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| 2 June 2016 | ESMA/2016/773 RF |

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| Reply form for the Discussion Paper on the Distributed Ledger Technology Applied to Securities Markets  |
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| Date: 2 June 2016ESMA/2016/773 RF |

Responding to this paper

The European Securities and Markets Authority (ESMA) invites responses to the specific questions listed in the ESMA Discussion Paper on the Distributed Ledger Technology (DLT) Applied to Securities Markets, published on the ESMA website.

*Instructions*

Please note that, in order to facilitate the analysis of the large number of responses expected, you are requested to use this file to send your response to ESMA so as to allow us to process it properly. Therefore, ESMA will only be able to consider responses which follow the instructions described below:

* use this form and send your responses in Word format (pdf documents will not be considered except for annexes);
* do not remove the tags of type <ESMA\_ QUESTION\_DLT\_1> - i.e. the response to one question has to be framed by the 2 tags corresponding to the question; and
* if you do not have a response to a question, do not delete it and leave the text “TYPE YOUR TEXT HERE” between the tags.

Responses are most helpful:

* if they respond to the question stated;
* contain a clear rationale, including on any related costs and benefits; and
* describe any alternatives that ESMA should consider

**Naming protocol**

In order to facilitate the handling of stakeholders responses please save your document using the following format:

ESMA\_DLT\_NAMEOFCOMPANY\_NAMEOFDOCUMENT.

E.g. if the respondent were XXXX, the name of the reply form would be:

ESMA\_DLT\_XXXX\_REPLYFORM or

ESMA\_DLT\_XXXX\_ANNEX1

***Deadline***

Responses must reach us by **2 September 2016.**

All contributions should be submitted online at [www.esma.europa.eu](http://www.esma.europa.eu) under the heading ‘Your input/Consultations’.

***Publication of responses***

All contributions received will be published following the end of the consultation period, unless otherwise requested. **Please clearly indicate by ticking the appropriate checkbox in the website submission form if you do not wish your contribution to be publicly disclosed. A standard confidentiality statement in an email message will not be treated as a request for non-disclosure.** Note also that a confidential response may be requested from us in accordance with ESMA’s rules on access to documents. We may consult you if we receive such a request. Any decision we make is reviewable by ESMA’s Board of Appeal and the European Ombudsman.

***Data protection***

Information on data protection can be found at [www.esma.europa.eu](http://www.esma.europa.eu) under the headings ‘Legal notice’ and ‘Data protection’.

# Introduction

Please make your introductory comments below, if any:

<ESMA\_COMMENT\_DLT\_1>

The Post Trade Distributed Ledger Group (“PTDL Group”) is a group of nearly 40 financial institutions and prominent market infrastructure providers from all regions of the globe whose shared vision of the potential of distributed ledger technology (“DLT”) has brought them together.

The PTDL Group provides a trusted environment that seeks to foster collaboration between post-trade participants and regulatory authorities to facilitate the development and adoption of DLT for post-trade services.

As part of this, the PTDL Group connects practitioners, regulators and central banks to identify and drive forward activities and recommendations to leverage DLT for the benefit of the post-trade industry.

<ESMA\_COMMENT\_DLT\_1>

##### Do you agree with the list of possible benefits of the DLT for securities markets? Please explain, e.g., are these benefits unique to the DLT, are some more important than others, are some irrelevant?

<ESMA\_QUESTION\_DLT\_1>

Yes, we broadly do agree with the list of possible benefits. However, we also recognise that some of these benefits are not unique to DLT and could be achievable via other technology, if the market actors and infrastructures are ready to accommodate them. It is also evident that not all products or services could benefit from DLT; hence adoption may be fragmented and in some cases result in dual infrastructures, at least initially. This may increase complexity and have cost implications.

