**Reply** **form: MiFIR Review**

Technical Standards related to Consolidated Tape Providers and DRSPs, and assessment criteria for the CTP selection procedure

Responding to this paper

ESMA invites comments on all matters in the Consultation Paper and in particular on the specific questions in this reply form. Comments are most helpful if they:

* respond to the question stated;
* indicate the specific question to which the comment relates;
* contain a clear rationale; and
* describe any alternatives ESMA should consider.

ESMA will consider all comments received by **28 August 2024.**

Instructions

In order to facilitate analysis of responses to the Consultation Paper, respondents are requested to follow the below steps when preparing and submitting their response:

* Insert your responses to the questions in the Consultation Paper in this reply form.
* Please do not remove tags of the type <ESMA\_QUESTION\_CP2\_1>. Your response to each question has to be framed by the two tags corresponding to the question.
* If you do not wish to respond to a given question, please do not delete it but simply leave the text “TYPE YOUR TEXT HERE” between the tags.
* When you have drafted your responses, save the reply form according to the following convention: ESMA\_CP2\_nameofrespondent.

For example, for a respondent named ABCD, the reply form would be saved with the following name: ESMA\_CP2\_ABCD.

* Upload the Word reply form containing your responses to ESMA’s website (**pdf documents will not be considered except for annexes**). 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

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# General information about respondent

|  |  |
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| Name of the company / organisation | AQUIS EXCHANGE EUROPE |
| Activity | Regulated markets/Exchanges/Trading Systems |
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# Questions

Section 3 – RTS on input and output data of CTPs:

**Q1: Do you agree with grounding the assessment framework of the quality of transmission protocols on the identified categories of technical criteria?**

<ESMA\_QUESTION\_CP2\_1>

We do not agree that the technical requirements of the transmission protocol itself should prescriptively encompass all areas if an overall solution does indeed address the areas identified. As an example, the areas identified as “Security” will absolutely be required by the CTP but may be incorporated into elements of the technology solution which do not explicitly need to be embedded into the transmission protocol itself.

Additionally, it should be considered that the winning CTP bidder will have more than one data transmission protocol/mechanism to its clients and as such this assessment criteria may not be appropriate for all data transmission protocols which the CTP provides its data for. As an example, some clients of the CTP may wish to consume historical data from the CTP, in which case many of the “Performance” category elements will be less important. We believe that the CTP should have 3 different methods by which consumers of CTP data can ingest it, the first would be via a traditional binary streaming feed to speed adoption of the CTP in a fashion that existing capital markets users are used to for consuming market data, additionally a web based format for perhaps retail brokerages and financial websites and finally a historical data bulk data receipt mechanism.

We also believe that no CTP should pay a license fee for any form of protocol usage, even if the protocol selected is not open source. Furthermore, although the solution should be considered “Open” from the perspective of anyone consuming the data being able to do so without commercial consideration as to any potential licensing fees associated with the protocol of transmission itself, it need not be open source as long as the CTP has procured the rights to utilise the transmission protocol without commercial consideration and any requirement to update it in line with the creator of the solution.

<ESMA\_QUESTION\_CP2\_1>

**Q2: Do you believe that additional categories of technical criteria should be considered for the definition of minimum requirements of the quality of transmission protocols?**

<ESMA\_QUESTION\_CP2\_2>

We believe that the ability of the financial services capital markets industry to be able to quickly adopt the final technical protocol should also be added to the list of categories to be considered such as the usage of an existing market data protocol which is already in use within the industry without any commercial consideration requirements. We believe that ultimately 3 different formats of data should be provided by the CTP for different client consumer profiles:

1. Realtime streaming binary UDP multicast market data format (investment banks, proprietary traders, market data vendors)

2. Realtime streaming WebSocket market data format (smaller websites and investment firms, retail brokerages)

3. Efficient, static historical data delivery mechanism (all of the above).

Additionally, we also believe that the ability to scale up to include potential additional fields and data by the CTP within minimal timeframe and cost should be added as a category such as those mentioned in the July 2026 review proposed by the European Commission for the CTP.

We further believe that the overall latency profile of the data should be a key consideration from the point in time the data is generated by the trading venue to the point in time it is disseminated by the CTP and as a result of this, translation into JSON or similar slow methods would compromise the ability of the CTP to put the data out as quickly as possible into the public domain.

Message length (number of bytes) should also be considered as an additional category. The message length of binary vs nonbinary data protocols is of particular importance when considering pre trade equities data. In our opinion a binary protocol is essential to optimise latency and minimise data storage and environmental costs when considering the number and frequency of pre trade messages.

<ESMA\_QUESTION\_CP2\_2>

**Q3: Do you agree with the proposal of introducing a single set of requirements across the three asset classes (equity, bonds, derivatives), or do you believe that different requirements should be tailored for each asset class?**

<ESMA\_QUESTION\_CP2\_3>

Harmonisation of protocols is preferable, but we refer to our reply to Q2, that for pre-trade equities the adoption of a binary protocol is in our opinion essential.

<ESMA\_QUESTION\_CP2\_3>

**Q4: Do you consider that the proposed minimum requirements for the technical criteria related to performance are technically feasible, coherent with the objective of high-quality data transmission to the CTP and in line with international standards? Please elaborate your response.**

<ESMA\_QUESTION\_CP2\_4>

We strongly believe that the proposed minimum throughput requirement proposed above is insufficient for the CTP.

We further believe that the proposed minimum requirements are insufficient for meeting the needs of a modern and robust consolidated tape for the EU for several reasons including:

Latency – 100 milliseconds from data source to data transmission by the CTP should be reduced and should perhaps be considered at approximately the 50 millisecond level for larger regulated markets, trading venues and systematic internalisers. Please see our answer to question 8 for further details

Throughput – 100 Megabits per second should be increased to 1 Gbps minimum, although 10 Gbps would be preferable. It is important to get this right at the outset as this will involve capex costs which will be incurred at the creation of the CTP and the ability to upgrade this once the CTP goes live will require additional cost from both an opex and capex perspective. Better to build the scalability that comes from a higher throughput feed in the beginning as this should be done in line with most regulated markets and trading venues requirements to have significant spare capacity in their systems to ensure that in the event of a spike in trading volumes, systems remain able to cope. This is also a relatively low cost item to be implemented so it might be that ESMA requests bidders to submit bids for multiple levels of throughput to be able to appropriately establish a reasonable level.

The above could be achieved for minimal additional cost consideration on the CTP’s part and would provide for a significantly enhanced offering from multiple perspectives including scalability, resilience and usefulness as well as the potential for future expansion of the CTP as and when legislation and regulation allow for such.

<ESMA\_QUESTION\_CP2\_4>

**Q5: Do you consider that the proposed minimum requirements for the technical criteria related to reliability are technically feasible, coherent with the objective of high-quality data transmission to the CTP and in line with international standards? Please elaborate your response.**

<ESMA\_QUESTION\_CP2\_5>

Whilst we agree that both the data providers and CTPs should have robust recovery mechanisms and functional roles in error detection, in alignment with 3.2.3.2, we would stipulate the error correction mechanism for input data must be executed by the regulated legal entities providing the data i.e. TVs, APAs, DRSPs etc and not the CTP itself.

<ESMA\_QUESTION\_CP2\_5>

**Q6: Do you consider that the proposed minimum requirements for the technical criteria related to security are technically feasible, coherent with the objective of high-quality data transmission to the CTP, and in line with international standards and other EU regulatory frameworks on information security (e.g. DORA)? Please elaborate your response.**

<ESMA\_QUESTION\_CP2\_6>

This point appears to conflate two separate security considerations that the CTP will have to work with, those being:

- Security of data transmitted TO the CTP provider by data generating contributors.

