vidal Pastor "Miners as intermediaries: extractable value and market manipulation in crypto and DeFi" in BIS Bulletin n. 58, available at: https://www.bis.org/publ/bisbull58.pdf

257. For all the above reasons, ESMA considers that the inclusion of a DLT instrument identifier is necessary for DLT financial instruments that are partially or fully traded on chain. ESMA will further assess the need for the DTI in the case of DLT financial instruments exclusively traded off-chain provided that this possibility is foreseen by the L1 definition of "DLT MTF" in the DLT Pilot regulation. ESMA has requested a clarification on the interpretation of this definition to the European Commission and, if needed, will publish further guidance on this before the start of application of the DLT Pilot regime.

258. At the same time, as explained under Section **Error! Reference source not found.** above, ESMA considers that a full review of the technical standards should not be conducted at this stage to accommodate for an additional field in the transaction report as well as for the publication of post-trade transparency but it should rather be conducted in parallel with the wider review of technical standards that will be performed following the MiFIR review process.

259. The said approach would allow ESMA and NCAs to identify all changes to the technical standards on the basis of the practical experience gained with the application of the DLT Pilot regime Regulation without having to conduct multiple review of the technical standards.

260. However, in order to ensure that regulators have the necessary information to properly assess the specificities of DLT and considering that such information is available as part of the DTI reference data, ESMA recommends NCAs to require the DTI as compensatory measure under the DLT Pilot regime.

261. In the context of post-trade transparency (RTS 1 and 2), while there is currently only a requirement to provide the ISIN, ESMA recommends publishing on top of the fields in Table 3 Annex I of RTS 1 and in Table 2 Annex II of RTS 2, which are the minimum set of fields to be provided in the post-trade transparency reports, the DTI.

262. ESMA considers that including the information on the DTI will enrich the post-trade information published and provide market participants with valuable information. ESMA intends to include the publication of the DTI also in its upcoming guidance on the DLT Pilot.

263. Finally, regarding the use of an additional FIGI standard together with the ISIN and the DTI, ESMA preliminary observation is that the combination of ISIN and DTI would be sufficient to unambiguously identify the tokenised financial as well as the underlying DLT.

5.3.7 Reporting formats, systems and IT infrastructure

5.3.7.1 Background

264. In Q46 and 47 ESMA expressed the preliminary view that the introduction of new technologies such as DLT should not have a significant impact on data elements to be reported, and that the number of amendments to the existing RTS on reporting should be limited to avoid the undesired effect of making the data on traditional financial instrument not comparable with the data on their "tokenised" equivalent.

265.   However, ESMA was aware that the introduction of DLT might have an impact on the format in which the information is represented as well as the systems to be set up to provide the relevant information to the regulators and sought feedback on this aspect.

266.   In particular, ESMA was interested in whether the transaction reporting set up at national level would still be meaningful for ensuring the quality of data related to transactions executed on DLT MTFs or DLT TSS and whether investment firms' traditional reporting systems require setting up of separate/new IT infrastructures.

267.   In addition, with Q48 and 49 ESMA sought industry views as to whether formats different from ISO20022 might be more suitable to a DLT MI, while keeping the same common business definitions and logical messages. ESMA preliminary view was that maintaining ISO 20022 would be beneficial to ensure alignment with other reporting regimes under EU law.

5.3.7.2 Feedback to the call for evidence (Q46 - 49)

268.   According to most respondents the traditional reporting system and format in compliance with the ISO 20022 methodology can be used for reporting DLT transactions. A significant number of respondents also welcomed exploring alternative approaches to the traditional reporting adapted to DLT on-chain trading.

269.   Few respondents proposed to also consider JSON as an alternative format. Only one entity argued that ISO 20022 is not fit for purpose for DLT infrastructure since it consists of lengthy string-based fields and therefore it is unfit to accommodate with the reality of data as represented on a DLT.

270.   One respondent stated that if a blockchain transaction has already been validated, the executing entity may not be able to reverse the transaction. Another entity on the network would need to do so. This is relevant to understand how cancellations work in a DLT environment. Further details on this aspect are illustrated under Q24 above.