Full realisation of the benefits of DLT will depend on a number of factors, including DLT technological developments, t harmonisation of key legal and regulatory requirements across jurisdictions, data standardisation, and the commercial viability of the technology and new business models. This could lead to changes in the securities value chain, including more direct involvement of recognised payments systems, securities settlement systems and central counterparties, (collectively, “FMI”) who are currently on the periphery. Benefits to different types of market participants may be uneven in the financial services community.

Due to the holistic nature of a DLT record keeping system, the transition of some post-trade operations to a DLT system may prove initially challenging. Initial DLT solutions are likely to develop for services relating to services or products which have not so far benefitted from advanced post-trade operational functionality, such as certain types of post-trade processes relating to OTC contracts and bank internalised structured products or trading in private markets. It is unlikely that there will be a large scale transition of existing FMI processes to DLT systems in the short to medium term.

<ESMA\_QUESTION\_DLT\_1>

##### Do you see any other potential benefits of the DLT for securities markets? If yes, please explain.

<ESMA\_QUESTION\_DLT\_2>

DLT development is currently in a nascent state and has not yet reached a maturity where it is possible to predict future outcomes. Each operational problem being investigated, via various use cases, could require different types of DLT solutions or indeed could prove to be operationally or commercially unviable. However, as we note above discrete processes for products that do not currently benefit from fully automated processes, such as matching and reconciliation of certain OTC contracts and processing of components of bank internalised structured product contracts and the relatively uncomplex (from an operational and regulatory point of view) operation of private placement record keeping may first benefit from DLT. In addition, we believe that basic transaction reconciliation processes, KYC processes and record keeping could also benefit from early adoption of the technology. DLT systems, appropriately regulated, could serve as trusted source of information for the wider financial community.

<ESMA\_QUESTION\_DLT\_2>

##### How would the benefits of the technology be affected, in the case where the DLT is not applied across the entire lifecycle of securities (i.e., issuance, trading, clearing and settlement, safekeeping of assets and record of ownership) but rather to some activities only?

<ESMA\_QUESTION\_DLT\_3>

We believe that for meaningful benefits to be realised the markets need to ensure that DLT systems and data protocols must be interoperable, as fragmentation of post-trade systems could materially increasing complexity and limit the usefulness of DLT in financial markets. Unless the markets work in unison to deliver integrated and optimised STP solutions, DLT systems could add rather than reduce costs.

In the short term, unless DLT systems can fully replicate the movement of stock and cash and operators can comply with all the necessary regulatory requirements, the existing CSD systems seem to be irreplaceable in part or in whole. DLT solutions which develop for settlement will have to be tested, which could lead to increased technology costs when run in parallel to existing systems.

Whilst the concept of “right first time” is laudable, it is probably unrealistic, at least in initial deployment of DLT solutions. The immutability of contracts in current block chain solutions will need to be confirmed in the wider financial service DLT environment. Smart contracts and the operation of DLT systems must be designed to ensure that errors in the process, contract or inputs, can be efficiently remedied and prevent contagion and unexpected outcomes within the environment.

Extraterritoriality must be considered as DLT solutions are likely to have to comply with multijurisdictional requirements if they are to achieve the full economies of scale possible.

<ESMA\_QUESTION\_DLT\_3>

##### Which activities (e.g., post-trading, other activities), market segments and types of assets in the securities markets are likely to be impacted the most by the DLT in your opinion? How is the DLT likely to modify the way securities markets operate? Please explain.

<ESMA\_QUESTION\_DLT\_4>

Aspects of clearing and settlement operations are the market activities most likely to be affected. However, adoption of more efficient clearing and settlement processes may depend on liquidity practices to support such efficiency. Liquidity is a key component in the post trade environment without which trading, clearing and settlement cannot operate efficiently resulting in additional costs and complexity. For sake of clarity, liquidity risk in the post trade environment refers to “the risk that a counterparty will not settle an obligation for full value when due, but at some unspecified date thereafter” (BIS, 1993). The creation of greater automation, certainty and “new value” streams within the DLT environment will be fundamental to achieving value add benefits. In this context it would appear unlikely at this stage that real-time gross settlement for all financial instruments is either desirable or possible. It is therefore likely that existing clearing and settlement solutions would still be required for certain financial instruments. For example, there may be liquidity during and between market hours to support continuous real-time settlement for a cash security, but liquidity and complex clearing requirements may be different for a derivative or longer term structured product. DLT capabilities and market practises will likely evolve before financial market infrastructures would be able to clear and settle the majority of contracts on a DLT.

