Cboe Europe Equities

Large in Scale Service (LIS)

Service Description

Powered by: BIDS TRADING

Version 1.7

July 2021

Contents

Introduction

This document sets out the service being offered by Cboe Europe Equities ("**Cboe**"), licensing BIDS L.P. ("**BIDS**") software, to offer a Large in Scale IOI negotiation service, which will result in a trade execution on the Cboe RIE, hereafter referred to as "**Cboe LIS**". This document ("**Service Description**") should be used by Users and Participants of Cboe LIS.

1. Regulation

Cboe is a Recognised Investment Exchange ("RIE") regulated by the Financial Conduct Authority in the UK and by the Netherlands Authority for the Financial Markets

Cboe is also recognised as a foreign stock exchange by FINMA in Switzerland, which allows Swiss securities dealers to be a Participant of its market.

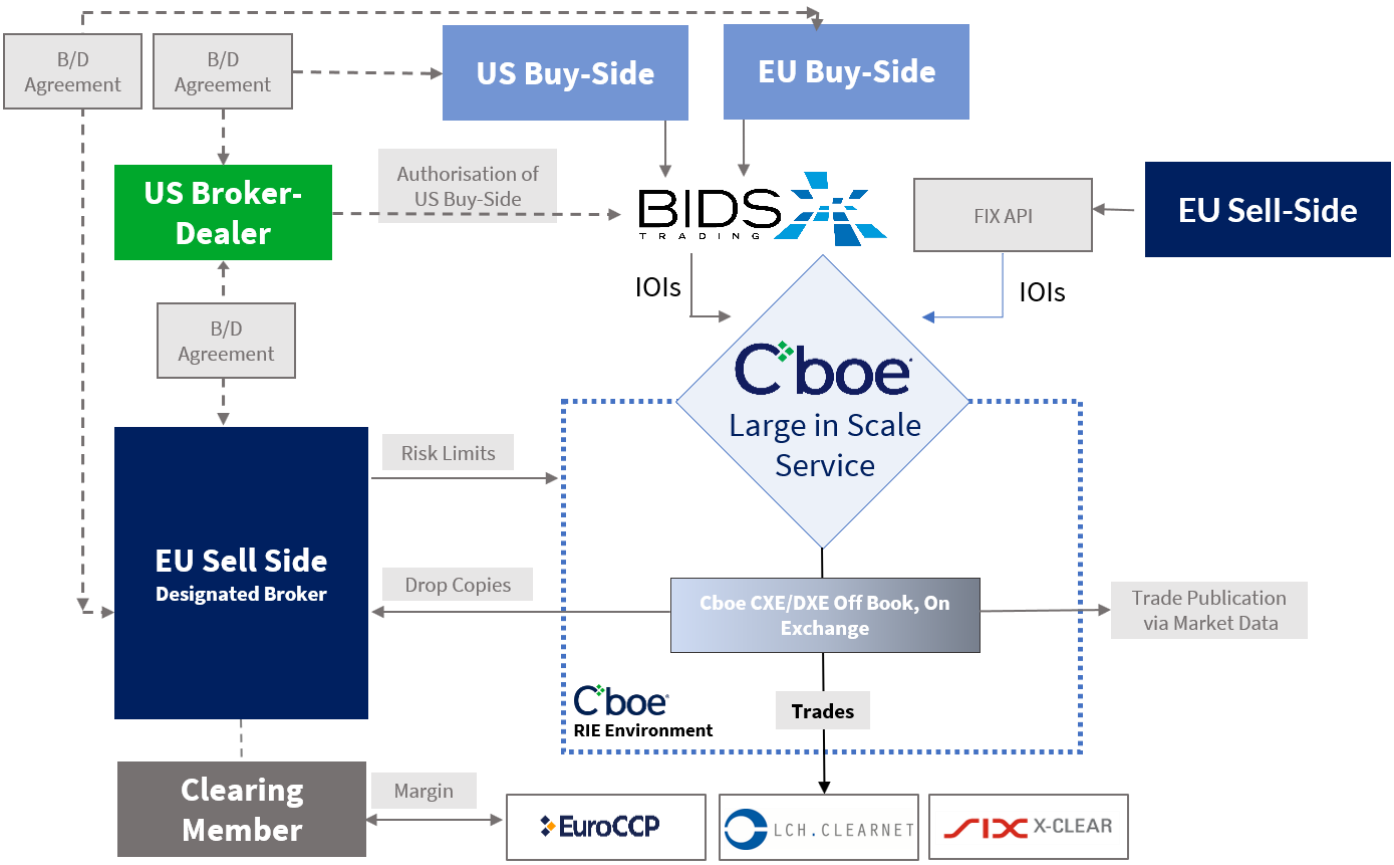
2. Definitions

Term	Definition
Actionable IOI	An actionable Indication of Interest, resulting from a decision to firm-up to trade
Buy side firm (LIS User)	An investment firm who has an agreement with, and has been approved by, a Designated Broker to use Cboe LIS
Central Counterparty (CCP)	The entity or entities appointed by Cboe to act as central counterparty to transactions executed on the Cboe Markets and to provide clearing services
Consolidated European Market	For any security any relevant Listing Market or MTF as defined by Cboe
CFD	Contract For Difference or Swap
Clearing Member	A firm that is a member of a Central Counterparty with an agreement to guarantee and clear trades
Designated Broker	A Cboe Participant who has an agreement with a buy side firm to offer execution and clearing services on Cboe LIS. The relationship between the Designated Broker and the buy side firm may be intermediated by an Introducing Broker
Direct LIS Broker	A Cboe Participant who is using the Service to submit IOIs and receive the corresponding trades in their own name

Direct IOI Broker	A Designated Broker Participant who is enabled to send Direct IOIs to their clients
EBBO	The best displayed Buy Order Price and the best displayed Sell Order Price available from the Consolidated European Market
Directed IOI	An Indication of Interest submitted to a sub-set of LIS Users by a Direct IOI Broker
IOI	Indication of Interest
Introducing Broker	A Broker Dealer that has a relationship with a buy-side firm and a relationship with a European Designated Broker. The Introducing Broker Dealer can be the same legal entity as the Designated Broker
LIS	Large In Scale Transaction
Non-actionable IOI	Instructions entered into Cboe LIS on a conditional basis
Participant	A Participant of Cboe Europe Equities

3. Workflow

1. IOIs are submitted to the Cboe LIS system to identify potential matches.
2. The platform allows interaction with buy-side and sell-side IOIs, once a match is identified Cboe LIS will send an invitation to firm-up to both parties involved.
3. On firm-up a Designated Broker is selected by the user to execute the transaction and clear the resulting trade.