271.   Finally, respondents expressed split views regarding the need to set up separate/new IT infrastructure for investment firms' reporting systems. Half of the respondents believe that changes are needed at both hardware and software level mentioning that the new IT infrastructure should be continuously connected to the network and be able to produce the reporting from the DLT where transactions are represented in raw cryptographic data. The production of the report could also be outsourced to a third party.

5.3.7.3 Conclusions and way forward

272.   In order to ensure the integrity and comparability of data collected for market surveillance purposes, ESMA recommends that all the information sent and received or accessed in the context of the reporting exemption covers the same data fields under a common ISO 20022 XML format. Further details on this aspect are provided under Section 6 below.

273. ESMA will investigate whether further guidance is needed to ensure a clear representation of the sequences of events in the case of cancellations/modification in the DLT context.

274. ESMA will also conduct a study on how on-chain data can be retrieved, converted into the traditional reporting formats, and ingested by the existing authorities' systems. The study is described under Section 6.1 below.

275. ESMA will also investigate how the DLT pilot may affect the Transaction Reporting Exchange Mechanism (TREM) in terms of:

   a) the representation of non-ISO currencies (i.e central/commercial banks' money in tokenised form, e-money tokens)

   b) the determination of relevant competent authorities on financial instruments also admitted to trading in tradition TVs

   c) the possibility to have natural persons as executing entity in case of granted exemption.

5.3.8 Currency fields

5.3.8.1 Background

276. According to the DLT Pilot regulation, the settlement of payments shall be carried out through central bank money, including in tokenised form, where practical and available or, where not practical and available, through the account of the CSD in accordance with Title IV of Regulation (EU) No 909/2014 or through commercial bank money, including in tokenised form, in accordance with that Title, or using 'e-money tokens'.

277. Considering that financial instruments traded on a DLT MTF may be priced in other means than fiat currencies, in the CfE ESMA aimed at understanding from market participants whether it is possible to offer settlement of DTL securities in e-money tokens and how these transactions should be reported.

278. ESMA also carried out a preliminary analysis of the currency information that should be provided in relation to post-trade transparency reports for equity, equity-like and non-equity instruments, as well as for data reporting. ESMA preliminary conclusion was that it does not appear necessary to convert transactions reported in e-money tokens to EUR, since it appears very unlikely that a DLT security could be traded on several DLT MTFs using different settlement mechanisms.

279. Therefore, ESMA proposed a potential temporary solution to report currency fields when the financial instrument is priced in e-money tokens consisting in populating the currency fields with the fiat currency on which the e-money token refers to in order to maintain a stable value.

280. Moreover, ESMA asked market participants whether it is possible to settle transaction in DLT securities in different currencies and/or different e-money tokens and how such transactions should be converted in EUR.

5.3.8.2 Feedback to the call for evidence (Q50)

281.   Stakeholders replying to the CfE considered it is possible for firms to offer settlement of DLT securities in e-money tokens and, in this context, the majority of market participants agree with ESMA´s approach to determine the value for the e–money token by pegging it to the fiat currency value it refers to.

282.   However, some respondents raised awareness on the fact that some e-money tokens may in theory be highly volatile/illiquid and hence, where used for regulatory reporting or calibration, may introduce instability in the data. For several market participants, using a fiat currency as a proxy may be a workable solution but they considered that the RTS should be amended to include information about the actual token used plus the exchange rate used to convert to the fiat currency. Other respondents were of the view that referencing just the underlying fiat currency does not bring any real value and imposes additional risks. In addition, the same respondents believed that ISO 4217 or a new standard should accommodate or allow for different types of e-money tokens.

283.   Regarding the stakeholders' plans to offer settlement in e-money, a trade association and another stakeholder highlighted their dependencies on developments with MiCA and some central banks projects to issue CBDC.

284.   Regarding the settlement in different virtual currencies and/or different e-money tokens, respondents confirmed such scenario. In this context, it has been observed that, from a transaction reporting perspective, the conversion of EUR into the settlement currency is more relevant than the conversion of the settlement currency/digital money into EUR – since the trade could be agreed in EUR and settled in the relevant "other" currency/digital money.