- Security of data transmitted BY the CTP provider to CTP clients consuming CTP data.

The wording of the question appears predicated towards the first point whereby data contributors to the CTP are required to adopt these technical minimum requirements. In this use case, the authentication and authorisation mechanisms are not a prerequisite due to the requirement of the CTP to have a closed and secure network to connect its central data aggregation hub to the CTP.

Further, we consider that for the second scenario, data transmitted by the CTP to its clients, the authentication and authorisation mechanisms should be required from an overall perspective but need not be a technical requirement of the protocol itself, as long as the CTP maintains some kind of system capable of authenticating and authorising the data consumers.

<ESMA\_QUESTION\_CP2\_6>

**Q7: Do you consider that the proposed minimum requirements for the technical criteria related to compatibility are technically feasible, coherent with the objective of high-quality data transmission to the CTP and in line with international standards? Please elaborate your response.**

<ESMA\_QUESTION\_CP2\_7>

This question again appears to be targeting the data transmission from the data contributors to the CTP as opposed to from the CTP outbound to its clients as per the previous question. We consider that this is less important for the first case and more important for the second case, however it is unclear from the question whether ESMA is considering interoperability from the perspective of a transmission protocol such as TCP/IP, UDP, or whether it is considering the data protocol itself such as Binary, JSON, CSV, etc.

Additionally, the data transmission protocol being “Open” is less important than being able to use it in perpetuity without commercial consideration or a requirement to use any updated proprietary components.

We believe that all existing equity trading venues and regulated markets that are delivering pre-trade or post-trade data at the point in time of the CTP award should be able to contribute data using existing native market data feeds and that such data be normalised by a feed handler provided by the CTP. This model would reduce time to market for the CTP and improve attractiveness of contributing to the CTP for smaller venues with an opt-out option so that cost of contributing is not a blocker to providing data and overall latency of the CTP.

In addition to existing feeds, a new, standardised ingestion API should be created to allow all any existing venue that wished to contribute data using a standardised format to do so and also that all new venues in the future would use to contribute to the CTP using a standardised mechanism.

<ESMA\_QUESTION\_CP2\_7>

**Q8: Do you agree with the proposed definition of “transmission of data as close to real time as technically possible”? If not, please explain.**

<ESMA\_QUESTION\_CP2\_8>

We support ESMA’s ambition to minimise CT latency, however we would suggest further clarification is required with specific reference to the median, average, or 99th percentile latency. In our opinion it is essential to recognise that latency is not a static metric. As an example, the latency between Madrid and Frankfurt may average around 15 milliseconds but can frequently exceed 25 milliseconds during volatility spikes. Consequently, although the latency numbers specified in point 45 should be achievable ‘most’ of the time, managing spikes would be challenging without full network control which a CTP is unlikely to possess. Further guidance of the procedures to be implemented to correct deficiencies and how and when breaches should be communicated to the market would be useful.

We would also add that whilst the 50 millisecond pre trade latency is realistic for the ‘larger’ fragmented markets with appropriate network connectivity already established, this latency target could be more challenging for ‘smaller’ markets with less connectivity infrastructure and that are physically further in distance away from any central CTP hub.

Consequently, in order that latency does not become a ‘blocking’ factor for smaller markets, in equities we would propose that the 50 millisecond latency definition should be mandated for all TVs executing with more than 1% European market share, with a potential maximum of 100 milliseconds for markets with less than 1% market share which by nature are generally less fragmented.

<ESMA\_QUESTION\_CP2\_8>

**Q9: Should ESMA consider specific rules for real-time transmission of transactions subject to deferred publication?**

<ESMA\_QUESTION\_CP2\_9>

We do not consider specific rules are necessary for deferred publication

<ESMA\_QUESTION\_CP2\_9>

**Q10: Do you agree with the baseline proposal of adopting JSON as standards and format of data to be transmitted to the CTPs, or do you prefer alternative proposals? Please justify your answer and, if needed, provide additional advantages and disadvantages related to each proposal.**

<ESMA\_QUESTION\_CP2\_10>

No, we do not agree with ESMA on the baseline proposal of adopting JSON for all use cases.

Using JSON for real-time market low latency data transmission in pre trade equities is inappropriate due to its inefficiencies in message size and parsing speed. JSON's text-based format produces much larger messages because of additional data like keys and delimiters as well as using human readable characters, increasing transmission and processing time, which is critical where microseconds matter. Larger messages also consume more network bandwidth, potentially causing congestion and higher operational cost because parsing JSON requires more computational resources compared to binary formats, slowing down the system's ability to handle high data volumes, thereby reducing throughput. Unlike binary protocols, JSON lacks built-in error-checking and correction mechanisms, necessitating additional error handling layers that add to processing time.

Moreover, the environmental cost of using JSON should not be underestimated. Larger data sizes and increased computational requirements lead to higher energy consumption. Data centres processing these transactions must use more power to handle the increased load, resulting in a larger carbon footprint. Efficient protocols that minimise data size and optimise parsing not only improve performance but also reduce the environmental impact by lowering energy usage and decreasing the overall demand on data centre resources.

Additionally, many Trading Venues are already using highly performant binary protocols which are designed for low latency. If all TVs were required to send market data in JSON format in pre trade equities this would slow down the dissemination of data and impose significant costs on the industry to upgrade infrastructure and handle the inefficiencies, further exacerbating both financial and environmental impacts.

As mentioned in our reply to Question 1, we therefore propose that the binary protocols be maintained in an unchanged format with the data aggregator within the CTP normalising such protocols. This model will simplify integration, reduce time to market, provide scalability, and avoid the costly inefficiencies of converting market data for all TVs thus saving the industry from substantial infrastructure upgrade costs. The carbon footprint will also be significantly lower.

Finally, market data vendors which consume Realtime market data are used to ingesting various forms of binary data and if the CTP is allowed to disseminate some form of binary data, this will be the overall lowest latency solution from source to distribution of data, likely with the quickest time to market given market data vendors familiarity with binary market data feeds. This is critical for the CTP to reach breakeven stage as quickly as possible and thus prove the financial viability for the long term of the CTP given that market data vendors will likely be instrumental to wider market adoption of CTP data for non-trading applications.

<ESMA\_QUESTION\_CP2\_10>

**Q11: Do you believe that the proposed standards and formats (baseline and any alternatives) are coherent with other CTP requirements (transmission protocols, real-time transmission and presentation of output data)? Please justify your answer.**

<ESMA\_QUESTION\_CP2\_11>

Please see our reply to Q10.

<ESMA\_QUESTION\_CP2\_11>

**Q12: Do you find more suitable to prescribe one single format across the 3 CTPs (equity, derivatives, bonds) or to prescribe distinct formats according for different asset classes?**

<ESMA\_QUESTION\_CP2\_12>

As already mentioned in answers to questions above we believe distinct formats should be determined by market requirements for consolidated data. A binary protocol is essential for pre and post trade equities.

<ESMA\_QUESTION\_CP2\_12>

**Q13: Do you support the proposals on core and regulatory data? In particular, are there other relevant fields to be added to the regulatory data? Furthermore, would you propose the inclusion of supplementary fields for input core market data beyond those intended for dissemination by the CTP?**

<ESMA\_QUESTION\_CP2\_13>

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<ESMA\_QUESTION\_CP2\_13>

**Q14: Do you support the proposal of machine-readable and human-readable formats outlined in this section?**

<ESMA\_QUESTION\_CP2\_14>

TYPE YOUR TEXT HERE

<ESMA\_QUESTION\_CP2\_14>

**Q15: Do you agree with the proposal of data quality measures and enforcement standards for input data?**

<ESMA\_QUESTION\_CP2\_15>

We agree with the proposal on data quality measures but disagree with enforcement standards and sanctions.