4. The trade is executed on-Exchange through the Cboe Europe RIE.
5. The trade is sent to clearing under Cboe' interoperable model and reported to the Designated Broker via a drop copy.
6. The trade is reported through the Cboe CXE market data feed as an off-book, on- Exchange trade in real time.



4. Market Model

The Cboe LIS platform supports submission of non-actionable Indication of Interests (IOI) and allows the user to "firm-up" their IOI if a match is identified (4.4. Cboe LIS Matching). At the point of "firm up" the non-actionable IOI becomes an actionable IOI.

4.1. IOI Parameters

"IOIs" represent volume which is submitted to the system but is not committed to the Cboe LIS Trading platform. An IOI may be active in another system and Cboe LIS System until the IOI is replaced with a firm-up. Within the Cboe LIS system an IOI will not trade until a trade instruction is received in the form of a firm-up. This allows a user to deploy their liquidity in multiple ways. The table below outlines some key parameters available to users when submitting IOIs and firm-ups to the Cboe LIS system using FIX connectivity. For the complete list of parameters please refer to the Cboe LIS FIX Specification:

Tag	Field Name	Description
8007	BIDSFilterLevel	Allows participant to filter out interactions with users based on historical response rates using the filter levels; 0=Normal 1=Aggressive 2=Conservative
8008	BIDSTradePriority	This tag allows the user to specify the algorithm they would like Cboe LIS to use to determine the best match for their submitted IOIs; 0=Price 1=Volume
8065	BIDSFirmUpMode	A qualifier indicating how an IOI will be "firmed-up". Please contact Cboe LIS Support regarding the use of this tag.
110	MinQty	The MinQty to be executed. This tag can be sent on inbound messages for NewOrderSingle on IOI entry and NewOrderSingle on firm-up messages to change the MinQty accepted. Invitations will only be sent to a user if the contra IOI meets both this minimum quantity value and the symbol's LIS threshold, along with the other IOI matching requirements.

Time in Force Values

Participants may specify one of the following time in force values on their IOIs:

Time in Force Value	ExpireTime Required	Comments
IOC – immediate-or-cancel	Optional	If ExpireTime is supplied, the value will be interpreted as a delay in milliseconds by which to persist the IOI for a potential match. Cboe LIS have a system default of 300ms
Day Order	No	Will persist on Cboe LIS until partial or full execution is received. Will persist on Cboe LIS until 16:30 UK time.
GTD – Good till Date	Yes	Will persist on Cboe LIS until partial or full execution is received, or ExpireTime is reached
EnC – Execute and Cancel	Optional	Will persist on Cboe LIS until partial or full execution is received, or ExpireTime, if provided, is reached. If ExpireTime is not provided, will persist on Cboe LIS until 16:30 UK time

4.2. Trade Types

Limit
Cboe LIS accepts IOI messages with a Limit Price.