285.   With reference to the conversion into EUR, from the feedback received no problems have been raised with the conversion of these transactions into euros and respondents identify some possible solutions:

- conversion may occur off-chain:

    a) when e-money tokens are converted back to fiat currencies;

    b) conversion could be done involving a third-party conversion venue (e.g. crypto exchanges) to predetermine the currency rates for EUR before the e-money tokens are sent on the DLT. However, such solution raised some concerns on the reliability of the conversion rates in EUR, as it appears that existing crypto currencies markets are indeed not as efficient as FX markets for fiat currencies;

    c) conversion can rely on an ESMA recognized benchmark to produce the conversion rate to EUR. Such rates should comply with BMR rules and be globally available 24/7.

- conversion may occur on-chain:

    a) using an oracle node that certifies to other nodes in the network the change in currency prices;

b) by executing two transactions as the result of one instruction: (1) the exchange of the crypto currency and (2) the exchange of FIAT currency. This way DLTs can support cross-currency and cross-border transactions. In this scenario, each transaction would be reported separately under ESMA rules.

286.　　　Concerning the reference data field 13 of RTS 23, one respondent to Q24 above argued that DLT financial instruments that are solely issued via DLT[30] could in principle be denominated in e-money or CBDC and thus the 'notional' could be expressed in non-ISO currency. In this scenario, the respondent expressed that it would be important to have an indication as to whether the notional is expressed in non-fiat currencies.

287.　　　Finally, considering this specific requirement under the DLT Pilot on the settlement, respondents indicated that, to the extent trade execution and settlement coincide in a DLT environment, it could be possible that the trading price is expressed/agreed in CBDC/e-money tokens, which currently are not official ISO currencies.

288.　　　For the reason above, several respondents expressed concerns on the current field 34 being too narrow as it only allows for fiat currencies. These respondents indicated that the ISO 24165 DTIs would provide the necessary reference data to identify the type and relevant characteristics of digital currency/e-money token used. The same reasoning apply to the quantity currency field 31 of RTS 22.

5.3.8.3 Conclusions and way forward

289.　　　 In the absence of a specific ISO standard currency for CBDC, commercial banks digital currencies and/or e-money tokens, ESMA recommends that NCAs require the DLT MI to provide the DTI as an additional data element requested by compensatory measure.

290.　　　With reference to the conversion into EUR, considering the feedback received from stakeholders, where relevant, ESMA recommends reporting fields 31 and 34 of RTS 22 converted from the digital money/e-money token into EUR.

291.　　　Regarding the reference data field 13 of RTS 23 and the observation of one respondent concerning DLT financial instruments that are solely issued using DLT, ESMA will closely monitor the DLT Pilot implementation to assess the need to issue guidance or introduce legislative changes in the future.

292.　　　In the context of post-trade transparency (RTS 1 and 2) ESMA recommends publishing the ISO 24165 DTIs on top of the minimum set of fields to be provided in the post-trade transparency reports (Table 3 Annex I of RTS 1 and Table 2 Annex II of RTS 2). Such addition would provide the necessary reference data to identify the type and relevant characteristics of digital currency/e-money token used in relation to the price and notional amount fields.

293.　　　Concerning the field 'price' and 'price currency' in RTS 1 and 3 ESMA recommends the same approach as for RTS 22, i.e. where the DLT instrument is traded

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[30] Not applicable to existing financial instruments that are re-issued using the DLT.

in digital money/e-money token it should be converted into EUR and reported in monetary value.

294.　　ESMA recommends the same approach also concerning bonds (RTS 2), where the DLT instrument is traded in digital money/e-money token it should be converted into EUR. Therefore, the field "Notional currency" will be set to "EUR" and the "Notional amount" will be set equal to the converted nominal amount of the bond from the digital money/e-money token into EUR .

6　Regulatory access to DLT and exemption from reporting

6.1　Study on DLT MTF and regulatory data

295.　　Following the review of the answers to the CFE, ESMA decided to conduct a study to better understand the involvement of DLT technologies in the context of DLT-MTFs' transaction reporting.