We specifically refer to the statement ‘CTPs are not supposed to directly correct erroneous trades, except for exceptional circumstances when data contributors are unable to do so for technical reasons’. In our opinion, no modification of data by the CTP should be possible or permitted even for exceptional circumstances. Cancellations are technically possible and could potentially be considered, but any cancellations would need to be defined with very specific use cases and clear rules that would avoid any differential of messaging between the CTP and TVs.

We also disagree with the suspension of revenues to data contributors who fail to comply seriously with data quality requirements. Within the current proposition such ‘sanctions’ can only be applied to the trading venues receiving any revenue allocation, however many APAs and DRSPs reporting real time post trade transactions will not be beneficiaries of any revenue allocation despite the fact the quality of their data input is critical for the credibility and quality of the post trade CT. We therefore propose that an additional scheme of financial penalties should be added to sanction data providers who will not benefit from any revenue allocation but consistently deliver low quality data.

We further disagree with the immediate requirement for the CTP to notify the data contributors to a data quality issue since we believe that there will be multiple types of data quality issues that could occur in the data transmitted by a contributor to the CTP. Some of these will be immediately apparent and actionable such as where the format and or content of the data message sent by the contributor fails basic validation rules, however there are other types of data validation which will be harder to identify and will need to be subject to an assessment process including appropriate communications between the contributor and the CTP. These different scenarios will create differing data being sent out to CTP clients whereby in scenario one, the message would simply be rejected back to the contributor but in scenario two, the message might have been sent out on the feed, therefore we view that different feedback mechanisms will likely be required.

<ESMA\_QUESTION\_CP2\_15>

**Q16: Do you agree with the proposal of data quality measures for output data?**

<ESMA\_QUESTION\_CP2\_16>

We agree with the output data quality measures. Communication channels should be via electronic messaging (defined as output text for market status changes and other non-pricing data rather than via private messaging from CTP consumers back to the CTP) via the market data feed whenever possible.

<ESMA\_QUESTION\_CP2\_16>

Section 4 – RTS on the revenue distribution scheme of CTPs:

**Q17: On the basis of the issue presented in the above paragraph, what do you think is the right approach to identify a trading venue and group? How could a trading venue and a group be identified? How should the links with investment firms be determined?**

<ESMA\_QUESTION\_CP2\_17>

The task of identifying Trading Venues that are potentially eligible to participate in any non-waiver trading equity revenue participation model could be simplified if ESMA were to apply current criterion 3 (pre trade transparency) as its first test of eligibility. In our opinion this would significantly reduce the number of venues in the first sort thus permitting the more accurate test of segment MIC to be applied to what would be a much smaller universe.

<ESMA\_QUESTION\_CP2\_17>

**Q18: Do you agree with the above assessment? If not, please explain.**

<ESMA\_QUESTION\_CP2\_18>

Firstly, for all criterion we would request the appropriate asset class equities, bonds, derivatives be added as an identifier to the ESMA lists to facilitate the search criteria for the CTP operating in each asset class.

Criterion 1. Small Trading Venues can be correctly identified in the above assessment; however, clarity is required for definition and application of New Trading Venues.

Will the CTP be obliged to take input data from all new trading venues immediately after launch?

How will the revenue allocation model be calculated? i.e 1st January after launch/immediately on day of launch/1 calendar year after launch etc?

What mechanisms should be implemented to mitigate the potential proliferation of new trading venues driven uniquely by CT data revenues?

Criterion 2. Young Instruments, we would propose that ADVT bands currently calculated by ESMA be applied in addition to the above assessment which would enable the application of a more refined revenue allocation model. Without such bands very large IPO’s or Member State privatisations will significantly dilute the small and mid-cap young market allocation.

Criterion 3. Will segment MICs integrating frequent batch auction (FBA) models be eligible for inclusion in the revenue allocation model? If ESMA intends to include FBA mechanisms in the revenue allocation, it should ensure all TV’s operating FBA mechanisms modify their existing publication data to indicate whether each matching FBA trade was either price forming (eligible) or matched at mid-point (non-eligible).

<ESMA\_QUESTION\_CP2\_18>

**Q19: For the identification of the venue of first admission to trading, do you prefer option (A) use of FIRDS, option (B) the CTP collects the relevant information itself? Please explain and provide any alternative option you consider more appropriate.**

<ESMA\_QUESTION\_CP2\_19>

Clearly a single source of reference data is desirable, unfortunately our experience to date is that FIRDS is not always reliable. Consequently, to avoid any implementation delays we prefer option B, the CTP collects relevant data itself.

<ESMA\_QUESTION\_CP2\_19>

**Q20: Do you agree that a flag indicating that the transaction was subject to an LIS waiver should be information to be sent to (but not published by) the CTP? If not, please explain.**

<ESMA\_QUESTION\_CP2\_20>

We support the implementation of a LIS flag for improved transparency but share ESMAs view that application should be monitored carefully particularly when used with other OTC flags to avoid misinformation.

<ESMA\_QUESTION\_CP2\_20>

**Q21: Could the determination of the pre-trade volume be done differently by the CTP (e.g. proxy this volume with the pre-trade data received) but at the same time sufficiently accurately? If yes, please explain.**

<ESMA\_QUESTION\_CP2\_21>

We believe the current determination of pre trade volume is appropriate.

<ESMA\_QUESTION\_CP2\_21>

**Q22: Do you agree that the methodology to distribute the revenues should require the conversion of the values into percentages? If not, please explain.**

<ESMA\_QUESTION\_CP2\_22>

We agree with the conversion of values into percentages

<ESMA\_QUESTION\_CP2\_22>

**Q23: Do you agree with the transactions to include and exclude for the determination of the volume for criteria #1 and #2? If not, please explain.**

<ESMA\_QUESTION\_CP2\_23>

Whilst we recognise that certain transparency flags are regularly used in conjunction with NTLS & RFPT which would eliminate any revenue allocation we would suggest ESMA review the use cases of the following flags without NTLS & RFTP to validate whether they are genuinely price forming transactions available to the wider market BENC, PORT, SDIV, LRGS, SIZE.

<ESMA\_QUESTION\_CP2\_23>

**Q24: What would be your view on the frequency of redistribution? Which issues do you foresee in the redistribution process? How could those issues be solved? Please explain.**

<ESMA\_QUESTION\_CP2\_24>

We would anticipate that the ‘smaller’ TVs are dependent on CT market data revenue allocation to operate their business models and waiting a full year before any revenue allocation is unreasonable. Consequently, we would propose a quarterly allocation model with any potential balance adjustment at year end

<ESMA\_QUESTION\_CP2\_24>

**Q25: Do you agree with the proposed timeline for the update of the list of data contributors and the identified issues? How could the issues be solved? Please explain.**

<ESMA\_QUESTION\_CP2\_25>

No. We do not consider it beneficial that new trading venues should contribute to the CT and receive revenue allocation immediately. We believe that all new trading venues should be required to contribute data to the CT from launch but should only be eligible to receive revenues from the CT after at least 1 year of operation to ensure that new business models don’t evolve whereby new trading venues are created purely to exploit CT revenue allocation rather than the benefit of end users.