Market
Cboe LIS accepts IOI messages without a limit price to trade at the Market Price. The Market Price used will be no worse than the far side of the EBBO. Cboe LIS allows IOIs to peg to the EBBO in three ways:

- Primary – pegs to the same side of the EBBO as the IOI
- Midpoint – pegs to the midpoint of the EBBO
- Market – pegs to the far side of the EBBO

Actionable IOI
The resulting system generated message indicating the user's desire to firm-up.

4.3. Cboe LIS Matching

If an IOI enters Cboe LIS and there is an IOI on the other side that matches based on the conditions below, then the traders will be invited to "firm-up" their IOIs. The invitation occurs if the following conditions are met:

- The prices match or cross
- The symbol is available for matching, i.e. not Halted
- The IOI meets the minimum volume requirements of the contra and vice versa
- The match size is greater than or equal to the LIS value
- The BIDS Scorecard℠ for the user must meet or exceed the BIDS Filter℠ setting for the contra and vice versa

The users have the opportunity to "firm up" their IOIs so that a trade may occur. This invitation does not last indefinitely as the system imposes a time-out (4.6. Invitation Time Limits). Therefore if a user takes too long to "firm-up", the invitation may have expired, or the contra "firm-up" may have expired or be manually cancelled. Time is of the essence when "firming up".

Matching EBBO protection is always enabled for matched trades. Two firm-ups will automatically trade under the following conditions:

- The symbol is available for execution i.e. not Halted
- The prices match or cross at or within the EBBO
- The volume on the firm-up meets or exceeds the minimum volume on the contra firm-up and vice versa
- The trade size is greater than or equal to the LIS Value for the symbol

If all of these conditions are met, then a trade is generated at a price equal to or closest to the EBBO midpoint using the maximum volume available. Once an IOI is changed to a firm-up and provided the above matching conditions are met, an execution will occur as a result of a firm-up and be sent to Cboe CXE for acceptance as an ETR Trade Capture message. Please note that only one IOI from each side will match.

4.4. Invitation and Matching Priority

A "fill priority" governs the order in which matches of IOIs will result in invitations. Traders may select "volume/price/time" or "price/volume/time" priorities (4.1 IOI Priorities tag 8008). In the event multiple counterparties may be matched or engaged in invitations by the system, the priority setting of the aggressive IOI will govern the ordering in which the counterparty IOIs are considered (invitation or trade).

Existing IOIs that are already entered into Cboe LIS are called "passive" IOIs. A new IOI entering the Cboe LIS trading system that meets the matching criteria against one or more of those passive IOIs is called an "aggressive" IOI. The fill priority is determined by the aggressive IOI. If the fill priority of the aggressive IOI is "price/volume/time", passive IOIs are matched in sequence according to the most aggressive Price prioritisation, best price, and then volume and time (if two or more IOIs have the same price). If the fill priority of the aggressive IOI is "volume/price/time" then the passive IOIs are matched in sequence according to highest volume, and then price and time (if two or more IOIs have the same volume). In all instances the system will match as close to the EBBO mid-price as possible.

In each case, the fill priorities of the passive IOIs are not taken into consideration.

4.4.1. Price Prioritisation

Price prioritisation is given by the IOI type resulting in the following indicative tradeable price within the EBBO:

- Limit IOIs better than the mid, get a price protection of the mid-price
- Market pegs get a Price prioritisation of the far side of the EBBO
- Market IOIs get a price protection of mid

If the Price prioritisation value is the same, the limit price of the IOI is taken as the tie breaker when determining the invitation priority. Market IOIs will receive priority, followed by limit IOIs sequenced by their limit price.

4.5. Invitation Time Limits

Automated trading systems will have a system level imposed time limit of 1 (one) seconds to respond to an invitation to firm-up before the Invitation is cancelled.

Manual users will have 30 (thirty) seconds to respond to a firm-up invitation before it times out and is cancelled.

Invitations which are issued and are subject to an "auto-firm" response via the users vendor connectivity will be subject to a 3 (three) second time limit before the invitation is cancelled.

4.6. Matching Conditions

Buyside users will have self-match prevention enforced by the system.

