POSIT MTF

Dark Segment

FIX and Connectivity Guidance

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OVERVIEW

About this document

This document (the "FIX & Connectivity Guidance") provides all the necessary information needed to interface with POSIT MTF using the FIX protocol. Participants should use FIX version 4.2, however several tags contained within this document have been retrofitted to FIX 4.2 from later versions or based on recommendations from the FIX Trading Community, to support MiFID II required participant information. To download and view the standard FIX specifications, visit www.fixtrading.org.

Note: This document is not intended to replace the FIX protocol manuals, but to provide essential information specific to clients accessing the POSIT MTF.

The scope of this document applies to the following POSIT segments:

- Dark Segment
- Periodic Auction Segment

This document is to be used in conjunction with the POSIT MTF Rulebook (the "Rulebook"), POSIT MTF Participant Manual (the "Participant Manual") and POSIT MTF User Guidance (the "User Guidance") which are available at the Website.

Unless otherwise defined herein, terms defined in the Appendix I of Rulebook shall have the same meaning in this FIX & Connectivity Guidance.

CONNECTIVITY

Participants may establish direct network connectivity to POSIT MTF via a variety of network providers including but not limited to:

- BT Radianz TNS
- Atrium IPC
- Fixnetix
- Encrypted Internet

Participants may also choose to cross-connect if they have presence in InterXion Hanbury Street, London or Equinix LD4, London

Each participant is allocated a FIX tcp/ip port per FIX session. Multiple FIX sessions can be assigned to each participant. Minimum recommended bandwidth per FIX session is 256KB.

In the UAT test environment, connectivity may be established via internet if desired.

POSIT MTF

Participants may interact with the following POSIT MTF market segments:

- Equities Dark Segment
- Periodic Auction Segment (“POSIT Auction”)

Equities Dark Segment

The Equities Dark segment offers the following matching system:

POSIT Now System

Orders may enter the system availing of the pre-trade transparency RPW Waiver subject to these orders being entered with a Midpoint Peg, and as such, may only match at the midpoint of the prevailing PBBO.

Orders availing of the pre-trade transparency LIS Waiver may be entered to the system at any price. These orders may only match within the prevailing PBBO. LIS orders may also enter the system with pegged price instructions which may only match at the specified peg or better.

Both RPW and LIS orders are matched one-to-one with the following priority:

Order Type	Matching Priority
RPW	Size / Time
LIS	Price / Size / Time

In instances where LIS orders match and trade but do not complete, the remainder of the order will continue avail of the LIS waiver (even if the remaining quantity is below LIS) until cancelled or the end of the trading day.

There must be a tradable bid and offer on the primary listing market for any trading to take place. Where a financial instrument is halted or suspended on the primary listing market, then no trading will take place. Trading will resume once the MTF detects that the halt or suspension has been removed, and the financial instrument has tradable bid/offer quotes on its primary listing market.

Periodic Auction Segment

A periodic auction segment (**“**POSIT Auction”) running auctions at frequent intervals with randomised timing and subject to certain conditions being met, such auctions being triggered on receipt and acceptance of a buy or sell order into the system segment;

POSIT Auction contains two separate trading sessions: (1) Intraday and (2) After hours. Orders must state which trading session the respective order is to be submitted to by tag 57 (see Supported POSIT Destinations).

Order types

Order types supported: Market or Limit must be specified. A Peg Bid, Mid or Ask instruction can be specified, where the peg is pegged to the primary market listing of the relevant financial instrument. See section “Order types” for more details.

Minimum Quantity

Minimum Quantity will be interpreted as Minimum Execution Size ("MES").

For more details on the functionality of the above segments please refer to the Participant Manual and User Guidance document, available at the Website.

CERTIFICATION

New participants must complete a formal certification process as per the POSIT MTF Rulebook (section 9) and Participant Manual (section 2), and a UAT environment for existing participants is available upon request. A certification test script is provided to prospective participants.

WORKING WITH FIX

FIX Session Reset Timing

POSIT MTF is available during the market hours as referenced in section 3 of the User Guidance document. Participants are expected to ensure they maintain connectivity during these hours. Session sequence numbers are reset daily outside market hours.

Recovery

During initialization or during a FIX session, message gaps may occur. It is the responsibility of the receiving application to monitor incoming sequence numbers to detect gaps. This information may then be used to respond with Resend Request messages.

POSIT MTF will maintain a list of sent messages, each with a unique sequence number. POSIT MTF 's FIX engine automatically stores all outbound messages for all connections onto disk. This disk file remains in place even if the FIX engine is stopped and restarted.

Certain administrative messages (which do not increment the sequence number) will not be sent in the retransmission of messages in response to a Resend Request from a client.

Cancel On Disconnect

Cancel on disconnect will be implemented by default at the FIX session level.

Timestamps

POSIT timestamps (delivered in FIX tags 52 and 60) will be delivered at microsecond precision by default. Nanosecond precision is available and strongly recommended. Millisecond precision for all timestamps is also available.

Trading Venue Transaction Identification Code (TVTIC)

POSIT will provide the TVTIC value – a unique identifier assigned to all executions which are part of the same match – and provide this to participants in FIX tag 8016 on their execution reports.