<ESMA\_QUESTION\_CP2\_25>

**Q26: What would be your view on the issues for the first year of operations of the CTP? How could those issues be solved? Please explain.**

<ESMA\_QUESTION\_CP2\_26>

We believe that ESMA should update all lists and start recording all asset class data commencing 15th January 2025. This would facilitate preparation and reduce many 1st year operational risks.

<ESMA\_QUESTION\_CP2\_26>

**Q27: Do you agree with ESMA preferred proposal to set the weights of the revenue redistribution scheme to 4.5, 4.0 and 1.5 for the small trading venue criterion, the young instruments criterion and the transparent instruments criterion, respectively? If not, please explain.**

<ESMA\_QUESTION\_CP2\_27>

Weightings for revenue redistribution will always be debated ferociously depending on the participants business models. We would nevertheless make the following observations.

(a) Smaller markets. We support the principal of favouring small markets revenue allocation and a weighting of 4.5 is not unreasonable. However, the ‘bonus’ of improved revenue allocation for small markets should also be accompanied with certain obligations of connectivity. We therefore propose that only those small markets that have decided to opt in to providing data to the CTP within two years of the official launch should be eligible for any ‘improved’ weighting scheme.

(b) Young Instruments. We believe the revenue allocation model for young instruments requires greater reflection. It does not appear that the use case of disproportionally large IPOs such as Government privatisations has been taken into consideration with these weightings. This could have a negative reallocation impact on small and mid-cap young securities which we do not believe is the desired outcome. We would therefore propose that ADVT bands be applied to young securities with much greater weightings being applied to the lowest ADVT bands.

(c) Transparent Markets. Further reflection is required for auctions. Should open and close auctions have a greater weighting than continuous trading? Should there be a weighting for frequent batch auctions? (see reply to Q18)

<ESMA\_QUESTION\_CP2\_27>

**Q28: Would you consider appropriate that the weight (percentages) sum to 10 (100%)? If not, please explain and provide your alternative proposal for the weights (percentages).**

<ESMA\_QUESTION\_CP2\_28>

Yes. This methodology is appropriate.

<ESMA\_QUESTION\_CP2\_28>

**Q29: Do you agree with the proposed (i) frequency of the determination of the weights (ii) timing of determination of the weights (iii) timing of application of the weights? If not, please explain.**

<ESMA\_QUESTION\_CP2\_29>

Yes. We agree with frequency & timing.

<ESMA\_QUESTION\_CP2\_29>

**Q30: Do you agree with the proposed text? Have you identified any missing points or issues?**

<ESMA\_QUESTION\_CP2\_30>

Yes. We agree on the proposed methodology and weighting

<ESMA\_QUESTION\_CP2\_30>

**Q31: Do you agree with ESMA’s proposal on the criteria for a potential suspension of redistribution in case of serious and repeated breach by the CTP? If not, which alternative or/and additional criteria would you consider relevant?**

<ESMA\_QUESTION\_CP2\_31>

The process of suspension is applicable but complicated. Simplification through the reduction in the number of processes would be desirable. Financial sanctions for data contributors who do not benefit from any revenue allocation must be added.

<ESMA\_QUESTION\_CP2\_31>

**Q32: Do you agree with ESMA’s proposal on the procedure for the suspension and the resumption of redistribution? If not, which alternative approach would you consider suitable?**

<ESMA\_QUESTION\_CP2\_32>

We agree. The suspension proposal appears to be reasonable.

<ESMA\_QUESTION\_CP2\_32>

**Q33: Do you agree with ESMA’s proposal on the timing of the procedure for the suspension and the resumption of redistribution? If not, which alternative approach would you consider suitable?**

<ESMA\_QUESTION\_CP2\_33>

We agree. Suspension timing is acceptable.

<ESMA\_QUESTION\_CP2\_33>

**Q34: Do you agree with ESMA’s proposal regarding a one-week timeframe for data contributors to furnish evidence of non-breaches? If you disagree, could you suggest an alternative approach that you find appropriate?**

<ESMA\_QUESTION\_CP2\_34>

We agree. A one week time frame is acceptable.

<ESMA\_QUESTION\_CP2\_34>

**Q35: Do you agree with ESMA’s expectation on the notification to be made by the CTP to the competent authority of the data contributor once a suspension has been triggered?**

<ESMA\_QUESTION\_CP2\_35>

Yes. We Agree.

<ESMA\_QUESTION\_CP2\_35>

**Q36: Do you agree with ESMA’s proposal on the approach to the retained revenue? In your view, which rate should apply to compound the interest on retained revenue?**

<ESMA\_QUESTION\_CP2\_36>

No. We disagree.

Retained revenue cannot be the only criteria of sanction. A financial penalty mechanism or blacklist for those data contributors not benefitting from revenue allocation model must also be intgrated. Based upon our current market data experiences it is the post trade OTC data that is much more likely to be erroneous.

<ESMA\_QUESTION\_CP2\_36>

Section 5 – RTS on the synchronisation of business clocks

**Q37: Do you agree with the proposed approach on synchronisation to reference time? If not, please explain.**

<ESMA\_QUESTION\_CP2\_37>

We are in agreement with the proposed approach to reference time.

<ESMA\_QUESTION\_CP2\_37>

**Q38: Do you support a timestamp granularity of 0.1 microseconds for operators of trading venues whose gateway-to-gateway latency is smaller than 1 millisecond? If not, please explain. Would you argue for an even smaller granularity? If yes, please explain.**

<ESMA\_QUESTION\_CP2\_38>

No. We do not support the proposed approach.

Before committing to such an upgrade, it's crucial for the regulator to evaluate whether the benefits of moving to 0.1 microseconds granularity justify the substantial investment and operational complexities involved, especially to smaller trading venues. This evaluation should consider the practical utility of increased precision against the backdrop of existing trading strategies and regulatory frameworks. Such a decision should align with the strategic goals of the regulator, ensuring that any move towards tighter timestamp granularity provides a clear competitive or regulatory advantage. This is especially true when the requirements for the CTP according to question 41, the requirement for the CTP is in the millisecond range. We are conscious of not setting standard and requirements which are outside the scope of the CTP.

While we are already able to provide a 0.1 microseconds timestamp granularity, implementing a timestamp granularity of 0.1 microseconds (100 nanoseconds) in all trading venues, where gateway-to-gateway latency is already less than 1 millisecond, presents significant challenges and complexities. The shift from a 100-microsecond standard demands substantial technical upgrades, including the integration of high-precision hardware such as atomic clocks and specialised network cards. These upgrades must be executed without introducing additional latency, which can be technically demanding and financially burdensome. Moreover, the increased precision significantly raises operational costs, from system upgrades and maintenance to enhanced data processing and storage requirements.

<ESMA\_QUESTION\_CP2\_38>

**Q39: Do you support the proposed approach on the level of accuracy for trading venue members, participants or users? If not, please explain.**

<ESMA\_QUESTION\_CP2\_39>

Yes. We are in agreement with the proposed approach.

<ESMA\_QUESTION\_CP2\_39>

**Q40: Do you agree with the proposed approach on traceability to UTC? If not, please explain.**

<ESMA\_QUESTION\_CP2\_40>

Yes. We are in agreement with the proposed approach.

<ESMA\_QUESTION\_CP2\_40>

**Q41: Do you agree with the proposed accuracy levels for APAs, SIs, DPEs and CTPs? If not, please explain.**

<ESMA\_QUESTION\_CP2\_41>

Yes. We are in agreement with proposed approach with the nuances raised in our answer to question 38.

