



Reporting requirement on the identity of execution venues and the quality of execution following Directive 2014/65/EU (MIFID II) and Commission Delegated Regulation 2017/576 (“RTS 28”).

Reporting Period: 1 January 2017 – 31 December 2017

Below, quantitative and qualitative information is provided on the execution venues for all classes of financial instruments mentioned in Annex 1 of RTS 28. If the instrument is traded less than 250 times (<1 on average per business day) in the Reporting period, then no ranking is given on execution venues because that information is not considered meaningful nor representative of order execution arrangements. The tables show the name and venue identifier (MIC or LEI).

Note that Cardano only trades on behalf of professional clients and did not execute any client orders in Securities Finance Transactions (SFTs).

General remarks drawn from monitoring the quality of execution applicable to all classes of instruments:

Item	Analysis and conclusions
Links, conflicts of interest and common ownerships with respect to execution venues used to execute orders.	Cardano has no links, conflicts of interest or common ownerships with the venues used.
Factors that led to a change in the list of execution venues listed in the firm’s execution policy for the specific class of instrument.	There was no change in the list of execution venues in the execution policy during the Reporting Period.
Explanation of how order execution differs according to client categorisation, where the firm treats categories of clients differently and where it may affect the order execution arrangements.	Cardano executed orders in the Reporting Period for one category of clients only: Professional clients.
Explanation of whether other criteria were given precedence over immediate price and cost when executing retail client orders and how these other criteria were instrumental in delivering the best possible result in terms of the total consideration to the client.	Cardano executed orders in the Reporting Period for one category of clients only: Professional clients.
Explanation of how the investment firm has used output of a consolidated tape provider established under Article 65 of Directive 2014/65/EU (MIFID II).	Information published by an Approved Publication Arrangement was not used because it was not readily available in the Reporting Period.



Information on the top five execution venues:

Class of Instrument	Equity – Shares & Depositary Receipts: Tick size liquidity bands 5 and 6 (from 2000 trades per day)				
Notification if < 1 average trade per business day in the previous year	Yes				
Top five execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a % of total in that class	Proportion of orders executed as a % of total in that class	% of passive orders	% of aggressive orders	% of directed orders
Not Applicable					

Cardano did not execute orders in this class of instrument in the Reporting Period.

Class of Instrument	Equity – Shares & Depositary Receipts: Tick size liquidity bands 3 and 4 (from 80 to 1999 trades per day)				
Notification if < 1 average trade per business day in the previous year	Yes				
Top five execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a % of total in that class	Proportion of orders executed as a % of total in that class	% of passive orders	% of aggressive orders	% of directed orders
Not Applicable					

Cardano did not execute orders in this class of instrument in the Reporting Period.

Class of Instrument	Equity – Shares & Depositary Receipts: Tick size liquidity bands 1 and 2 (from 0 to 79 trades per day)				
Notification if < 1 average trade per business day in the previous year	Yes				
Top five execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a % of total in that class	Proportion of orders executed as a % of total in that class	% of passive orders	% of aggressive orders	% of directed orders
Not Applicable					

Cardano did not execute orders in this class of instrument in the Reporting Period.



Information on the top five execution venues:

Class of Instrument	Debt instruments: Bonds				
Notification if < 1 average trade per business day in the previous year	No				
Top five execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a % of total in that class	Proportion of orders executed as a % of total in that class	% of passive orders	% of aggressive orders	% of directed orders
Tradeweb Europe Ltd (2138001WXZQOPMPA3D50)	100%	100%	0%	100%	0%

Notes drawn from monitoring the quality of execution of Bonds:

Item	Analysis and conclusions
Relative importance given to price, costs, speed, likelihood of execution or other considerations.	When trading bonds, highest priority is given to achieving best price / lowest costs. Speed and likelihood of execution are important if the client gave a specific timeframe to an order.
Arrangements with any execution venues regarding payments made or received, discounts, rebates or non-monetary benefits received.	Cardano has a contract with Tradeweb for 5 users. We pay a monthly fee for three users. Two users are free of charge.
Explanation of how the investment firm has used any data or tools relating to the quality of execution.	Trade execution reports are used to analyze transaction costs in terms of achieved price relative to mid-market levels.



Information on the top five execution venues:

Class of Instrument	Interest rate derivatives: futures and options admitted to trading on a venue				
Notification if < 1 average trade per business day in the previous year	No				
Top five execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a % of total in that class	Proportion of orders executed as a % of total in that class	% of passive orders	% of aggressive orders	% of directed orders
JP Morgan Securities PLC (K6Q0W1PS1L1O4IQL9C32)	100%	100%	NA ¹	NA ¹	0%

¹Please note: Cardano sends orders to an entity for execution (broker), therefore the distinction between passive and aggressive orders is not relevant (see ESMA *Questions and Answers on MIFID II and MIFIR investor protection and intermediaries' topics*, answer on question 14 on Best Execution).