Sellside users will also be subjected to self-match prevention by the system. However, the prevention is limited to principal to principal trades. If one or both IOIs are agency or riskless principal in nature, invitation and trading is allowed.

4.7. Market Conditions

Invitations will not be issued nor will trading be permitted for IOIs under the following conditions:

- The spread is considered too wide by percentage and has reached the upper percentage (20%), with invitations and matching not being resumed until spreads are below the lower threshold (15%)
- A one sided EBBO
- Crossed EBBO
- Locked EBBO, and one or both traders are configured to not trade in locked markets
- The symbol is halted for regulatory reasons

4.8. Automatic Cancellation

In the Cboe LIS Trading platform, IOI and firm-up messages will be automatically cancelled under specific circumstances:

Condition	What is Cancelled
Loss of connection for FIX Session	All IOIs and/or firm-ups received via the lost connection will be cancelled by the Cboe LIS Trading platform.
Regulatory halt for a symbol	All IOIs/firm-ups for that symbol are cancelled

Condition	What is Cancelled
User, desk, or firm being suspended	All remaining IOIs/firm-ups for that firm, desk, or user, no matter what the source are cancelled
Introducing/Designated Broker revokes Broker relationship	All IOIs/firm-ups for that firm using that Introducing/Designated Broker are cancelled

4.9. Firm-Up

When firming up via FIX a user must instruct the actionable IOI with the invitation reference.

To enhance the chance of two actionable IOIs (instructed via FIX) matching, Cboe LIS impose a system default time of 300 milliseconds on all IOCs received. This can be configured on an IOI by IOI message by the user through the use of FIX tag (TimeInForce) and tag 126 (ExpireTime), or it can be defaulted on the users port.

5. Directed IOIs

Leveraging the existing Cboe LIS / BIDS infrastructure, Participants who are acting in a Designated Broker capacity to LIS Users will be able to (upon authorisation) submit Directed IOIs to those clients. Cboe UK (LISX) only whilst authorisation is being granted for Cboe NL (LISZ).

5.1. On-boarding

Designated Brokers

- Update the Cboe LIS addendum to be recognised as a Directed IOI Broker
- Certify with Cboe Trade Desk for the submission of Directed IOIs
- Order a Directed IOI LIS port