<ESMA\_QUESTION\_DLT\_4>

##### According to which timeframe, is the DLT likely to be applied to securities markets in your view? Please distinguish by type of activities, market segments and assets if relevant.

<ESMA\_QUESTION\_DLT\_5>

It is difficult to project with any certainty at this point. However, the deployment of simple use cases (e.g. outside of highly complex and regulated activities) is likely to commence within 12 months with more complex use cases within a 5 – 10 year horizon. This assumes that the current exploration of products and solutions proves concepts and achieves benefits. Broadly this can be broken down as: i) the development and proof of concept phase (3+ years), ii) the scaling and initial deployment phase (5+ years), and iii) the full market adoption of DLT solutions occurring sometime after this.

<ESMA\_QUESTION\_DLT\_5>

##### How might your organisation benefit from the introduction of the DLT?

<ESMA\_QUESTION\_DLT\_6>

The PTDL group is a trade body seeking to coordinate recommendations, assess regulatory impacts and to propose recommendations to advance the development of DLT use for post-trade services. The PTDL Group is not seeking to develop DLT commercial solutions.

<ESMA\_QUESTION\_DLT\_6>

##### If you are working on a concrete application of the DLT to securities markets please describe it (i.e., which activities, which market segments, which type of assets and for which expected benefits) and explain where you stand in terms of practical achievements in relation to your objectives.

<ESMA\_QUESTION\_DLT\_7>

See answer to Q6 above.

<ESMA\_QUESTION\_DLT\_7>

##### Do you agree with the analysis of the potential challenges? Please explain, e.g., are some more important than others, are some irrelevant in your view.

<ESMA\_QUESTION\_DLT\_8>

Yes we do concur, especially regarding the need for DLT to meet the processing volumes and speed provided by current technology, a benchmark which appears challenging to some DLT solutions. DLT systems would also need to accommodate market practices such as facilitation trades (eg short selling, borrowing and adjustments) and allow settlement to occur efficiently. Adoption by central infrastructures could be challenging, requiring a complex transition between existing and new technology, and the scale of transition requirements could outweigh the perceived benefits. Challenges relating to the recording of “dematerialised” securities and access to fiat cash settlement solutions appear complex to achieve could also limit DLT adoption. Trying to replicate these activities through a form of “tokenisation” may also present both regulatory and reconciliation challenges.

<ESMA\_QUESTION\_DLT\_8>

##### Do you see any other potential challenges? If yes, please explain.

<ESMA\_QUESTION\_DLT\_9>

Business resilience, data protection and cybersecurity need to be addressed, as does the market practice of manual intermediation, for instance relating to the sale of securities relating to small and medium sized enterprises (SMEs), i.e. 'hi-touch' environments. It is uncertain how such market practices would transition to “lo-touch”, DLT automated environments of the future. Overarching this will be the impact on the end investors and the real economy and how they benefit from developments of DLT.

The legal transfer of ownership (within security interest vs title transfer; pledged vs re-hypothecated and segregated vs omnibus constructs globally) are significant considerations that will likely require legal and regulatory clarification. The treatment of tokenised assets would need to be addressed against dematerialisation regulations and fiat vs tokenised currency both in the context of finality. Finally the potential for systemic risk transmission needs to be considered. These issues may not impede development of DLT indefinitely but will necessitate a solution to be formulated.

<ESMA\_QUESTION\_DLT\_9>

##### Which solutions do you envisage for these challenges and where do the current initiatives stand in terms of practical achievements to overcome them?