Notes drawn from monitoring the quality of execution of interest rate derivatives futures and options admitted to trading on a venue:

Item	Analysis and conclusions
Relative importance given to price, costs, speed, likelihood of execution or other considerations.	When trading interest rate futures, best price / lowest costs and likelihood of execution are equally important. Speed of execution is important if the client gave a specific timeframe to an order.
Arrangements with any execution venues regarding payments made or received, discounts, rebates or non-monetary benefits received.	Cardano has fixed fee arrangements per transaction with the venue of the interest rate derivatives futures.
Explanation of how Cardano has used any data or tools relating to the quality of execution.	Cardano checks the depth of the central limit order book and speed of execution during execution. Furthermore, we check the impact on pricing when executing (including algorithms) and how often orders are filled.



Information on the top five execution venues:

Class of Instrument	Interest rate derivatives: Swaps, forwards and other interest rate derivatives				
Notification if < 1 average trade per business day in the previous year	No				
Top five execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a % of total in that class	Proportion of orders executed as a % of total in that class	% of passive orders	% of aggressive orders	% of directed orders
JP Morgan Securities PLC (K6Q0W1PS1L1O4IQL9C32)	27%	27%	0%	100%	0%
Morgan Stanley & Co International PLC (4PQUHN3JPFQFNF3BB653)	15%	9%	0%	100%	0%
BNP Paribas (ROMUWSFPU8MPRO8K5P83)	13%	9%	0%	100%	0%
Coöperatieve Rabobank U.A. (trading as Rabobank) (DG3RU1DBUFHT4ZF9WN62)	5%	6%	0%	100%	0%
Goldman Sachs International PLC (W22LROWP2IHZNBB6K528)	3%	3%	0%	100%	0%

Swaptions are included as "other interest rate derivatives"

Notes drawn from monitoring the quality of execution of interest rate derivatives, swaps, forwards and other interest rate derivatives:

Item	Analysis and conclusions
Relative importance given to price, costs, speed, likelihood of execution or other considerations.	When trading interest rate swaps, forwards and other interest rate derivatives, best price / lowest costs and likelihood of execution are equally important. Speed of execution is important if the client gave a specific timeframe to an order.
Arrangements with any execution venues regarding payments made or received, discounts, rebates or non-monetary benefits received.	Cardano has no fee arrangements with the venues used. No discounts, rebates or non-monetary benefits were received.
Explanation of how Cardano has used any data or tools relating to the quality of execution.	On a quarterly basis the potential counterparties to interest rate derivatives are evaluated based on a wide set of criteria including hit ratio, pre- and post-trade service levels, speed and flexibility in contract negotiation.



Information on the top five execution venues:

Class of Instrument	Credit derivatives: Futures and options admitted to trading on a trading venue				
Notification if < 1 average trade per business day in the previous year	Yes				
Top five execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a % of total in that class	Proportion of orders executed as a % of total in that class	% of passive orders	% of aggressive orders	% of directed orders
Not Applicable					

Cardano did not execute orders in this class of instrument in the Reporting Period.

Class of Instrument	Credit derivatives: Other credit derivatives				
Notification if < 1 average trade per business day in the previous year	Yes				
Top five execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a % of total in that class	Proportion of orders executed as a % of total in that class	% of passive orders	% of aggressive orders	% of directed orders
Not Applicable					

Cardano did not execute orders in this class of instrument in the Reporting Period.

Class of Instrument	Currency derivatives: Futures and options admitted to trading on a trading venue				
Notification if < 1 average trade per business day in the previous year	Yes				
Top five execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a % of total in that class	Proportion of orders executed as a % of total in that class	% of passive orders	% of aggressive orders	% of directed orders
Not Applicable					

Cardano did not execute orders in this class of instrument in the Reporting Period.



Information on the top five execution venues:

Class of Instrument	Currency derivatives: Swaps, forwards and other currency derivatives				
Notification if < 1 average trade per business day in the previous year	No				
Top five execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a % of total in that class	Proportion of orders executed as a % of total in that class	% of passive orders	% of aggressive orders	% of directed orders
FX Alliance LLC (549300YCDYZNMZ3J0212)	100%	100%	0%	100%	0%

Notes drawn from monitoring the quality of execution of currency derivatives: swaps, forwards and other currency derivatives:

Item	Analysis and conclusions
Relative importance given to price, costs, speed, likelihood of execution or other considerations.	When trading currency derivatives, best price / lowest costs and likelihood of execution are equally important. Speed of execution is important if the client gave a specific timeframe to an order.
Arrangements with any execution venues regarding payments made or received, discounts, rebates or non-monetary benefits received.	Cardano has no fee arrangements with the venue used. No discounts, rebates or non-monetary benefits were received.
Explanation of how Cardano has used any data or tools relating to the quality of execution.	On a quarterly basis the potential counterparties to currency derivatives are evaluated based on a wide set of criteria including hit ratio, pre- and post-trade service levels, speed and flexibility in contract negotiation.