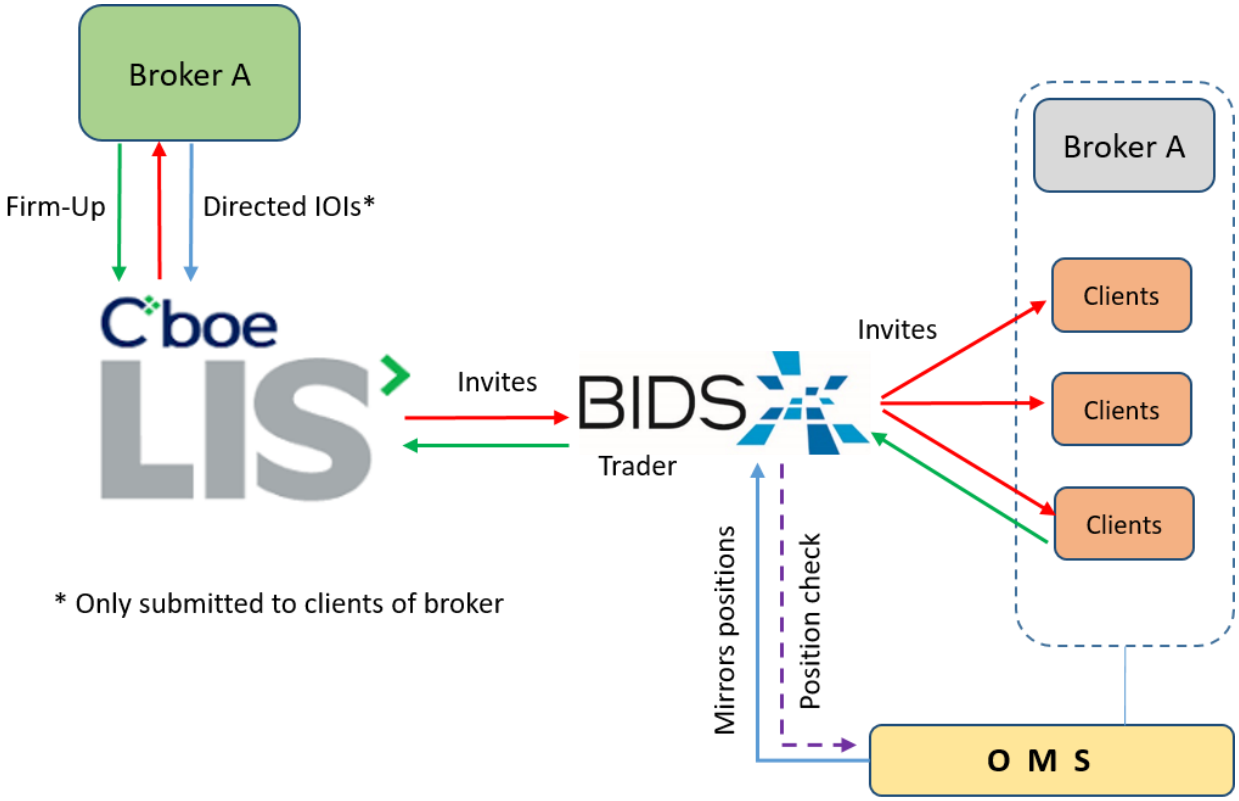
LIS Users

- Speak to your Cboe/BIDS representative to ensure you're on the correct version of BIDS Trader
- Opt-in to the service in BIDS Trader
- Apply any appropriate filters to the type of liquidity displayed

5.2. Workflow

Directed IOIs are only submitted to LIS Users who are a client of the Designated Broker, who have opted into the service, and who have a contra position mirrored into Cboe LIS. Where an IOI meets this criteria the LIS User will be presented with a Directed IOI invitation, naming the broker and the terms of the invitation.

- The Directed IOI Broker submitting the IOI will also act as the Designated Broker
- LIS Users can filter on which brokers to receive Directed IOIs from and what type of liquidity (Client, House etc)
- Active invitations in Cboe LIS will take priority over a Directed IOI invitation



6. Scorecard & Filtering

Cboe LIS offers the unique BIDS Scorecards℠ and BIDS Filters℠ to provide protection against potential information leakage. Every user using Cboe LIS has a BIDS Scorecards℠ which is based on their past trading behaviour. The BIDS powered algorithms profile users to determine how a potential invitee is likely to respond, based on past behaviour and current conditions. This promotes interaction with peers, i.e. good users are most often invited by other good users.

BIDS Filters℠ allows users to set their own parameters that best suit their trading approach. The parameters set by a user determine appropriate potential counterparties for trading interactions using the BIDS Scorecards℠ and other selection criteria. The BIDS Filters℠ feature allows for the selection of parameters for determining other users with which the user would like to trade based on those other users historical trading behaviour on Cboe LIS. Consequently, an IOI may not interact with some or all of the IOIs of other users in Cboe LIS. BIDS Scorecards℠ measures an individual users performance on IOIs by user ID, not by firm. Each user has the ability to apply a filter to their IOIs (Cboe LIS FIX Specification tag 8007).

Cboe LIS will provide additional information and training to any Cboe LIS user regarding how BIDS Scorecards℠ and BIDS Filters℠ can be used and how they help users manage and protect IOI information.

The algorithms behind BIDS Scorecards℠ and BIDS Filters℠ have the following automated functionality:

- Prevent information disclosure to a contra in situations where they are unlikely to firm-up
- Reward good behaviour with good results (i.e. increased % trade rate)
- A combination of static and dynamic scorecards allows for a user's score to be built up over time whilst allowing the flexibility for intra-day stock specific score improvements
- Blocking failed firm-ups at a user level

6.1. Scorecards

Static Scorecard: Measures a user's long-term performance in responding to invitations. A user who responds to invitations frequently, with the same terms of their IOIs, will have a high score. A user who consistently ignores invitations to firm-up, or responds with terms less favourable than their IOI will have a low score. Habitual poor responders fall into the "low bucket" performance category and can be systemically blocked from inviting some IOIs from better performers. Poor performers miss out on trades so are incentivised to improve.

Dynamic Scorecard: Measures a user's short-term performance in a certain symbol, on a particular day. Users can be blocked from inviting certain IOIs based on their performance in certain symbols.

Blocking: Cboe LIS "Blocking" works within the scorecard functionality by protecting users from other users failing against them on a consistent basis.

6.2. Filters

Filters offer the ability to filter out users with poor historical response rates. Each user has the ability to apply a filter to their IOI via the settings in their EMS settings or via FIX (tag 8007).