<ESMA\_QUESTION\_CP2\_41>

**Q42: Do you think that more stringent requirements should be set for SIs compared to DPEs considering they have pre-trade transparency obligations? If not, please explain.**

<ESMA\_QUESTION\_CP2\_42>

As per our answer to question 38, we believe that all providers should strive to achieve the most precise and granular timestamping possible, however, we are conscious of the complexity and cost to achieve the lowest of error and highest of precision. Nonetheless the CTP seems to be directed to achieve milliseconds level precision and the question remain as to the usefulness of a millisecond level aggregation for pre-trade data.

Consequently, our preferred approach would be to use the current level of granularity used by the providers and increment over time the lowest requirements via RTS. This incremental approach would maximise the chance of success for the CTP by minimising risk, while ensuring that more stringent criteria can be achieved over time.

<ESMA\_QUESTION\_CP2\_42>

Section 6 – RTS/ITS on the authorisation and organisational requirements for DRSPs

**Q43: Do you agree with the approach proposed by ESMA?**

<ESMA\_QUESTION\_CP2\_43>

Yes. We are in agreement with the proposed approach.

<ESMA\_QUESTION\_CP2\_43>

**Q44: Do you agree to include new authorisation provisions on ownership structure and internal controls for APAs and ARMs?**

<ESMA\_QUESTION\_CP2\_44>

Yes. We are in agreement with the proposed approach.

<ESMA\_QUESTION\_CP2\_44>

**Q45: Do you have any further comments or suggestions on the draft RTS? Please elaborate your answer.**

<ESMA\_QUESTION\_CP2\_45>

TYPE YOUR TEXT HERE

<ESMA\_QUESTION\_CP2\_45>

**Q46: Do you agree with the approach proposed by ESMA?**

<ESMA\_QUESTION\_CP2\_46>

Yes. We are in agreement with the proposed approach.

<ESMA\_QUESTION\_CP2\_46>

**Q47: Do you foresee specific conflicts of interests that may arise between (i) CTP and data contributors and (ii) CTP and clients and users?**

<ESMA\_QUESTION\_CP2\_47>

We acknowledge potential conflicts of interest between the CTP and both data contributors and clients/users. These conflicts could arise due to the inherent position of the CTP in aggregating and disseminating market data, which places it at the intersection of multiple market participants with varying interests.

i) CTP and Data Contributors:

A conflict could emerge if the CTP's consortium members or shareholders are themselves required to contribute data to the CTP. Additionally, existing and past financial or operational incentives of consortium members, such as relationships with data contributors, or provision of ancillary services surrounding market data, could all influence the quality, speed, or accessibility of the data provided by the CTP.

ii) CTP and Clients/Users:

A conflict could arise if the CTP consortium members have existing commercial interests in pre or post-trade market data. This may lead to the consortium member favouring its own offerings over the CTP's provision of accessible, comprehensive and timely data. For example, if the CTP’s fees are too high compared to existing venues, clients might be disincentivized to use the CTP’s services, undermining its role as a golden source of truth consolidator. The CTP could also impose higher fees or restrictive licensing terms on the use of non-display market data which would disadvantage or exclude certain users, thereby affecting fairness and transparency.

Finally, if employees or decision-makers within the CTP are compensated or incentivized based on criteria that do not align with the success and fairness of the CTP’s operations, it could lead to decisions that prioritize short-term financial gains over the long-term integrity and reliability of the CTP.

<ESMA\_QUESTION\_CP2\_47>

**Q48: What other elements, if any, should be included in the RTS on authorisation of CTPs?**

<ESMA\_QUESTION\_CP2\_48>

Data Quality Standards:

* Accuracy: Clear guidelines on data accuracy standards, including verification processes and tolerance levels for errors.
* Timeliness: Specific requirements for data update frequency and latency to ensure timely dissemination.
* Completeness: Standards for the scope of data coverage, including minimum requirements for different asset classes and market segments.
* Consistency: Guidelines for data standardization and harmonization to ensure consistent formatting and definitions across different data sources.

Security and Resilience:

* Cybersecurity: Robust cybersecurity measures to protect against data breaches, unauthorized access, and other cyber threats.
* Disaster Recovery: Plans for business continuity and disaster recovery to ensure uninterrupted data services in case of disruptions.
* Data Integrity: Measures to safeguard data integrity and prevent manipulation or tampering.

Governance and Transparency:

* Conflict of Interest Management: Clear policies and procedures to address potential conflicts of interest between the CTP, data contributors, and clients/users.
* Transparency: Requirements for disclosure of ownership structure, governance arrangements, and any material conflicts of interest.
* Auditing: Regular audits of the CTP's operations, including data quality, security, and governance practices.

User Fees and Licensing:

* Fairness: Guidelines for setting fair and transparent user fees, considering factors such as data volume, usage patterns, and market conditions.
* Non-Discriminatory Access: Prohibitions on discriminatory pricing or licensing terms that could disadvantage certain users.
* Data Licensing: Clear rules governing data licensing, including terms and conditions, intellectual property rights, and restrictions on use.

Regulatory Oversight:

* Reporting Requirements: Mandatory reporting of key performance indicators, incidents, and regulatory breaches.
* Supervisory Powers: Granting regulatory authorities, the power to conduct on-site inspections, request information, and impose sanctions if necessary.
* Cooperation with Other Regulators: Framework for cooperation with other relevant regulatory bodies, both domestically and internationally.

<ESMA\_QUESTION\_CP2\_48>

**Q49: What other elements, if any, should be included in the RTS on authorisation of CTPs?**

<ESMA\_QUESTION\_CP2\_49>

TYPE YOUR TEXT HERE

<ESMA\_QUESTION\_CP2\_49>

Section 7 – Criteria to assess CTP applicants

**Q50: How would you define retail investors, academics and civil society organisations for the purpose of the CTP?**

<ESMA\_QUESTION\_CP2\_50>

Retail Investors: Individuals who invest their own personal funds in financial instruments for their own account, rather than on behalf of others. Key Characteristics:

• Primarily individual investors with relatively small investment amounts.

• Typically lack professional investment expertise.

• Invest for personal financial goals, such as retirement or wealth accumulation.

Academics: Individuals engaged in higher education or research, typically affiliated with universities, research institutions, or other academic bodies. Key Characteristics:

• Use market data for research, teaching, and academic publications.

• Require access to data for analysis and modelling purposes.

• Often contribute to the development of market knowledge and understanding.

Civil Society Organisations- Non-profit organisations that operate independently from the government and are typically involved in advocacy and public interest activities. Key Characteristics:

• May include consumer protection groups, market watchdogs, and think tanks.

• Use market data for research, advocacy, and public education purposes.

• Contribute to market transparency and investor protection.

Operational Considerations: To effectively implement free access for these groups, the CTP may need to:

• Establish verification processes: Develop procedures to verify the identity and eligibility of individuals and organisations claiming free access.

• Implement usage restrictions: Define acceptable use cases and limitations to prevent misuse of the free data.

• Consider data formats: Provide data in formats suitable for different user groups (e.g., Excel, CSV, API).

• Offer educational resources: Provide guidance on data interpretation and usage for retail investors and CSOs.

<ESMA\_QUESTION\_CP2\_50>

**Q51: What are in your view the most important elements that should be taken into account when defining the governance structure of the CTP?**

<ESMA\_QUESTION\_CP2\_51>

**Core Principles-**

• Independence: The CTP should operate independently from any trading venue or market participant to maintain impartiality.

• Transparency: The CTP's operations, including data collection, processing, and dissemination, should be transparent to market participants.