Information on the top five execution venues:

Class of Instrument	Structured finance instruments				
Notification if < 1 average trade per business day in the previous year	Yes				
Top five execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a % of total in that class	Proportion of orders executed as a % of total in that class	% of passive orders	% of aggressive orders	% of directed orders
Not Applicable					

Cardano did not execute orders in this class of instrument in the Reporting Period.



Information on the top five execution venues:

Class of Instrument	Equity derivatives: options and futures admitted to trading on a trading venue				
Notification if < 1 average trade per business day in the previous year	No				
Top five execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a % of total in that class	Proportion of orders executed as a % of total in that class	% of passive orders	% of aggressive orders	% of directed orders
JP Morgan Securities PLC (K6Q0W1PS1L1O4IQL9C32)	100%	100%	0%	100%	0%

The number of orders in futures determines the number of trades for the volume test.

Notes drawn from monitoring the quality of execution of equity derivatives options and futures admitted on a trading venue

Item	Analysis and conclusions
Relative importance given to price, costs, speed, likelihood of execution or other considerations.	When trading equity option and futures, best price / lowest costs and likelihood of execution are equally important. Speed of execution is important if the client gave a specific timeframe to an order.
Arrangements with any execution venues regarding payments made or received, discounts, rebates or non-monetary benefits received.	Cardano has fixed fee arrangements per transaction with the venue of the equity derivatives admitted to trading on a trading venue.
Explanation of how Cardano has used any data or tools relating to the quality of execution.	Cardano checks the depth of the central limit order book and speed of execution during execution. Furthermore, we check the impact on pricing when executing (including algorithms) and how often orders are filled.



Information on the top five execution venues:

Class of Instrument	Equity derivatives: Swaps and other equity derivatives				
Notification if < 1 average trade per business day in the previous year	No				
Top five execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a % of total in that class	Proportion of orders executed as a % of total in that class	% of passive orders	% of aggressive orders	% of directed orders
JP Morgan Securities PLC (K6Q0W1PS1L1O4IQL9C32)	31%	54%	0%	100%	0%
HSBC Bank PLC (MP6I5ZYBUEU3UXPYFY54)	16%	14%	0%	100%	0%
Citigroup Global Markets LTD (XKZZ2JZF41MRHTR1V493)	11%	12%	0%	100%	0%
UBS AG (BFM8T61CT2L1QCEMIK50)	10%	4%	0%	100%	0%
Merrill Lynch International (GGDZP1UYGU9STUHRDP48)	9%	3%	0%	100%	0%

Notes drawn from monitoring the quality of execution of equity derivatives: swaps and other derivatives.

Item	Analysis and conclusions
Relative importance given to price, costs, speed, likelihood of execution or other considerations.	When trading equity option and swaps, best price / lowest costs and likelihood of execution are equally important. Speed of execution is important if the client gave a specific timeframe to an order.
Arrangements with any execution venues regarding payments made or received, discounts, rebates or non-monetary benefits received.	Cardano has no fee arrangements with the venues used. No discounts, rebates or non-monetary benefits were received.
Explanation of how Cardano has used any data or tools relating to the quality of execution.	On a quarterly basis the potential counterparties to equity derivatives are evaluated based on a wide set of criteria including hit ratio, pre- and post-trade service levels, speed and flexibility in contract negotiation.



Information on the top five execution venues:

Class of Instrument	Securitized Derivatives: Warrants and Certificate Derivatives				
Notification if < 1 average trade per business day in the previous year	Yes				
Top five execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a % of total in that class	Proportion of orders executed as a % of total in that class	% of passive orders	% of aggressive orders	% of directed orders
Not Applicable					

Cardano did not execute orders in this class of instrument in the Reporting Period.

Class of Instrument	Securitized Derivatives: Other securitized derivatives				
Notification if < 1 average trade per business day in the previous year	Yes				
Top five execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a % of total in that class	Proportion of orders executed as a % of total in that class	% of passive orders	% of aggressive orders	% of directed orders
Not Applicable					

Cardano did not execute orders in this class of instrument in the Reporting Period.

Class of Instrument	Commodity derivatives: options and futures admitted to trading on a trading venue				
Notification if < 1 average trade per business day in the previous year	Yes				
Top five execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a % of total in that class	Proportion of orders executed as a % of total in that class	% of passive orders	% of aggressive orders	% of directed orders
Not Applicable					

Cardano did not execute orders in this class of instrument in the Reporting Period.