- Users are configured to a "normal" filter as a default to interact with the majority of flow in the Cboe LIS, except for those with the worst performance by scorecard
- Users can set the filter to “conservative” to exclude additional users
- Users have the ability to set their filter to “aggressive” on an IOI-by-IOI basis or as a default setting to interact with all flow in the system

6.3. Failed Firm-Ups

There are a number of reasons why failed firm ups occur:

- IOIs allow the position to be represented in multiple venues. If a user finds a match in more than one venue, they have to choose one venue to trade, which results in a failed firm up at other venues.
- The EBBO moved
- The available volume has been traded away elsewhere and the IOI has not yet been updated to reflect this, due to natural latency
- Traders make rational trading decisions: just because a match is found, conditions are not always optimal for both parties (e.g. a stock at the low of the day may be great for the buyer but terrible for the seller; or the market may have just started trending favourably for one side)
- Both users firm up but one cancels the firm-up before the other has had a chance to respond and hence the two actionable IOIs do not cross. (Cboe has a default resting time of 300ms to alleviate this)

6.4. Performance Monitoring in Cboe LIS

- The scorecard and filter algorithms are reviewed quarterly by the Cboe LIS Interaction Committee and adjusted as appropriate
- Cboe LIS regularly reviews drift analysis of interactions and large price movements in the market relative to Cboe LIS trades for abnormalities
- We recommend that users conduct their own drift analysis as they have a more complete market picture of what was done with the IOI in addition to the BIDS interaction and thus can get a more complete analysis

7. Risk Management

Cboe offers Participants access to the Cboe LIS Risk Management tool via the BIDS Admin Client with the ability to set various constraints on actionable IOIs for pre-trade protection. Controls can be applied at an Introducing Broker to Firm level, at a Designated Broker to Introducing Broker level or at overall level for the Designated Broker.

Value based risk settings are multi-currency, supporting the following currencies:

GBP, USD, EUR, CHF, SEK, NOK, DKK.

However Participants will only be permitted to apply one currency for all value settings and not different currencies across different value settings. All conversions will be based on the ECB closing mid-point rate from the previous market close.

For further details please refer to the Cboe LIS Risk Management Specification.

7.1. Restricted Stock Lists

The Cboe LIS platform allows participants to apply Restricted Stock Lists (RSLs) in two ways.

1. Participants can upload their RSL via their secure Cboe website access to apply to all designated broker relationships. This can be done via the "CXE" access and applies to both LISX and LISZ. Uploads via DXE are not supported.

2. Participants can manually input via the BIDS Admin portal and apply the RSL an individual client level

8. Drop Copy Messaging

The following steps describe how a trade is identified by a Trade ID as it flows through the service and how it can then be reconciled against DROP feeds and information from the CCP:

- When a firm-up occurs, the resultant trade in Cboe LIS is uniquely identified by the BIDSTradeID (tag 8026) on the IOI Filled message.

- If a DROP is to be obtained from Cboe CXE/DXE the trade will be communicated via a Trade Capture Report. The value for the BIDSTradeID (tag 8026) above will be the same as the TradeReportRefID (tag 572) of the Trade Capture Report. The TradeID (tag 1003) on the Trade Capture Report is the identifier allocated by Cboe that can be seen on the Cboe (CXE) market data feed.

- As per existing Cboe Trade Reporting behaviour, the TradeID is sent to CCPs for reconciliation purposes.

8.1. Reject Cboe LIS IOIs on Cboe CXE/DXE Drop Copy disconnection

Based on the information above the Designated Broker may opt in to receive a real time feed of trade executions from Cboe CXE/DXE in the form of a drop copy. Cboe CXE/DXE has the added functionality available for Designated Brokers to suspend firm-up and resulting trade executions in Cboe LIS for all clients should the associated Cboe

CXE/DXE drop copy lose connectivity or otherwise become disconnected. For further details on this functionality please contact the Cboe LIS Support Team.

9. Connectivity to Cboe LIS and Cboe CXE/DXE

Users of the Cboe LIS service and Designated Brokers supporting the execution and settlement of Cboe LIS trades have the following connectivity options:

Connectivity options to the Cboe LIS Service:

- Via their proprietary OMS System utilizing FIX connectivity
- Using an Execution Management System (EMS) which integrates with your existing OMS system
- Direct FIX connectivity

Connectivity to Cboe CXE/DXE for Designated Brokers / European Introducing Broker

- Trade Data File available via the existing Cboe Web GUI
- Drop Copy (ODROP port) is available from the Cboe CXE/DXE books. Please see the Cboe LIS FIX specification for further information
- Real-time drop feed from Cboe LIS.
- EOD trade data downloads from Cboe LIS

10. Market Configuration

10.1. Operating Hours & Calendar

Subject to the Cboe trading calendar, the services are available from 08.00 to 16:30 UK time with gateways available for connectivity from around 07.00 UK time.

