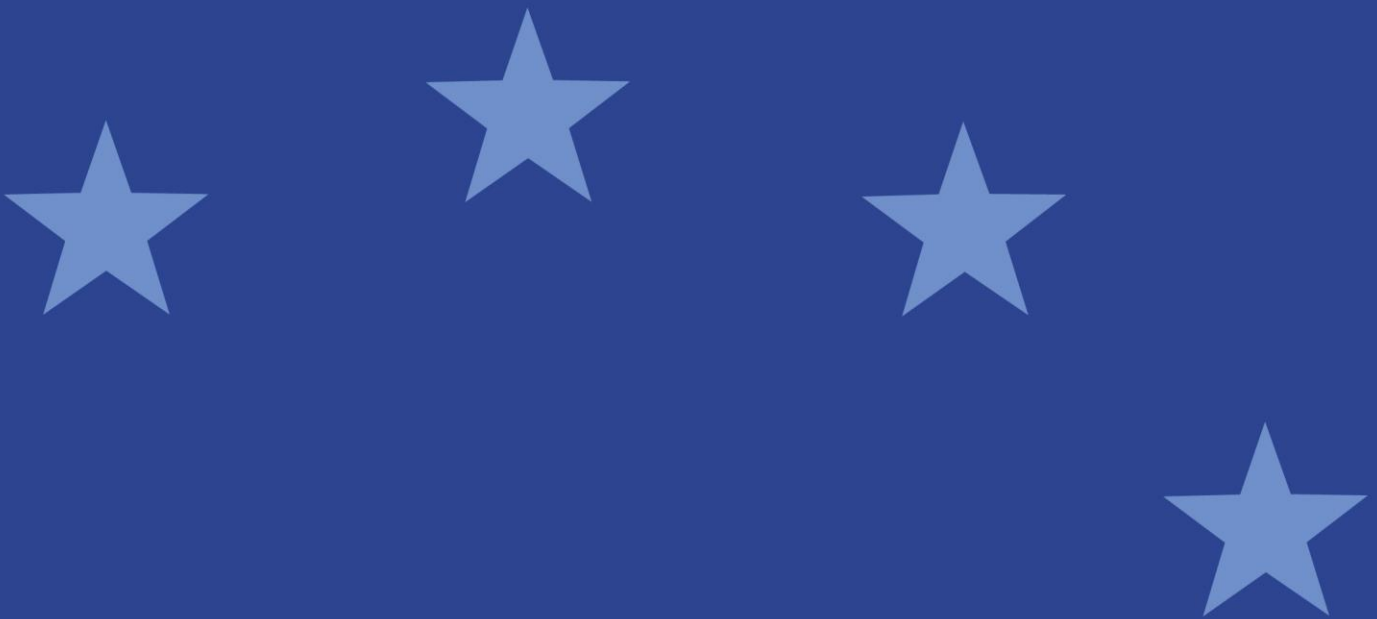




European Securities and  
Markets Authority

# Reply form for the Discussion Paper on the Distributed Ledger Technology Applied to Securities Markets



## 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>

Dear Sir/Madam:

CFA Institute appreciates the opportunity to respond to ESMA's Discussion Paper on Distributed Ledger Technology (DLT) Applied to Securities Markets (ESMA/2016/773).

CFA Institute is the global association of investment professionals that sets the standard for professional excellence and credentials. The organization is a champion for ethical behaviour in investment markets and a respected source of knowledge in the global financial community. CFA Institute has more than 136,000 members in 145 countries and territories, including more than 129,000 Chartered Financial Analyst® charter holders, and 147 member societies.

CFA Institute welcomes ESMA's work and analysis regarding DLT and supports the need to stay on top of developments in this field in order to ensure the correct regulatory response (if any). We have recently conducted a survey of our members on questions relating to fintech and appreciate the opportunity to share some of the results of that survey in this consultation.

CFA Institute believes the benefits claimed by proponents of DLT are plausible but yet to be realised in any commercial application and should not be used to create exceptions or weaken existing regulations. It is important to ensure regulations of securities markets address the principles of market fairness, market integrity, and investor protections, in a technology-agnostic way. ]

<ESMA\_COMMENT\_DLT\_1>



**Q1: 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>

[CFA Institute broadly agrees with the list of possible benefits of the DLT for securities markets. However, the benefits listed are not necessarily unique to the DLT, and this fact may inform as to the likelihood of these benefits being achieved. For example, the oft-cited benefit of the DLT of improving clearing and settlement is not obvious. The reason for this is that current technology already permits so-called T+0 clearing and settlement (see, for example [here](#)). The fact that T+0 is not used is not a technological question but one of regulatory and market convention issues. Although DLT clearly provides an alternative technical solution to faster settlement and clearing, it is not obvious how DLT would help solve such regulatory or market convention inertia.