Information on the top five execution venues:

Class of Instrument	Commodity derivatives: Other commodity derivatives and emission allowances derivatives				
Notification if < 1 average trade per business day in the previous year	Yes				
Top five execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a % of total in that class	Proportion of orders executed as a % of total in that class	% of passive orders	% of aggressive orders	% of directed orders
Not Applicable					

Cardano did not execute orders in this class of instrument in the Reporting Period.

Class of Instrument	Exchange traded products				
Notification if < 1 average trade per business day in the previous year	Yes				
Top five execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a % of total in that class	Proportion of orders executed as a % of total in that class	% of passive orders	% of aggressive orders	% of directed orders
Not Applicable	NA	NA	NA	NA	NA

Notes on the quality of execution of Exchange traded products (ETF's).

Item	Analysis and conclusions
Relative importance given to price, costs, speed, likelihood of execution or other considerations.	When trading ETF's, best price / lowest costs and likelihood of execution are equally important. Speed of execution is important if the client gave a specific timeframe to an order.
Arrangements with any execution venues regarding payments made or received, discounts, rebates or non-monetary benefits received.	Cardano has no fee arrangements with the venues used. No discounts, rebates or non-monetary benefits were received.
Explanation of how Cardano has used any data or tools relating to the quality of execution.	On a quarterly basis the potential counterparties to ETF's are evaluated primarily based hit ratios.



Information on the top five execution venues:

Class of Instrument	Emission allowances				
Notification if < 1 average trade per business day in the previous year	Yes				
Top five execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a % of total in that class	Proportion of orders executed as a % of total in that class	% of passive orders	% of aggressive orders	% of directed orders
Not Applicable					

Cardano did not execute orders in this class of instrument in the Reporting Period.



Information on the top five execution venues:

Class of Instrument	Other instruments: Bond TRS				
Notification if < 1 average trade per business day in the previous year	No				
Top five execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a % of total in that class	Proportion of orders executed as a % of total in that class	% of passive orders	% of aggressive orders	% of directed orders
Lloyds Bank PLC (H7FNTJ4851HG0EXQ1Z70)	26%	33%	0%	100%	0%
HSBC Bank PLC (MP6I5ZYZBEU3UXPYFY54)	23%	21%	0%	100%	0%
Credit Suisse International (E58DKGMJYYYJLN8C3868)	15%	9%	0%	100%	0%
Citigroup Global Markets LTD (XKZZ2JZF41MRHTR1V493)	13%	9%	0%	100%	0%
Barclays Bank PLC (G5GSEF7VJP5I7OUK5573)	8%	10%	0%	100%	0%

Notes drawn from monitoring the quality of execution of Bond TRS.

Item	Analysis and conclusions
Relative importance given to price, costs, speed, likelihood of execution or other considerations.	When trading Bond TRS, best price / lowest costs and likelihood of execution are equally important. Speed of execution is important if the client gave a specific timeframe to an order.
Arrangements with any execution venues regarding payments made or received, discounts, rebates or non-monetary benefits received.	Cardano has no fee arrangements with the venues used. No discounts, rebates or non-monetary benefits were received.
Explanation of how Cardano has used any data or tools relating to the quality of execution.	On a quarterly basis the potential counterparties to Bond TRS are evaluated primarily based hit ratios.



Information on the top five execution venues:

Class of Instrument	Other instruments: Inflation linked swaps				
Notification if < 1 average trade per business day in the previous year	No				
Top five execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a % of total in that class	Proportion of orders executed as a % of total in that class	% of passive orders	% of aggressive orders	% of directed orders
JP Morgan Securities PLC (K6Q0W1PS1L1O4IQL9C32)	25%	27%	0%	100%	0%
Morgan Stanley & Co International PLC (4PQUHN3JPF GFNF3BB653)	13%	12%	0%	100%	0%
Goldman Sachs International PLC (W22LROWP2IHZNBB6K528)	7%	5%	0%	100%	0%
Barclays Bank PLC (G5GSEF7VJP5I7OUK5573)	5%	4%	0%	100%	0%
UBS AG (BFM8T61CT2L1QCCEMIK50)	3%	2%	0%	100%	0%

Notes drawn from monitoring the quality of execution of Inflation Linked Swaps.

Item	Analysis and conclusions
Relative importance given to price, costs, speed, likelihood of execution or other considerations.	When trading Inflation Linked Swaps, best price / lowest costs and likelihood of execution are equally important. Speed of execution is important if the client gave a specific timeframe to an order.
Arrangements with any execution venues regarding payments made or received, discounts, rebates or non-monetary benefits received.	Cardano has no fee arrangements with the venues used. No discounts, rebates or non-monetary benefits were received.
Explanation of how Cardano has used any data or tools relating to the quality of execution.	On a quarterly basis the potential counterparties to Inflation Linked Swaps are evaluated based on a wide set of criteria including hit ratio, pre- and post-trade service levels, speed and flexibility in contract negotiation.