IOIs may be submitted from 07:30 UK time to the Cboe LIS system, however, matching and invitations will not occur until market open at 08:00 UK time.

10.2. Market States

Market State	Scheduled Time	Web & Gateway Login	Order Actions	Executions
Restricted	12:01am– 05:45	No	No	No
Suspended	05:45 – 07:30	Yes	Test Firms Only	Test Symbols Only
Initial	07:30 – 08:00	Yes	Yes	Test Symbols Only
Open	08:00 – 16:30	Yes	Yes	Yes
Closed	16:30 – 18:00	Yes	No	No

Restricted	18:00 – 12:00am	No	No	No

The Services will be offered in accordance with the Cboe trading calendar, which can be viewed here: http://www.markets.cboe.com/support/hours/

10.3. Maximum Allowed Quantity

The maximum supported quantity is 99,999,999,999 units/shares.

10.4. Large In Scale (LIS) Values

The Cboe LIS platform will enforce the minimum LIS sizes on IOI submission and at firm-up. This is effected through the Cboe LIS software converting LIS values to a share equivalent using the ESMA/FCA end of year rate.

Cboe LIS receives the LIS threshold values for a symbol daily from the Cboe CXE symbol file. This value is expressed in the symbol's currency (e.g. in GBX for VODl). Effective 23rd April 2021 Cboe UK LIS (LISX) will process LIS values from the Cboe CXE symbol file (feed by the FCA FITRS data), and Cboe NL LIS (LISZ) will use the Cboe NL DXE symbol file. Please note that this may result in the same symbol having different LIS values on LISX and LISZ.

When deciding whether to accept or reject an IOI, Cboe LIS calculates the IOIs value by multiplying the current EBBO midpoint and the IOI volume on the respective LISX / LISZ platform. If the IOI value is below the symbol's LIS threshold (with a tolerance currently configured to 1% of the threshold), the IOI will be rejected.

When deciding whether two IOIs can invite or trade with each other, Cboe LIS calculates the invite/trade value by multiplying the trade price and the invite/firm-up volume. As an IOI volume and price may change between submission and the firm-up the calculation takes place twice. If at any point (IOI submission or firm-up) the IOI value is below the symbols LIS threshold the IOI will be rejected or the trade will not occur.

Table 1

Orders large in scale compared with normal market size for shares and depositary receipts

Average daily turnover (ADT) in EUR	ADT < 50 000	50 000 ≤ ADT < 100 000	100 000 ≤ ADT < 500 000	500 000 ≤ ADT < 1 000 000	1 000 000 ≤ ADT < 5 000 000	5 000 000 ≤ ADT < 25 000 000	25 000 000 ≤ ADT < 50 000 000	50 000 000 ≤ ADT < 100 000 000	ADT ≥ 100 000 000
Minimum size of orders qualifying as large in scale compared with normal market size in EUR	15 000	30 000	60 000	100 000	200 000	300 000	400 000	500 000	650 000

If a symbol doesn't have an ADT or LIS value, Cboe will apply a default ADT which in turn will generate the appropriate LIS value for the symbol.

Where Cboe has not received an LIS value from ESMA/FCA (or the appropriate regulator), it will apply the minimum LIS value through implementing the minimum ADT banding value. For example, using the table above this would be <€50,000 ADT and an LIS of €15,000.

10.5. LIS Stubs

A partial trade execution resulting in an IOI with a remaining quantity less than the minimum LIS size will result in the IOI being cancelled back to the Participant. Resubmissions to Cboe LIS must be greater than or equal to the

symbols LIS value. Effective 23rd April 2021, LIS stubs in LISZ may be eligible to submit into LISX due to potentially different LIS values in the LISZ and LISX venues.

Users interacting via the BIDS Trader application or other manual interfaces will have the option to opt-in or opt-out in order to be included or excluded from trading at UK LIS levels. If Users do choose to opt in to this new functionality, then the remaining quantity that falls below the LISZ LIS value will move to LISX, rather than being cancelled back.

10.6. Minimum Lot Size

Subject to the above LIS values. The minimum lot size is 1 unit/share for all services, fractions are not supported.

10.7. Capacity and Account Values

10.7.1. Capacity

The available capacity type in Cboe LIS are: Agency, Principal and Riskless Principal

The Designated Broker is responsible for mandating the capacity they are accepting the firm-up onto the Cboe platform through to clearing. As part of the Designated Broker/Buy Side client set-up, Cboe will request the Designated Broker to instruct which capacity trades should be accepted in. This can be defaulted for all relationships or applied on a client by client basis.