296.　　With this project, ESMA will explore how regulators can be admitted to the DLT MTF as regulatory observer participants in order to access the records of all transactions executed through the DLT MTF system in the case of an exemption to the reporting obligation is granted. Another relevant aspect that will be explored is the ability of a DLT MTF to produce an ISO-compliant RTS 22 report extracting the data stored on the DLT.

297.　　Based on the feedback received to this CFE, ESMA understands that a blockchain cannot be considered a database. For this reason, ESMA believes that most DLT MTFs will store limited transaction data in the block where the transaction is executed, while the remaining RTS 22 fields will be attached to the transaction as payload or meta-data. The payload or meta-data will be stored off-chain and linked to the on-chain transaction. The way such link is implemented will depend on the specificities of the DLT used.

6.2　Direct and immediate access to transaction data to regulators

6.2.1　Background

298.　　Having regard to Article 4 of the DLT Pilot Regime Regulation, ESMA's preliminary view as expressed in the CFE was that ESMA and NCAs efforts should focus on making the DLT direct access and re-distribution provisions operational.

299.　　An immediate review of RTS 22, 23 on reporting appeared neither efficient nor necessary to this end. Consequently, ESMA considered that DLT MTFs and DLT TSSs would need to choose between (a) the full exemption from RTS 22 which will be accompanied with the obligation to record all relevant details on the DLT and to grant direct access to the regulators, and (b) the full application of RTS 22.

6.2.2 Feedback to the call for evidence (Q52)

300.　　　ESMA considers the feedback received under Q52 already addressed in Sections 5.2.1, 5.2.2, 5.2.3, 6.3, 6.4, 6.5 and 6.6.

6.2.3 Conclusions and way forward

301.　　　Conclusions and way forward regarding the feedback received can be found under the sections listed in Paragraph 300300.

6.3 Scalability of the system and use of ISO 20022

6.3.1 Background

302.　　　With Q53 to 56 ESMA collected views to understand whether there is any technical impediment in recording on the DLT all the details described in Table II of the Annex to RTS 22 (see Section **Error! Reference source not found.**) and Table III of the Annex to RTS 23 (see Section **Error! Reference source not found.**) as well as all the reference data and transparency data necessary to perform the transparency (Article 2 of RTS 3) and the DVC calculations (Article 6 RTS 3).

303.　　　ESMA also enquired on the potential presence of any issues with obtaining the data elements required by RTS 22 and 23 from external databases like GLEIF, ISO 4217 list (currencies), ISO 10383 (MIC) or ANNA-DSB (ISIN) before the data is permanently stored into the distributed ledger.

6.3.2 Feedback to the call for evidence (Q53 - 56)

304.　　　Most respondents confirmed that it is possible to use the ISO 20022 methodology to store all type of information that should be reported about the said RTS on DLT, and that this will not have negative impact on the scalability of the system. Some respondents also indicated that the use of an ISO standards might be a factor enabling interoperability between DLT MIs and traditional infrastructures.

305.　　　This view was opposed by a technology provider, which observed that ISO methodologies are not compatible with encryption, and that they would cause scalability issues. Another technology provider specified that to store large datasets with the immutability and non-repudiation properties of DLT, e.g., for audit or record keeping, then it is more efficient to store the information off-ledger, but "anchor" it to the ledger by only inserting a hash of the data onto the ledger. This provides immutability and non-repudiation but stores it off-ledger in a more appropriate storage means.

306.　　　A trade association observed that additional regulatory work would be necessary to standardize the signature of smart contracts, and that it would not be appropriate to start dictating standards to the industry in this phase already.

307.　　　Regarding the feasibility of obtaining data elements from external databases before permanently storing them on the DLT, most respondents confirmed such

possibility. In particular, two trading venues explained that there would be no issue in transferring such data, that is already used by them, to the DLT.

6.3.3 Conclusions and way forward

308.   ESMA takes note of the valuable feedback received and will consider it in the context of the study on DLT MTF and Regulatory data.

