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|  2 June 2016 | ESMA/2016/773 RF |
| 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 London Metal Exchange (“LME”) and its clearing house, LME Clear (“LMEC”) welcome the opportunity to respond to the Discussion Paper published by ESMA on the Distributed Ledger Technology Applied to Securities Markets.

In order to appropriately focus our response, we have provided comments to those questions which we consider are of most relevance to the LME and LMEC and on which we can provide an informed response.

The LME and LMEC fullly support innovation in the technology and financial technology sectors whilst recognising the very real challenges facing regulators when considering the appropriate form and approach for the regulation of this developing area.

We believe robust and clear regulation is critical for safe and effective markets. We also believe that regulatory steps must be taken with due care and consideration to ensure that the interaction between the regulatory and technological sectors has the opportunity to flourish and develop in the most constructive manner possible.

The potential vulnerabilities of the Distributed Ledger Technology (“DLT“) have been widely reported and it is right that these are acknowledged and managed within a carefully structured regulatory framework. It is only in this way that the financial services sector can harness the full benefit of the incoming technological changes and appropiate supervisory and regulatory frameworks can be maintained.

For the financial services industry and regulators alike, the current pace of change in these sectors should be applauded, supported and carefully observed. There remains uncertainty as to the direction of the evolution and extent of the development of the FinTech industry more broadly. As such, all initiatives aimed at supervising or managing this industry must be crafted in collaboration with those developing, innovating and utilising the new technologies.

<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 agree that this highlights some of the potential applications of the DLT for securities markets. However we note that with such nascent application of the technology in this area, it is not yet possible to contemplate the full set of benefits that are workable and practicable in this area.

The list appears to mainly focus on efficiencies of current processes and how the existing framework will look fundamentally the same once DLT has become commonplace. It is entirely plausible that DLT could change the landscape of securities markets in a manner that is not yet possible to anticipate. It is important that ESMA remains aware of this fact and remains prepared to regulate in a manner that can permit this evolution rather than stifle it.

<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>

TYPE YOUR TEXT HERE

<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>

The maximum possible benefit of the DLT is likley to be seen where it can be used as seamlessly and broadly as possible. However, this is subject to the potential areas of vulnerabilities being identified and mitigated. The balance of benefit that could be introduced through the use of seamless DLT must be counterbalanced with the inherent risks involved in the broad application of the DLT. Such risks include the risk of “hacking“, limited user functionality and opacity of the system as a whole.

<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>

The primary use for the DLT appears, currently, to be in improving efficiencies on the post-trade side (for example reporting). However, it is clear that there remains signifcant potential for it to be applied in relation to the active trade and settlement of off-exchange traded securities. For on-exchange traded securities the use of DLT is likley to present challenges associated with price discovery and execution as a result of the latency involved in gaining consensus 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>

We believe that the next 2 to 3 years will witness significant changes in the introduction and application of the DLT within the securities markets. We do not have a view as to how the timeframes will differ depending on market segment and instrument type.

<ESMA\_QUESTION\_DLT\_5>

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

<ESMA\_QUESTION\_DLT\_6>

We believe that the LME and LMEC will benefit from the DLT in a manner consistent with that seen across the broader markets. That is: increased security; increased efficiencies and potentially reduced costs. In terms of wider impact across the trade cycle, we believe that the most material impact will be felt in the pre-trade and settlement phases with the matching/execution and clearing phases being affected to a lesser degree (although we note that for spot trades, as opposed to forwards or futures, the impact on clearing is also likley to be material).

<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>

The LME is considering whether the DLT could be used as part of the settlement system that the LME currently employs in relation to its physically settled contracts. Whilst no concrete steps have yet been taken, we believe that this represents the initial opportunity for this type of technology to introduce novel efficiencies into the LME market.

<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>

We agree with the challenges that have been identified. In particular we also believe that the interaction with existing data protection laws is likley to present the most complex challenges.

<ESMA\_QUESTION\_DLT\_8>

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

<ESMA\_QUESTION\_DLT\_9>

With such nascent technology the full scale of risk and application cannot be fully ascertained. However we believe some of the folowing could represent the material risks or limitations of the techology.

* The security of an entire blockchain is depent on its weakest link. This is to say that where the DLT is used across a broad spectrum or an entire value chain, then it could all be jeopardised by the vulnerability present in only a small part of the chain.
* The cost remains unclear. Whilst there is strong expectation that efficiencies may lead to eventual reduced expenditure, given the security implications and potential changes required (certainly in the short term) the costs could prove prohibitively onerous to the full development and exploitation of the technology’s potential.
* Whilst one of the key benefits of the DLT is the irreversibility of transactions (and therefore limits on the fraudulent representation of transactions) this also presents the question of how errors could be rectified. All technology involved in the securities markets must currently have capacity for identifying and rectifying errors caused by technology or human error. This must also be present in the DLT in order to avoid simple errors creating irreversible and undesirable positions.
* We also believe that one challenge which could stifle innovation in this sector lies with the required collaboration between industry, regulators and government. It is critical that an appropriate legal and supervisory framework can be agreed, on a cross-border basis, in order to permit the development of this technology internationally. It must further allow for it to operate and be operated within sensible limits that balance the need for security of both users and infrastructure with the flexibility to change and grow.

<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>

Some of the solutions will become clear as the technology develops and it may be the case that some of the feared risks do not develop. In order to manage the risks it is important that clear communication and education is maintained and sensible solutions are reached with as widespread agreement as possible.