We also agree with ESMA's broadly sceptical attitude to the potential for the DLT to reduce counterparty risk and thereby reduce the need for collateral management. The points raised by ESMA about derivatives transactions requiring counterparty risk management for the duration of the transaction, and the fact that spot transactions are mostly uncollateralised already, are well-made.

We do not agree entirely with the security and resilience benefits of the DLT. The reason for this is that most security breaches (of both existing systems and existing DLT applications, such as Bitcoin) seem to occur through attacks on entry points into systems or through social hacking of access credentials. Although the blockchain part of DLT is robust to hacking, it is not clear how the DLT addresses vulnerabilities in peripheral applications or entry/exit gateways in any way. If a malevolent user is able to affect the system using stolen credentials, or compromises an entry point, it is not clear how the immutability of the distributed ledger is a benefit, it may even make recourse more difficult. ]

<ESMA\_QUESTION\_DLT\_1>

**Q2: Do you see any other potential benefits of the DLT for securities markets? If yes, please explain.**

<ESMA\_QUESTION\_DLT\_2>

[One of the main benefits of the DLT for securities markets may not be a technological benefit at all. Rather, the need for cooperation in designing these DLT systems may be a catalyst for bringing together the various stakeholders and designing market infrastructure in a holistic way, to replace the current patchwork of legacy systems. If this proves to be the case, then the claimed benefits for clearing and settlement and other potential uses may yet be realised. ]

<ESMA\_QUESTION\_DLT\_2>

**Q3: 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, safe-keeping of assets and record of ownership) but rather to some activities only?**

<ESMA\_QUESTION\_DLT\_3>

[TYPE YOUR TEXT HERE ]

<ESMA\_QUESTION\_DLT\_3>

**Q4: 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>

CFA Institute believes that the most likely area of securities markets to be impacted by DLT is in the clearing, settlement and record-keeping functions. This opinion is, in part, formed by the results of an April 2016 survey of CFA charter holders on fintech issues who listed clearing and settlement as the most likely initial applications of DLT. The survey can be found at the following [link](#). We do not envisage, for example, trading venues operating on a DLT basis in the near future and are not aware of any work in this area. Rather, we think lower-hanging fruit with fewer legacy system issues is more likely to be addressed – for example, the processing of corporate actions, and depositary, custody, and notary functions seem to be good candidates for transition onto a DLT system. To this extent, we agree with paragraph 18 of the Discussion Paper. Further, the increased reporting and record-keeping requirements of the Markets in Financial Instruments Directive (MiFID II) may accelerate the process of finding more efficient ways to record and report activity in securities markets. This application of DLT was also highlighted by our survey of members as a likely candidate for DLT innovation.

<ESMA\_QUESTION\_DLT\_4>

**Q5: 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>

CFA Institute observes that the majority of DLT investment and research appears to be focused on banking applications, particularly in interbank payments systems. Securities markets do not appear to be at the forefront of developments, although there are some exceptions, with NASDAQ and DTCC being notable in this field. Commentators seem to agree on a 5-year timeframe for initial commercial rollout of the DLT, with a 10-15-year timeframe for more widespread adoption.

Our fintech survey ([link here](#)) of members showed consistent results, with 30% of respondents believing blockchain (i.e. DLT) technology will have the largest impact on financial services, out of a selection of prospective technologies. The respondents also listed the 5-year time frame as being most likely for the commercial application of DLT in finance. |

<ESMA\_QUESTION\_DLT\_5>

**Q6: How might your organisation benefit from the introduction of the DLT?**

<ESMA\_QUESTION\_DLT\_6>

As a membership organisation for the investment management profession, CFA Institute does not expect to benefit from the introduction of the DLT directly, only to the extent (if any) that the DLT benefits its members in the investment management profession. We are, however, interested in any technology that may help to advance our goals of promoting market fairness, market integrity, and investor protection. |

<ESMA\_QUESTION\_DLT\_6>

**Q7: 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>

[TYPE YOUR TEXT HERE |

<ESMA\_QUESTION\_DLT\_7>

**Q8: 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>

[CFA Institute broadly agrees with the list of potential challenges of the DLT in securities markets applications. However, we believe that the scalability issues listed are not relevant as they mainly exist in the realm of public DLTs, which are unlikely to be applied to securities markets. Private, or permissioned DLTs do not suffer from scalability or efficiency issues, or at least these are surmountable.