<ESMA\_QUESTION\_DLT\_10>

There are some positive statements from entities developing DLT that proof of concept tests are delivering workable solutions related to performing discrete activities and product sets. However, at this stage there is limited practical evidence that a there is a meaningful and mature DLT industrialised solutions. Beginning a dialogue between international market participants and regulatory bodies and standard setters is a pre-requisite to coordinate efforts, drive common protocols and standards and develop appropriate oversight solutions. We note the efforts this year of the IOSCO-AMCC and the Financial Stability Board to monitor DLT developments and begin to consider policy and industry recommendations.

<ESMA\_QUESTION\_DLT\_10>

##### Do you agree with the analysis of the key risks? Please explain, e.g., are some risks more important than others, are some irrelevant in your view.

<ESMA\_QUESTION\_DLT\_11>

Yes, we believe that the risks you identify are relevant and that the solutions within a DLT environment need to be proven in the wider financial services context. Existing risks (market, credit, operational, liquidity and legal, to name but a few) would still be relevant within a DLT environment and would need to be considered as part of the development and proof of concept to ensure that DLT operation does do not impact these to extent that impacts impair DLT benefits. If functions of securities markets migrate into a DLT environment, then cyber risk will become more relevant due to the size and nature of the information held within DLT. Given the nature of financial services business and the necessity to comply with know-your-customer and anti-money laundering rules, DLT systems will need to prove that the technology cannot be circumvented to conceal identity.

The question raised on fair competition and orderly markets is pertinent, especially given the fact that current CSD services are largely fixed-cost. In theory, interoperability between ledgers should be possible if standardised DLT technology is developed. However, we concur that if this were not the case and a single DLT evolves then competition considerations could arise (see answer to Q2). We also question the extent to which market manipulation may occur in a DLT system. Given that ledgers used for post-trade operational purposes are highly likely to be permissioned systems, actors would not have sight of other actors’ positions if the DLT system is secure.

<ESMA\_QUESTION\_DLT\_11>

##### Do you see any other potential risks? Please explain.

<ESMA\_QUESTION\_DLT\_12>

ESMA confirms in the DP that a service that provides a regulated activity must be subject to relevant regulatory authorisation required to provide such function and comply with relevant requirements to ensure effective investor protection and ensure a level playing field across FMI providers. But we note that new technologies may intersect with current and future DLT solutions, creating new risks. Regulators will need to continue to monitor and assess the development of innovative technology designed for use in financial markets.

<ESMA\_QUESTION\_DLT\_12>

##### How could these risks be addressed? Please explain by providing concrete examples, especially for the risks potentially affecting your organisation.

<ESMA\_QUESTION\_DLT\_13>

See response to Q12

<ESMA\_QUESTION\_DLT\_13>

##### Do you think that the DLT will be used for one of the scenarios above? If yes, which one(s)? If no, please explain?

<ESMA\_QUESTION\_DLT\_14>

Processes related to some products listed in scenario 3 could also benefit from the application of DLT. However, the DLT solution must offer benefits which can be realised and provide a significant advancement from today’s solutions. Scalability and the ability of networks to interact with other systems still need to be addressed before such scenarios can become mainstream and robust.

<ESMA\_QUESTION\_DLT\_14>

##### If the DLT is used for one of these scenarios, how compliance with the regulatory requirements attached to each scenario could be ensured?

<ESMA\_QUESTION\_DLT\_15>

Regulators would need to assess the solutions being offered to the market and ensure they comply with relevant regulations and subject to appropriate oversight. See also the response to Q12. It will be key that solutions coming to market are offered in a standardised form which are capable of interacting across domains as this will allow the full value chain to benefit from the efficiencies created. It is possible that solutions drive process efficiencies within the value chain which may not, at least initially, be cost reducing.

<ESMA\_QUESTION\_DLT\_15>

##### Do you think that the DLT will be used for one of the scenarios above? If yes, which one(s)? If no, please explain?