Set-up options

For IOIs sent by Direct LIS Brokers:

- Direct LIS Brokers are responsible for denoting individual IOIs with appropriate capacity information

For IOIs coming from Buy Side users via a Designated Broker:

- The default capacity is Riskless Principal (MTCH)
- Designated Brokers may adjust the default capacity to Agency or Principal on a per-client basis
- Trades flagged as CFD or Swap give-ups will have the same capacity as non-flagged trades

10.7.2. Short Selling

Where notified by the user of the service, Cboe LIS will carry information on whether the trade is the result of a short sale or if the user is short sale exempt. This information will be provided to the Designated Broker on their drop feed as an optional tag.

10.7.3. Account

Cboe will default the account to House on messages sent to the CCP unless otherwise agreed. The LIS trade resulting from the firm-up and submitted from the Cboe LIS software through the Cboe Europe CXE/DXE book will be flagged as “House” unless otherwise agreed.

10.8. Tick Sizes

Cboe LIS minimum tick increments are available on the website. IOI limit prices must be multiples of the appropriate tick increment, or will be rejected. Trades will occur at a level that matches the tick increment or half tick increment for the symbol.

10.9. Trade Reporting

Trades will be published in real time by Cboe, with trade deferrals not supported. The following MMT values will be attributed to the trade: off book, on-exchange, plain vanilla

Cboe will populate trades with a "Sub-MIC" (of the CXE/DXE book) code of **LISX** or **LISZ** LastMkt (tag 30) of the Designated Brokers drop copy feed and on market data. LastMkt (tag 30) is available on the drop copy as an additional tag and should be requested by the Designated Broker as part of the on-boarding process.

10.9.1. IOIA

Cboe LIS trades will be displayed on the Bloomberg IOIA screen where both parties have agreed to their trade(s) being published to this page. Where trades are published they will be referenced as a cross and attributed to LISX/LISZ and not to the counterparties who have executed the trade.

Cboe will not perform any transaction reporting on behalf of Participants and is unable to advise Participants on their transaction reporting obligations. Participants should therefore liaise with the appropriate regulatory authorities to ensure they meet their reporting obligations.

11. Surveillance

11.1. Trade Busts

All trade busts/breaks are governed by the Cboe Europe Rule Book

12. Post Trade Clearing Process

12.1. Clearing

All trades are sent to the Participant or Designated Brokers CCP in real-time for novation via Cboe CXE, where the CCP will allocate to the Participant/Designated Brokers clearing account and net down positions accordingly.

No additional clearing authority paperwork is required for the Cboe LIS service.

12.2. Settlement

All trades processed by Cboe and subsequently sent for settlement through the CCPs will be for the standard settlement cycle in the domestic Central Securities Depository (CSD) of that market. Designated Brokers and Direct LIS users will settle trades under their existing CCP settlement arrangements. Designated Brokers will settle the trades with their LIS User clients on a bilateral basis (where required).

13. Trade Reconciliation

Cboe Europe will mandate the use of a separate Trading Identifier to distinguish the flow received via Cboe LIS for existing members of Cboe LIS. Designated Brokers and Direct LIS Brokers will be allocated these codes on completing the appropriate paperwork.

Participants (Designated Brokers) are given the following reconciliation options:

- Real-time drop copy of trades available via an ODROP from Cboe Europe (CXE/DXE) (strongly recommended)
- Intra-day trade data downloads accessible via the Cboe Europe web portal Trade Data File
- End of Day trade data downloads accessible via the Cboe Europe web portal Trade Data File
- Real-time drop feed from Cboe LISX/LISZ
- EOD trade data downloads from Cboe LIS

14. Contacts

On-boarding team
CboeLISSupport@cboe.com
+44 (0) 207 012 8901

Sales
SalesEurope@cboe.com
+44 (0) 207 012 8906

Revision History

Date	Version	Change Notes
20th October 2016	1.0	Initial document
8th December 2016	1.1	Updated BIDS logo , definitions
19th October 2017	1.2	Updated Cboe logo and definitions
14th June 2018	1.3	Updated firm-up times and parameters, reference to trade publication to IOIA
16th August 2019	1.4	Clarification on the ADT and LIS values for symbols
September 2020	1.5	Update to clarify the ESMA FX rate used, regulation section and firm-up time for auto firm-up

April 2021	1.6	New determination of LIS values for EU symbols in LISX. Updated references to include LISZ for Cboe NL LIS
July 2021	1.7	New section to detail Directed IOIs