We agree with paragraph 32 that the bridge between the DLT and fiat currency ledgers will be a limiting factor in the realisation of efficiency benefits claimed by DLT proponents. It will also likely create security risks as entry points onto distributed ledgers tend to be the main targets of security attacks. We note that Central Banks in the EU appear to be quite active in investigating the potential use cases of the DLT although to-date no concrete applications have surfaced. |

<ESMA\_QUESTION\_DLT\_8>

**Q9: Do you see any other potential challenges? If yes, please explain.**

<ESMA\_QUESTION\_DLT\_9>

[As implied in our answer to Question 2, we think the issue of cooperation between stakeholders may ultimately prove to be the main challenge of DLT adoption. The DLT itself is well-known and poses no great technical challenge, rather it is the integration of it into legacy systems and across stakeholders with differing commercial interests that will pose the greatest challenge to the widespread adoption necessary to realise the full potential of the DLT. |

<ESMA\_QUESTION\_DLT\_9>

**Q10: 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>

[The issue of cooperation is being addressed by two large consortia of DLT stakeholders in the financial industry – R3, focused mainly on banking applications, and Hyperledger, which has a broader remit. We are not aware of any practical achievements from either of these consortia beyond some proof-of-concept demonstrations. |

<ESMA\_QUESTION\_DLT\_10>

**Q11: 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>

[CFA Institute broadly agrees with the analysis of the key risks of the DLT in securities markets applications. In particular, CFA Institute is interested in promoting free and fair markets to further our mission of supporting market integrity and investor protection. To this extent, we agree that the issues raised in Section 5.4 are particularly relevant. While distributed ledger applications are designed to distribute the ledgers themselves, they are actually centralising processes on a more macro scale.

To fully realise the potential benefits of DLT, future applications will need to involve the cooperation and participation of many stakeholders in systems that will likely be finite in number and where access is restricted. While this is also true of incumbent systems, it does highlight the need



for regulators to remain vigilant and not allow the de-facto creation of monopoly power in certain parts of the securities market value chain. |

<ESMA\_QUESTION\_DLT\_11>

**Q12: Do you see any other potential risks? Please explain.**

<ESMA\_QUESTION\_DLT\_12>

[TYPE YOUR TEXT HERE |

<ESMA\_QUESTION\_DLT\_12>

**Q13: How could these risks be addressed? Please explain by providing concrete examples, especially for the risks potentially affecting your organisation.**

<ESMA\_QUESTION\_DLT\_13>

[TYPE YOUR TEXT HERE |

<ESMA\_QUESTION\_DLT\_13>

**Q14: 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>

[TYPE YOUR TEXT HERE |

<ESMA\_QUESTION\_DLT\_14>

**Q15: 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>

[TYPE YOUR TEXT HERE |

<ESMA\_QUESTION\_DLT\_15>

**Q16: 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>

[TYPE YOUR TEXT HERE |

<ESMA\_QUESTION\_DLT\_16>

**Q17: 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>

[TYPE YOUR TEXT HERE |

<ESMA\_QUESTION\_DLT\_17>

**Q18: 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>

[TYPE YOUR TEXT HERE |

<ESMA\_QUESTION\_DLT\_18>





**Q19: 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>

[TYPE YOUR TEXT HERE ]

<ESMA\_QUESTION\_DLT\_19>

**Q20: Do you think that the DLT will be used for regulatory reporting purposes? Please explain, with concrete examples where appropriate.**

<ESMA\_QUESTION\_DLT\_20>

[TYPE YOUR TEXT HERE ]

<ESMA\_QUESTION\_DLT\_20>

**Q21: If the DLT is used for regulatory reporting purposes, how could compliance with the applicable regulatory requirements be ensured?**

<ESMA\_QUESTION\_DLT\_21>

[TYPE YOUR TEXT HERE ]

<ESMA\_QUESTION\_DLT\_21>

**Q22: 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>

[CFA Institute is not aware of any serious efforts to develop a trading venue based on DLT. The Australian Stock Exchange, which is at the forefront of attempting to commercialise DLT in the trading venue space is mostly focusing on clearing and settlement processes, to the best of our knowledge. We would be surprised to see trading venues and regulators moving towards the creation of a common trading platform on the basis of DLT given the explicit priority on creating trading venue competition (and with it, market fragmentation) by regulators over the last decade, which the trading venues have pursued with alacrity. ]

<ESMA\_QUESTION\_DLT\_22>

**Q23: Do you see potential regulatory impediments to the deployment of the DLT in securities markets?**

<ESMA\_QUESTION\_DLT\_23>

[CFA Institute understands it is the commercial business logic (or lack of) of DLT that is currently being investigated, which will ultimately accelerate or stall the deployment of DLT in securities markets applications. We do not believe regulatory issues are a first order factor in this process. ]

<ESMA\_QUESTION\_DLT\_23>

**Q24: 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 increasingly clear that DLT does not, and cannot, change the fundamental property rights underlying securities issuance and trading. Existing regulations ensuring accurate and timely disclosures, secure record keeping, clearing and settlement obligations and so on must be applied to any future platforms or securities based on DLT or any other technology. Regulators should not be over-awed by claims of revolution and disruption by a technology that claims to change or overcome human behaviour, rational and otherwise. We think DLT may rationalise the systems and



processes involved in securities markets, but this should be treated as a technological issue, much like high frequency and algorithmic trading has been in equities markets. ]

<ESMA\_QUESTION\_DLT\_24>