<ESMA\_QUESTION\_DLT\_16>

These services are being assessed for applicability of DLT technology. As far as the PTDL Group is aware, there has not been a detailed proposal for a solution at which could be used. Subsequently an assessment of service offering in relation to relevant regulations remains unclear. It is clear that if products are migrated into a DLT system which replicates existing FMI functionality, the DLT system provider must be authorised and the system must comply with relevant rules such as those relating to settlement finality, dematerialisation etc.. Post-trade regulatory requirements may impede the full benefits of using DLT solutions, but this is not a pretext to roll back regulation and oversight of post-trade financial market infrastructure.

<ESMA\_QUESTION\_DLT\_16>

##### If the DLT is used for one of these scenarios, how could compliance with the regulatory requirements attached to each scenario be ensured?

<ESMA\_QUESTION\_DLT\_17>

See response to Q15

<ESMA\_QUESTION\_DLT\_17>

##### Do you think that the DLT will be used for safekeeping and record-keeping purposes? Please explain, with concrete examples where appropriate.

<ESMA\_QUESTION\_DLT\_18>

Yes, this is certainly potentially possible within the lifecycle of a product. However, it is too early to be concrete on this subject.

<ESMA\_QUESTION\_DLT\_18>

##### If the DLT is used for the safekeeping and record-keeping of ownership, how could compliance with the regulatory requirements be ensured?

<ESMA\_QUESTION\_DLT\_19>

See response to Q15

<ESMA\_QUESTION\_DLT\_19>

##### Do you think that the DLT will be used for regulatory reporting purposes? Please explain, with concrete examples where appropriate.

<ESMA\_QUESTION\_DLT\_20>

It is too early to say if DLT solution as it is not yet clear what product types are best suited to DLT post-trade system solutions. The question implies DLT could become a defacto “super” type utility with full data sets on all products and activities. Whilst this is not impossible longer term, as we outline in earlier responses we believe that it is unlikely in the short term. If regulatory reporting services are possible on a DLT, this could offer significant benefits. Regulators would also be required to enhance current technological capabilities to enable them to access and manage data stored on a DLT.

<ESMA\_QUESTION\_DLT\_20>

##### If the DLT is used for regulatory reporting purposes, how could compliance with the applicable regulatory requirements be ensured?

<ESMA\_QUESTION\_DLT\_21>

If such a service was envisaged see response to Q15

<ESMA\_QUESTION\_DLT\_21>

##### Do you think that the DLT could be used for other securities-related services than those already discussed, in particular trading and issuance?

<ESMA\_QUESTION\_DLT\_22>

The current focus appears to be primarily in the post trade landscape and for certain operational processes relating to products that are currently not benefiting from automated processes. DLT could provide trading solutions for assets outside financial services regulatory perimeter or to trade assets which have no or minimal public transparency requirements, for example private placements or even for some crowd funding where investments do not require active secondary market trading.

<ESMA\_QUESTION\_DLT\_22>

##### Do you see potential regulatory impediments to the deployment of the DLT in securities markets?

<ESMA\_QUESTION\_DLT\_23>

DLT solutions appear capable of fitting within the existing regulatory framework but, as we mention earlier in our response, certain financial regulations may require review and adaptions to for DLT to realise its full potential for financial markets.

<ESMA\_QUESTION\_DLT\_23>

##### Should regulators react to the deployment of the DLT in securities markets and if yes how? If you think they should not do so please justify your answer.

<ESMA\_QUESTION\_DLT\_24>

We believe that regulators should continue to monitor the development of DLT services and ensure they will operate in compliance with legal and regulatory requirements. Also we believe that there should be global coordination among standard setters, such as G20, IOSCO etc. to facilitate harmonisation of any key requirements and standards between jurisdictions to ensure that regulatory arbitrage is minimised.

<ESMA\_QUESTION\_DLT\_24>