6.4 Encryption and decryption of data

6.4.1 Background

309.   ESMA expressed its concern that admitting NCAs as regulatory observer participants on DLT could raise new challenges in terms of data access and keys management. In particular, regulators would need to be able to pull a data set directly from a DLT MTF and DLT TSS, and the DLT MTF and DLT TSS should give regulators direct access to the DLT and to the details of all transaction stored in it. To do so, a strong key management framework should be implemented between the regulators and the DLT MTF or DLT TSS.

310.   ESMA sought the industry feedback on such technical aspect.

6.4.2 Feedback to the call for evidence (Q57)

311.   Respondents have split views regarding the topic. For some of them there is no problem for the regulators to pull large amount of data, however, this may entail different risks such as:

a) Operational risks.

b) Cybersecurity and key management/custody.

c) Burdensome process for the regulator to extract data from different type of technologies.

d) Reliability of data.

e) Performance and scalability.

312.   According to some of those respondents such risks can be mitigated by a proper implementation of the system.

313.   Two respondents were against the pull approach[31] due to the technology not being suitable for this purpose, and the fact that DLT trading data might not be comparable or available simultaneously as compared to non-DLT trading data, thus hampering the NCAs ability to perform their supervisory duties.

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[31] See Footnote 15

6.4.3 Conclusions and way forward

314.   ESMA takes note of the valuable feedback received and will consider it in the context of the study on DLT MTF and Regulatory data. ESMA also consider that, in the context of the reporting exemption, DLT MTFs should make available the same data to regulators in the same format and in accordance with the ISO 20022 methodology. As a consequence, competent authorities will be able to extract or download that report directly from the DLT MTF system with limited effort. Such scenario will be explored in the study on DLT MTF and regulatory data (see Section 6.1).

6.5 Governance

6.5.1 Background

315.   ESMA observed that for a regulator to become the regulatory observer in the DLT, it is important to set up a clear governance model together with all the relevant technical specifications and functions of the systems.

316.   With Q58, ESMA invited respondents to provide their views on certain specific governance aspects.

6.5.2 Feedback to the call for evidence (Q58)

317.   According to most respondents, there is no preferred way to admit regulators to the DLT as regulatory observer participant and such admission will depend on the technology used. One respondent advocated for the use of free and open standards that would facilitate the implementation of such role. Another respondent referred to the use of "embedded governance" in tokenized markets as the one analyzed by BIS scholar Raphael Auer in its BIS Working Paper No 811 of September 2019.[32]

318.   As general view, regulators should only obtain reading rights and not be able to modify the ledger. The latter can be accessed by implementing specific rules for the access. One respondent mentioned that in a system with a proof of stake consensus model, the regulator cannot have a "stake" in the DLT due to current regulations.

319.   Few respondents mentioned that, due to the high complexity of the extraction process, specialized market data providers should be used by Regulators to extract data within the different DLTs.

6.5.3 Conclusions and way forward

320.   ESMA takes note of the valuable feedback received and will consider it in the context of the study on DLT MTF and Regulatory data.

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[32] Embedded supervision: how to build regulation into decentralised finance (bis.org)

6.6 System interoperability

6.6.1 Background

321.   ESMA observed that having more than one DLT MTF or TSS would entail the set-up of different technical specifications and functions for each technology used in relation to the regulatory observer participant role.

322.   Also, according to the definition of DLT financial instruments, the same DLT financial instrument can be issued on a DLT and then transferred and stored into another DLT. The latter scenario would be possible where interoperability between the two DLTs is ensured, e.g., the two DLT MTFs and/or DLT TSS utilize the same type of DLT.

323.   With Q59 and Q60 ESMA sought feedback on how interoperability may be ensured considering the difficulties of accessing the details of the transactions due to the different technical specifications of each system and the definition of DLT financial instruments.

6.6.2 Feedback to the call for evidence (Q59 - 60)

324.   Most of the respondents claimed that work on interoperability among different DLTs is still at early stages and it is not a priority. Cross-DLT interoperability protocols may not be sufficiently mature and might bring operational risks and security concerns. The same risks may occur when talking about interoperability with other legacy infrastructures.