<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 agree with the anlaysis of the key risks.

<ESMA\_QUESTION\_DLT\_11>

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

<ESMA\_QUESTION\_DLT\_12>

With such nascent technology the full scale of risk and application cannot be fully ascertained. However we believe some of the following could represent material risks or limitations of the techology.

* The security of an entire blockchain is dependant on its weakest link. This is to say that where the DLT is used across a broad spectrum or an entire value chain, then it could all be jeopardised by the vulnerability present in only a small part of the chain.
* The cost remains unclear. Whilst there is strong expectation that efficientces may lead to reduced expenditure, given the security implications and potential changes required (certainlty in the short term) the costs could prove prohibitively onerous to the full development and exploitation of the technology’s benefit.
* Whilst one of the key benefits of the DLT is the irreversibility of transactions (and therefore limits on the fraudulent representation of transactions) this also potentially presents a major risk with the question of how errors would be rectified? All technology involved in the securities markets currently must have the capacity to identify and rectify errors caused by technology or human error. This must also be present in the DLT in order to avoid simple errors creating irreversible and undesirable positions.
* We also believe that one challenge which could stifle innovation in this sector lies with the required collaboration between industry, regulators and government. It is critical that an appropriate legal and supervisory framework can be agreed, on a cross-border basis, in order to permit the development of this technology internationally. It must further allow for it to operate and be operated within sensible limits that balance the need for security of both users and infrastructure with the flexibility to change and grow.

<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>

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<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>

Yes we believe that the DLT could be used for any one (or all) of the three scenarios described. It is our view that the one of the areas where DLT lends itself for use as part of the clearing process is in relation to the transfer of cash and securtiies to (i) meet margin obligations and (ii) carry out final settlement of contracts.

<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> We believe that the approach to ensuring continued compliance should involve a collaboration between policy makers and those involved in the development of the technology itself. The underlying policy objectives of the existing regulatory requirements should be identified early in the process. It is these objectives that the DLT should strive to meet rather than the existing law as written. In order to ensure that this can be achieved it will be necessary for legislators and regulators to engage with the technology sector and those developing the DLT for use in financial markets to create a framework with which the technology can comply appropriately.

<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>

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<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>

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<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>

There is material scope for the DLT to be used in this capacity. We believe that this could be a very beneficial application due to the inherent security of the technology particularly compared with that used today. However, the risk to its use in this area lies with the ability of the regulatory and legislative framework to be sufficiently flexible so as to evolve and maintain the level of security offered to users whilst permitting the appropriate scale and direction of growth. As ESMA has highlighted in its paper there are a number of existing requirements which have been developed in order to provide safeguards for current arrangements which may have the potential to stifle or frustrate the use of novel technology.

<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>

We believe that the approach to ensuring continued compliance should involve a collaboration between policy makers and those involved in the development of the technology itself. The underlying policy objectives of the existing regulatory requirements should be identified early in the process. It is these objectives that the DLT should strive to meet rather than the existing law as written. In order to ensure that this can be achieved it will be necessary for legislators and regulators to engage with the technology sector and those developing the DLT for use in financial markets to create a framework with which the technology can comply appropriately.

<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>

There is material scope for the DLT to be used in this capacity and we believe that this could be a very beneficial application. This is due to the inherent security of the technology particularly compared with that used today. However, the risk to its use in this area lies with the ability of the regulatory and legislative framework to be sufficiently flexible so as to evolve and maintain the level of security offered to users whilst permitting the appropriate scale and direction of growth. As ESMA has highlighted in its paper there are a number of existing requirements which have been developed in order to provide safeguards for current arrangements with the potential to stifle or frustrate the use of novel technology.

<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>

We believe that the approach to ensuring continued compliance should involve a collaboration betwen policy makers and those involved in the development of the technology itself. The underlying policy objectives of the existing regulatory requirements should be identified early in the process. It is these objectives that the DLT shoulld strive to meet rather than the existing law as written. In order to ensure that this can be achieved it will be necessary for legislators and regulators to engage with those in the technology sector and those developing the DLT for use in financial markets to create a framework with which the framework can comply appropriately. <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>

We would certainly welcome any developments that could permit the DLT to be used in trading. For on-exchange traded securities the use of DLT is likley to present challenges associated with price discovery and execution as a result of the latency involved in gaining consensus on a DLT. However, given the level of security inherent in the DLT we believe that it could lead to positive change within the electronic trading sector. This must be approached with caution in light of the high risk that an irreversible system could introduce. In addition all safeguards currently inherent in market infrastructure designed to maintain orderly markets and minimise volatility must be capable of replication in any proposed new architecture.

<ESMA\_QUESTION\_DLT\_22>

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

<ESMA\_QUESTION\_DLT\_23>

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<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>

It is critical that regulators maintain awarenesss of developments in securities markets in order to ensure that their regulation remains relevant and workable. In this case regulators must also maintain vigilence to ensure that any new regulation in this area would not lead to a cessation or limitation of development and evolution.

The DLT also raises some fundamental legal questions relating to ownership of securities. In particular it will require a review, and potentially revision, of the understanding of how legal and beneficial ownership of property functions in this context. These principles are currently well embedded in current settlment systems but given the potential for change, the manner in which the law will continue to apply in the context of the DLT must be considered.

<ESMA\_QUESTION\_DLT\_24>