• Accuracy and Reliability: The CTP must ensure the accuracy, reliability, and timeliness of the consolidated tape data.

• Market Integrity: The CTP should contribute to maintaining fair and orderly markets by providing a level playing field for all market participants.

• Data Protection: The CTP must adhere to strict data protection and privacy regulations.

**Governance Structure Elements-**

• Regulatory Oversight: Strong regulatory oversight to ensure compliance with market rules and regulations.

• Risk Management: Robust risk management framework to mitigate operational and reputational risks.

• Data Security: Comprehensive data security measures to protect sensitive market data.

• Market Participant Representation: Involvement of market participants in the CTP's governance structure to ensure their needs are considered.

• Conflict of Interest Management: Clear policies and procedures to manage potential conflicts of interest.

• Financial Stability: Adequate financial resources to support the CTP's operations and ensure its long-term viability.Operational Resilience: Robust business continuity and disaster recovery plans to minimise disruptions to the consolidated tape.

<ESMA\_QUESTION\_CP2\_51>

**Q52: Should the CTP include representation of other stakeholders within their governance structure?**

<ESMA\_QUESTION\_CP2\_52>

Yes. We agree with ESMA’s suggestion of an advisory committee within the CTP although we would advise that members of any such committee should be separate from members of the European Commission Expert Stakeholder Group on Market Data to avoid any potential conflicts of interest.

<ESMA\_QUESTION\_CP2\_52>

**Q53: Do you agree with the proposed approach on the assessment of necessity of joint application?**

<ESMA\_QUESTION\_CP2\_53>

Yes. We agree that the proposed approach on the assessment of necessity of joint applications is reasonable, subject to the fact that Aquis considers that joint applications include applications where a single legal entity has been created by multiple separate legal entities which are shareholders in the single legal entity for the purposes of creating a bid for the CTP business. In this scenario, it is necessary to interrogate all of the parent shareholders of the bid entity against the above criteria.

<ESMA\_QUESTION\_CP2\_53>

**Q54: Which minimum requirements on identifying and addressing potential conflicts of interest would you consider relevant?**

<ESMA\_QUESTION\_CP2\_54>

The following requirements are the minimum which should be considered:

• Are any of the potential joint application consortium members or shareholders required to contribute data to the CTP once it has been created?

• Are any of the potential joint application consortium members or shareholders planning to contribute data to the CTP in the event that it wins the tender but not contribute data if another competing CTP was selected.

• Are any of the potential joint application consortium members or shareholders expecting to take fees from the CTP for the provision of services of any kind?

• Are the contractual relationships for those provision of services of any kind subject to ongoing reasonable assessment criteria upon contract renewal?

• What existing or past business relationships that any of the proposed or existing board members of the potential joint application has had with any company that would be a contributor or consumer of the CTP and what risk mitigation around conflicts of interest have been taken?

• What existing or past business relationships that any of the proposed or existing employees of the joint application legal entity has had with any company that would be a contributor or consumer of the CTP and what risk mitigation around conflicts of interest have been taken?

• Do any of the current or planned employees of the potential joint application legal entity if already in existence have compensation criteria related to anything other than the performance of the CTP?

• Governance of the CTP should be able to identify any employees that may have interests which diverge from the success of operating the CTP including inappropriate incentives other than around the success of the CTP.

<ESMA\_QUESTION\_CP2\_54>

**Q55: To score the applicants on their development expenditure and operating costs, ESMA intends to look at the costs the applicant will need to cover on an annual basis. Do you agree with this approach? If not, which alternative approach would you deem more appropriate?**

<ESMA\_QUESTION\_CP2\_55>

No. We do not agree with this approach.

We consider that in its first contract award period, the total cost of ownership of the CTP will be of paramount importance to demonstrate the success of the CTP and its ability to operate a viable business on an ongoing basis. As such, we disagree with ESMA’s proposal to give greater weighting to the ongoing annual costs of any CTP bid and proposes that the criteria be for the entire costs of running the CTP for the contract period, including any startup and build/development costs incurred prior to the award of the CTP tender. If this is not the approach which is taken, there is a danger that a potential winning CTP application might load significant costs onto the startup and once off development cost period to the detriment of the wider market and any contributing venues potential revenue distribution.

Further, we propose that ESMA also identifies what kinds of contractual provisions (if any) the CTP applicant has with any proprietary technology outsourced providers to ensure that any critical components of the CTP are subject to reasonable ongoing commercial basis upon contract renewal.

As a final point, we believe that costs should be competed for between marketplace providers and potential competing bids during the entirety of the preparation and bid submission process and wish ESMA to confirm with all potential bidders that no agreements of exclusivity of negotiations be attempted or allowed to be entered into as any such agreement whether suggested or agreed to would be anticompetitive in nature and may ultimately push up the costs of all tenders to the detriment of the CTP.

<ESMA\_QUESTION\_CP2\_55>

**Q56: The simplicity of the fee structure and licensing models can be scored by taking into account the number of tiers, fee types and licensing models. Does this accurately reflect simplicity? If not, would you propose a different approach to assess simplicity? Please elaborate.**

<ESMA\_QUESTION\_CP2\_56>

While counting tiers, fee types, and licensing models provides a basic overview of fee structure complexity, it falls short of accurately reflecting overall simplicity for several reasons:

• Complexity within tiers: Tiers might have complex eligibility criteria or variable fee calculations.

• Fee type complexity: Fee types like rebates, discounts, or volume-based adjustments can introduce complexity.

• Licensing model nuances: Licensing models may have intricate terms and conditions, impacting overall simplicity.

To accurately assess fee structure and licensing model simplicity from our perspective, we would consider the following factors:

**1. Clarity and Transparency:**

• Clear and concise fee schedules and licensing agreements.

• Easily understandable fee calculations and explanations.

• Transparent disclosure of all fees, including hidden or ancillary charges.

**2. Predictability:**

• Consistent fee application across different customer segments and trading activities.

• Minimal fee changes and clear communication of any modifications.

• Avoidance of complex fee adjustments based on market conditions or other external factors.

**3. Competitive Landscape:**

• Benchmarking fee structures against competitors to assess relative simplicity.

• Identifying opportunities to simplify based on competitor practices.

**5. Regulatory Compliance:**

• Adherence to EU regulations (e.g., MiFID II) regarding fee transparency and disclosure.

• Alignment of fee structure with regulatory requirements to avoid unnecessary complexity.

Additional Considerations

• Quantitative metrics: While not a sole indicator, metrics like the number of fee components can provide additional insights.

• Qualitative assessments: Feedback, surveys, and usability testing can help gauge perceived simplicity.

• Long-term perspective: Regularly review and assess fee structure simplicity to adapt to changing market conditions and customer needs.

By combining quantitative and qualitative assessments, focusing on clarity, predictability, customer experience, and regulatory compliance, venues can effectively evaluate and enhance the simplicity of their fee structures and licensing models.

<ESMA\_QUESTION\_CP2\_56>

**Q57: The approach proposed for the assessment of the ability of CTP applicants to process data is grounded on the assessment of the technological infrastructure in ensuring scalability, low-latency, accuracy and security throughout the data lifecycle. Do you agree with this approach, or would you consider additional elements to be assessed?**

<ESMA\_QUESTION\_CP2\_57>

We agree with the approach proposed for the assessment of the ability of CTP applicants to process data, particularly the emphasis on evaluating the technological infrastructure's scalability, speed, and security throughout the holistic data lifecycle. As stated in previous answers, while low latency is crucial, it is also important to consider jitter (or latency variability) – consistent and predictable data transmission speeds are essential for ensuring reliable and timely data delivery.