325.   Some respondents provided different solutions that may ensure or promote interoperability among DLT MTFs, SS and TSS and the way regulators can be admitted as regulatory observer participants on the DLT. Among them:

   a) The use of CBDC would facilitate the functioning of DLT SS with traditional SSS and CSD.

   b) The use of DTI would help determine which DLT financial instrument is trading or settling on which chain also when a fork occurs. Such identifier can be used to aggregate market data from each chain and across all chains. Finally, the DTI may also permit regulators to identify whether market abuse was occurring on some chains more than others.

   c) The observer node should be established without voting rights (read-only permission).

   d) Regulators should build in-house software with modules or agents to read data from various DLT. Otherwise, they can rely on third-parties software that are already compatible with multiple DLTs.

e) API and API integrations would help granting regulators access to the DLT data. Guidelines and equivalent documents can help achieving certain level of interoperability.

f) The use of free and open messaging and standards simplifies implementation, reduces costs and risk, and lowers barriers to entry for new businesses. ISO 20022 and FIX protocol should be maintained in the DLT environment.

g) Since work towards compatibility cannot be trusted yet, data transfer among different DLT should follow the normal input process, i.e., take the data from one DLT, make it goes through the validation process on another DLT before it can be inserted into a new block. Checks should be in place to determine whether the process of copying the data is legitimate and trustworthy.

h) Interoperability between different DLT platforms can be achieved through smart contracts for the on-chain transfer of financial data and automated workflows or via application programming interfaces (APIs).

i) Basic standards about interoperability should be created.

j) The usage of free and open data standards may simplify implementation, reduce costs and risk, and lower barriers to entry for new business models or new entrants.

326. According to one respondent, without interoperability between DLT MTFs and DLT TSSs with DLT SSs, an issuer trading its DLT financial instrument on a DLT MTF may not freely choose the DLT SS in which it wishes to record and settle securities, and vice-versa. This scenario will hamper competition and reversing the open-access improvements brought by CSDR.

327. Interoperability between DLT MIs and traditional MIs is also crucial. DLT financial instruments recorded in a DLT TSS and a DLT SS should be interoperable with SSSs/CSDs authorised under CSDR. If not, the CSD authorised under CSDR chosen by the DLT MI will not be able to implement its in transition strategy.

328. Another respondent pointed out that Interoperability standards already exist. Such standards allow for cross-chain settlements and that it would be helpful for ESMA to work with industry participants to agree on a specific standard for the pilot.

329. While most respondents agree on the importance of interoperability few of them argued that interoperability should not be a target in the first phase of the PILOT. Such approach would leave room for experimentation and avoid diminishing investors' ability to transact in illiquid assets like the one that are in scope of the DLT PILOT. According to oth ber respondents, interoperability is an issue that should be addressed by the market only and the discussion between regulators and financial entities may help in that sense.

6.6.3 Conclusions and way forward

330.　　　ESMA agrees that interoperability among different technologies should be tackled by the market in the first phase of the PILOT and that regulators should discuss with the industry to promote and help achieve such concept. ESMA will consider the valuable feedback received and the proposed solutions in the context of the study on DLT MTF and Regulatory data.

7 Annex I – Summary of the feedback received during the workshop

1. Introduction

After having reviewed the feedback received, ESMA organised a workshop with the respondents to the call for evidence. The main purpose of the workshop was to discuss specific questions identified by ESMA in the feedback to the CFE.

2. Use of DLT for trading and settlement

Participants did not identify issues related to the operations of hybrid models for trading and settlement, neither as regards simultaneous trading on and off DLT, nor as regards transferring trading in specific instruments to and from traditional venues. One respondent noticed that regulators should not limit hybrid models, unless there are compelling policy reasons for doing so (e.g., fraud prevention, AML, etc.).

3. Common aspects related to transparency and reporting

Phases of DLT transaction and definition of execution

ESMA asked participants to illustrate the phases and the length of a DLT transaction and to clarify whether the "execution" phase would consist in the successful inclusion of the transaction record in the DLT.

Participants pointed that the phases of a DLT transaction, including the phase of "execution", depend to a large extent on the technology used. In the interest of technological neutrality, participants suggested to not provide a definition of the different phases, and to maintain the concept of "execution" as it is currently defined in RTS 22.

On the length of each phase, it emerged that the average time for a block to be added to the chain is about 10-12 minutes.