In addition, we believe that further elements should be considered to provide a more comprehensive assessment framework:

Operational Resilience: The resilience of the CTP's data processing infrastructure against operational risks, such as system failures, cyber-attacks, and other disruptions, should be considered. This includes evaluating disaster recovery plans, business continuity strategies, and the ability to maintain service levels under stress conditions. Additionally, in accordance with DORA, utilising a diverse cloud infrastructure is critical to enhancing resilience and security. CTPs should leverage multiple cloud providers where appropriate to avoid single points of failure.

Data Storage and Management: The ability to efficiently store, manage, and retrieve large volumes of data is critical. This includes assessing the cost efficiency and scalability of storage solutions, data retention policies, and the ability to handle historical data effectively. Ensuring that data is stored securely and can be accessed in a timely manner is important to maintaining the integrity and usability of the data.

Capacity Assessment: in addition to performant software, servers must have sufficient CPU and memory resources, and network connections must have adequate bandwidth to support consistent, low latency data processing. We have previously mentioned that the proposed lease line bandwidth of 100 Megabits is insufficient (see answer to Q4), and it is crucial that these limitations are addressed to prevent bottlenecks.

Future Extensibility: The data processing framework should be built on technological principles that facilitate future extensions. This includes modular design, and flexibility to incorporate new data types and processing techniques at a low cost if required. Ensuring that the CTP's infrastructure can adapt to evolving market requirements and regulatory changes will be crucial for its long-term success and relevance.

<ESMA\_QUESTION\_CP2\_57>

**Q58: Which is the minimum speed of dissemination you would consider appropriate for the CTP? Please distinguish between asset classes (and for the case of the equity CTP, between pre- and post-trade date).**

<ESMA\_QUESTION\_CP2\_58>

Our focus is exclusively on the Equity asset class.

From a consumer standpoint, given that the CTP is not intended to be tradable, different user types require varying levels of latency and jitter tolerance. Additionally, technology plays a crucial role in data dissemination, as lower-level encoding protocols typically achieve significantly better average latency compared to higher-level protocols. Fairness in dissemination is another important consideration, with certain transmission protocols (e.g., UDP Multicast) being uniquely capable of ensuring equitable distribution at the lowest possible latency.

It is also essential to clarify where the CTP measures its dissemination latency. In our view, the CTP cannot oversee all dissemination networks and should therefore be accountable for the latency that arises from consumption, aggregation, and dissemination at the last controlled NIC point.

Based on this, we propose that the minimum dissemination speed should be aligned with the type of data subscription, as outlined below:

• Binary Protocol Interface: Achieving an average latency in the two-digit microsecond range.

• Modern WebSocket Interface: Targeting an average latency in the single-digit millisecond range.

• Historical Data Availability: Ensuring a maximum file availability window (e.g., 15 minutes if each file represents 15 minutes of historical data).

<ESMA\_QUESTION\_CP2\_58>

**Q59: The proposed approach to data quality would reward additional commitments and measures that CTP applicants intend to put in place. Do you agree with this approach ? What additional commitments and measures would you consider appropriate?**

<ESMA\_QUESTION\_CP2\_59>

Yes. We are in agreement with the proposed approach.

PUE is the ratio of the total amount of energy used by a computer data centre facility to the energy delivered to computing equipment. This is a good metric to measure the sustainability of the datacentre that the CTP resides in, however it does not take into account the efficiency of the CTP solution employed. A more efficient CTP infrastructure utilising less hardware would therefore be more sustainable and should be favoured by ESMA.

This could lead to a situation where CTP applicants choose newer but less connected or practical datacentres with a lower CTP, instead of established datacentres which clients already have a local presence which could skew the numbers considerably.

<ESMA\_QUESTION\_CP2\_59>

**Q60: The proposed approach to modern interface and connectivity is grounded on the assessment of the interface technology in terms of reliability, scalability, low latency and security. Do you agree with this approach, or would you consider additional elements to be assessed?**

<ESMA\_QUESTION\_CP2\_60>

Yes. We are in agreement with the proposed approach.

<ESMA\_QUESTION\_CP2\_60>

**Q61: Do you agree with the proposed approach to record keeping, based on the provision of document supporting intended compliance?**

<ESMA\_QUESTION\_CP2\_61>

Yes. We are in agreement with the proposed approach.

<ESMA\_QUESTION\_CP2\_61>

**Q62: The proposed approach to resilience, business continuity and cyber risks is grounded in assessing mandatory DORA requirements applicable to CTPs as a first step (selection criterion), to then reward additional commitments and measures CTPs applicants intended to put in place to mitigate and address outages and cyber-risk . Do you agree with this approach? What additional commitments and measures would you consider appropriate?**

<ESMA\_QUESTION\_CP2\_62>

Yes. We are in agreement with the proposed approach.

<ESMA\_QUESTION\_CP2\_62>

**Q63: Do you agree with the use of the Power Utilisation Effectiveness (PUE) as the metric to assess the energy consumption of the CTP? If not, which alternative approach would you favour?**

<ESMA\_QUESTION\_CP2\_63>

Yes. We are in agreement with the proposed approach.

<ESMA\_QUESTION\_CP2\_63>

Annex II – Cost Benefit Analysis:

**Q64: What costs do you expect in order to comply with the proposed minimum requirements for the quality of transmission protocols? What benefits do you expect? Please indicate to what role (data contributor, CTP, or CT user) your response refers.**

<ESMA\_QUESTION\_CP2\_64>

We believe that there will be numerous costs and benefits experienced by the roles identified below:

Data Contributor Costs

Data contributors will have a variety of once off and recurring costs associated with the consolidated tape including:

• Once off costs for development of possible mandated feed API contribution mechanism if existing feeds are not allowed to be used for contributing to the tape.

• Ongoing costs for maintaining possible mandated feed API contribution mechanism if existing feeds are not allowed to be used for contributing to the tape.

• Additional once off and recurring capex costs for physical infrastructure for disseminating data to the tape in the form of servers, precision timing components, switches, routers, firewalls in dual locations.

• Additional recurring opex costs for space, power, cooling for physical infrastructure for disseminating data to the tape for the devices identified above in dual locations.

• Additional connectivity recurring opex costs for network connections for contributing data to the tape in dual locations if native feeds not allowed.

• Potential for additional carbon offset cost requirements associated with the above infrastructure.

• Potential latency increase associated with translation of binary data into non-native feed such as JSON if existing feeds not supported by the CTP.

• A broad estimate is that the development, quality assurance, project management, product management and other technical staffing requirements at each venue would amount to a range of €150,000 to €250,000 for EACH contributing trading venue to create a JSON specific feed adaptor for the CT.

• If a JSON format is mandated, this will also likely result in a significant time to market launch while all markets attempt to prioritise the technical teams to do this work in their current product roadmaps.

Data Contributor Benefits

Data contributor benefits will be realised via revenues distributed from the consolidated tape provider where trading associated with non-waiver functions gets compensated by the tape. Additionally, the potential for greater retail and institutional participation in EU equity trading as a result of lower data costs.

CTP Costs

• Cost of developing ingestion API adaptor for the purposes of receiving data from contributors if in a standardised format such as JSON gets adopted.

• Potential latency cost of translating new ingestion format data such as JSON into a traditional streaming feed for the purposes of easing wholesale market adoption of the tape.

• Cost of developing or paying for feed adaptors for the purposes of ingesting data if using native existing feeds.

• Potential cost of smaller markets with an opt-out capability to not contribute data to the CTP if development capability of building the mandated contribution model not feasible.

CTP Benefits

The main benefit to the CTP of the proposed format is a standardisation which reduces cost overhead of either explicity cost of paying for multiple 3rd party feed handlers vs paying explicitly for one third party feed handler or implicitly for one first party developed feed handler (in the event that JSON is adopted).

CT Users Benefits

We believe that the users of the CT should have the option to consume the data via 3 separate mechanisms depending on their preference and use case.

• JSON or similar web format – Benefit of being easy to integrate to for web based consumers such as retail financial websites and retail brokers. Latency less likely to be a critical consideration here so the potential latency cost associated with consuming in this format is unlikely to negatively impact adoption.

• Realtime streaming binary format – Benefit of easing wholesale industry adoption and (if ingestion is handled via existing binary feeds) the likeliest route to an overall low latency feed. Greater likelihood of faster adoption via traditional market data vendors leading to speeding up time to breakeven of CTP and ultimately to the benefit of contributing markets being able to receive revenue from the CT.

• Historical data format – Benefit of being able to ingest bulk data in some format compatible with database or other large dataset handling capability. Costs of being able to ingest potentially large amounts of data with associated data transmission costs.

<ESMA\_QUESTION\_CP2\_64>

**Q65: What costs do you expect in order to comply with the proposed data format for input and output data? What benefits do you expect? Please indicate to what role (data contributor, CTP, CT user) your response refers.**

<ESMA\_QUESTION\_CP2\_65>

As per our response to Q64 plus the following:

**Role: CT Users**

• The benefit of being able to ingest data in a standardised format for the purposes of non-advanced trading as well as non-trading whether advanced or not at a lower cost than individual subscriptions to each data contributor.

• The benefit of being able to consume a higher quality dataset of post-trade information than is currently available, particularly from OTC trading which is currently considered by many in the industry to be of low quality.

**Potential Costs:**

• System Integration: Implementing a new data format may require adjustments to existing systems used for best execution analysis. This could involve development efforts and potential system upgrades.

• Staff Training: Training staff on the new data format and its implications for best execution analysis could require time and resources.

• Data Quality Assessment: Evaluating the quality of the data provided in the standardised format for best execution purposes may require additional resources and expertise.

**Potential Benefits:**

• Improved Data Quality: Access to a standardised data format can enhance data quality and consistency, leading to more accurate and reliable best execution assessments.

• Enhanced Transparency: A standardised format can improve transparency, making it easier to compare prices and execution quality across different venues.

• Reduced Operational Risk: By streamlining data consumption and reducing errors, the new format can help mitigate operational risks associated with best execution compliance.

• Enhanced Best Execution Decision-Making: Access to high-quality, standardised data can improve the ability to make informed decisions about best execution.

<ESMA\_QUESTION\_CP2\_65>

**Q66: Do you expect the benefits from the proposed real time data transmission requirement for input data to outweigh the operational costs borne by data contributors?**

<ESMA\_QUESTION\_CP2\_66>

No. Under the existing assumptions of a mandated JSON contribution feed specification for contribution to the CT, the real time nature of the feed becomes less apparent due to the latency costs throughout the data generation chain incurred to translate it into this format keeping in mind that many trading venues will be handling data natively at the venue level in some kind of binary format. This means that any translation into a JSON format will incur a latency hit, as will any additional translation back into a binary format if the traditional consumers of data wish to adopt this as a feed ingestion mechanism similar to existing feed handlers the industry uses today.

It is possible that with a mandated contribution format in JSON, some existing markets which have an opt-out capability for contributing data to the CTP will be unable or unwilling to meet the technical demands of the requirement for input data formats in a timely or commercially reasonable manner. The overall benefit of the tape to the industry is to as much as possible be a golden source of truth for EU capital markets and this would be adversely affected by every incremental non-contributor.

<ESMA\_QUESTION\_CP2\_66>

**Q67: Do you think that the input and output data fields strike a balance between reporting burden for data contributors/CTPs and benefits for CT users?**

<ESMA\_QUESTION\_CP2\_67>

We agree that that there is a balance between reporting by data contributors/CTPs and CT users in the input and output data fields. However, the format and structure of these fields should be adapted appropriately for the protocols of collection and distribution i.e. a decimal value could be converted to an integer value for use in a binary protocol, and also for efficiency e.g. A binary protocol might use an integer value to identify an instrument which reduces the size of message and latency

<ESMA\_QUESTION\_CP2\_67>

**Q68: Do you think that the proposed data quality requirements are sufficient to achieve the CT’s objectives without generating excessive compliance burdens? Please explain.**

<ESMA\_QUESTION\_CP2\_68>

We believe that the proposed data quality requirements are mostly sufficient to achieve the CT’s objectives without generating excessive compliance burdens. The data quality requirements can be broadly broken down into 3 groups:

**Technical Checks Which Block Data Dissemination**

These are technical checks which identify the adherence with technical standards associated with contributing to the CTP and without which a message will not be disseminated to CT users such as completeness checks and format adherence checks. These are straightforward to implement programmatically and should be considered a basic requirement for the CT.

**Technical Checks Which Do Not Block Data Dissemination**

This is comprised of the Timeliness checks which is of critical importance if the CT is to be taken seriously and for the quality of data within the EU to continuously improve. Again, this is a relatively straightforward series of checks which can be implemented programmatically and should be considered a basic requirement for the CT.

**Business Checks Which Do Not Block Data Dissemination**

This will be a critically important function of the CTP, however existing wording is insufficient to achieve the CT’s objectives. As things stand, this is worded as to be for the identification of erroneous trades only within the input data. Although trades are in our view the most likely area to be contributed erroneously, in equities, pre-trade data should also be included in these checks given that the statistical analysis of business data will rely on also analysing pre-trade information.

<ESMA\_QUESTION\_CP2\_68>

**Q69: Which costs do you expect to implement the revenue distribution scheme? Please differentiate between one-off and on-going costs, between fixed and variable costs as well as between direct and indirect costs.**

<ESMA\_QUESTION\_CP2\_69>

A number of costs will be borne by the CTP to implement the revenue distribution scheme. The following areas are expected to incur costs: The CTP will need to have established external auditors for the purposes of identifying the costs of operating which should be recouped prior to revenue distribution.

The CTP will need to a method of calculating the revenue and apportionment available for distribution which includes:

• Any sanctions/penalties which should be offset against revenue (although as noted earlier, withholding of revenue distribution should not be the only mechanism by which to penalise poor contributors given that not all contributors will be compensated).

• Externally audited operating costs of the CTP which should be recouped prior to any revenue distribution.

• Apportionment of revenue available to contributing venues.

• Identification of contributing venues eligible for revenue distribution.

• Identification of non-waiver flow proportion from contributing venues eligible for revenue distribution.

• Banking costs associated with revenue distribution.

The CTP will also need a mechanism of collecting fees from users which might have the ability to differ significantly depending on the profile of the consuming clients and whether that client consumes the data directly from the CT or via another source such as a market data vendor.

The above will predominantly be handled via initial once off development costs to build the calculation model but will also be subject to ongoing costs to maintain this and also handle any ongoing banking and other administrative costs.

<ESMA\_QUESTION\_CP2\_69>

**Q70: Which costs do you expect to implement the suspension and the resumption of the revenue distribution scheme? Please differentiate between one-off and on-going costs, between fixed and variable costs as well as between direct and indirect costs.**

<ESMA\_QUESTION\_CP2\_70>

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<ESMA\_QUESTION\_CP2\_70>