Settlement currency

On settlement currency, ESMA presented different solutions for *off-chain* and *on-chain* conversion of the DLT security settled in money token into Euro and asked participants to the workshop to express their view on which solution could be the most reliable method.

From several participants it emerged that, from a technical point of view, the proposed solutions are equivalent and simple to implement, thus it is important that regulators opt for the method that allows them to record all the information relevant for transparency purposes.

4. Regulatory access to DLT and data collection

ESMA asked participants how on-chain and off-chain transaction data could be linked and whether there is a solution to standardize this process across different DLTs. Participants commented that off-chain data and on-chain data are simply two databases linked via an ID (key). There might not be a way to standardize the exact technical process to produce that ID

since each DLT system may be designed with a different objective producing different types of IDs in different formats. Due to the latter, it cannot be imposed a specific format to generate *the IDs*.

Another question was on how transactions are validated when details of them are stored outside the ledger and whether it is possible to deploy a model where all regulatory information is stored on chain. Participants highlighted the risk of having all regulatory information *on-chain* because of privacy concerns (Compliance with GDPR and professional secrecy). Regarding the validation of transactions, a financial service provider mentioned that this will depend on the underlying technology and the specific implementation, and that this aspect is not legally relevant for ESMA.

Finally, ESMA asked what the various options are to make RTS 22 transaction data available to regulators through standard files or standard API format. Participants commented that using an API has the potential to introduce cybersecurity risks and denature the scope of the DLT itself. An alternative would be to use observer participant nodes to get the validated data directly from the DLT without any change. Should there is a need for APIs, for instance due to compatibility needs with legacy systems, the API should be after that observer node.

5. Interoperability

Instrument identification and classification

With regards to interoperability between different blockchains as well as between traditional and DLT infrastructures, some respondents highlighted that combining DTI and ISIN would be beneficial. The DTI would allow the identification of the token, in addition to the identification of the asset made available by ISIN. In this way, it permits the tracking of the history of transactions in different ledgers by providing a mapping between ISINs and the list of tokens.

Trading and settlement

ESMA asks whether ESMA can play a role in promoting interoperability among different DLTs.

Most participants agreed that ESMA participation is desirable to promote standardization and therefore to build trust in the market. However, ESMA should take into account the fact that settlement finality would change due to different DLT infrastructures operating in different ways. Also, the chain of intermediaries should be considered since it is tightly connected to the systems of CSDs. According to a participant, there will not be a chain of intermediaries considering the simultaneous settlement functionality.

6. RTS 22: transaction reporting

ESMA asked about the methods to ensure correction of previously submitted information. A technology service provider argued that, in a DLT platform, all records are constantly updated to the latest state of the trade. Information about the status of the transaction (e.g. *cancelled*, *amended*) could also be introduced into the DLT.

ESMA also asked whether there are possible limitations that a DLT platform would have in executing and report a short-sale transaction. A trade association argued that there are

no limitations regarding the possibility of short-selling. Three short-selling methods are possible: 1) allow DLTs to have transaction types of "sell"; 2) run a separate DLT, only for lending assets, as long as they are owned in the primary DLT; 3) create a NFT expressing asset and leverage on that.

7. Transparency requirements

Instruments and transactions

The call-for-evidence showed that there are no key differences between DLT and standard instruments, however ESMA intended to gather further feedbacks from participants on the issuance of the DLT securities. Some stakeholders highlighted that the issuance of this type of security should be regarded in the traditional way as the issuer is identified by national law. In this context, stakeholders stressed that there is no harmonization across the EU yet as many jurisdictions do not recognize DLT securities yet, while some others have already included DLT securities and tokens under their national law.

Pre-trade transparency requirements and waivers

As in the call-for-evidence, ESMA sought to understand from participants whether the existing pre- and post-trade transparency regime applies to DLT securities and whether it should be amended or tailored to include them.

The majority of participants considered that DLT financial instruments should fall under the same transparency regime as all other financial instruments, therefore they did not see the need to change the existing requirements. Participants emphasized that a review of RTS 1 and 2 should not be launched before the implementation of the DLT Pilot Regime.