Pre-Trade Transparency Waiver Flags

POSIT Equities Dark Segment Only

Participants do not need to the appropriate pre-trade transparency waiver under which they are submitting their orders to the dark segment. POSIT MTF will resolve whether an order should have waiver RPW (Reference Price Waiver) or LIS (Large in scale).

Party Identification

Identifying the Parties of the Order

Participants accessing the POSIT MTF are required to send additional FIX order message tags to identify the parties to the order using the PartyID repeating group tags detailed above.

The table below outlines what party data is required:

Data Element	When is the Identifier Required?
Client identifier [1]	Required when order capacity is AOTC or MTCH
Investment decision maker [2]	Required when order capacity is DEAL
Execution decision maker [2]	Required on all orders

[1] Client Identifier may be a LEI (for a firm) or a National ID (for an individual)

[2] Investment Decision and Execution Decision Maker may be a National ID (for an individual) or Algo ID (for an algorithm)

POSIT MTF requires the sending of this information as integer short codes. The purpose of the short code is to reduce the amount of sensitive data handled by the trading system and to minimise any latency impact with smaller message sizes. These short codes will each represent an identifier such as an LEI, Algo ID or natural person. Clients will need to provide POSIT MTF with short to long code mappings prior to or no later than end of each trading day to facilitate the venue's order record keeping requirements. POSIT MTF will support submission of the short/long code mappings via secure ftp file upload.

The additional short code information should be sent using the NoPartyIDs repeating group.

Tag	Field Name	Comments	Required
453	NoPartyIDs	Indicates the number of instances of the repeating group to follow	Y
448	PartyID	The code representing the client or decision maker represented by this block	Y Reserved values 0=None (for Client ID) 1=AGGR (for Client ID) 2=PNAL (for Client ID) 3=CLIENT / NORE (for Execution Decision Maker)
447	PartyIDSource	P=Short Code	Y

452	PartyRole	3=Client ID 122=Investment Decision Maker 12=Execution Decision Maker	Y
2376	PartyRole Qualifier	Required if using long codes 22=Algorithm 23=Firm or Legal Entity 24=Natural Person	Y 23 only valid for 452=3 (Client ID)

Note: See appendix A for further information on the Identifier Mapping upload site.

Examples of Repeating Group Values

DEAL Capacity Order
Includes Investment Decision Maker (person), Execution Decision Maker (algorithm):
453=2
448=2399, 447=P, 452=122, 2376=24
448=30984, 447=P, 452=12, 2376=22

AOTC capacity order
Includes Client ID, Execution Decision Maker (person):
453=2
448=9043874, 447=P, 452=3, 2376=23
448=12984, 447=P, 452=12, 2376=24

AOTC Capacity Order
Includes Client ID, Execution Decision Maker (algorithm):
453=2
448=9043874, 447=P, 452=3, 2376=23
448=12984, 447=P, 452=12, 2376=24

Where a tag such as Client ID or Investment Decision Maker is not required, it may be omitted, or sent with a value of ‘0’.

DEA Activity
Participants should indicate whether any DEA activity is involved in their order. POSIT MTF can default this flag for participants if required/applicable.

Algorithmic Trade Indicator
Participants should indicate if their order was generated by an algo. This can be defaulted from the Investment and/or Execution Decision Maker information provided.

Order Capacity
Participants should indicate the trading capacity in which the venue participant or participant submits an order. Valid values are -

P (DEAL)
Dealing on own account

R (MTCH)
Matched principal

A (AOTC)
Any other capacity

Note: POSIT MTF executions will always be marked as AOTC indicated by FIX tag 29=1.

Supported POSIT Destinations

POSIT MTF supports trading multiple trading destinations via a single FIX session.

Using FIX tag 57 (TargetSubId) for routing:

Tag 57	Destination	Explanation
POSN	POSIT NOW	Dark segment, continuous matching from market open to market close
POSA	POSIT AUCTION	Periodic auction segment
POSX	POSIT AUCTION CLOSE	POSIT Auction Close – not pegged

Symbology

POSIT MTF required clients to send FIX tags 55, 48 and 22 to indicate the symbol on an order. The value in tag 55 is not validated but this is required as a mandatory FIX tag on all orders. Tag 65 can be optionally sent but will be ignored. It is suggested that the client either sends the exchange ticker for the instrument or copies the value they send in tag 48 into tag 55. The following tag 22 values are supported:

SecurityIdSource Types

Tag 22	SecurityIdSource	Explanation
2	Sedol	
4	ISIN	If sending ISIN, to uniquely identify the appropriate listing: - MIC code must be sent in tag 207 - Currency must be sent in tag 15
5	RIC code	

FIX MESSAGES

Messages Supported

POSIT MTF (equities dark and periodic auction segments) support the following FIX message types:

Tag 35	Message Type
0	Heartbeat
1	Test Request
2	Resend Request
3	Reject
4	Sequence Reset
5	Logout
8	Execution Report
9	Order Cancel Reject
A	Logon
D	New Order Single
F	Order Cancel Request
G	Cancel/Replace Request

Admin Messages

POSIT MTF fully supports all FIX Administrative messages as defined by the FIX 4.2 protocol.

Supported Order Types

Tag 40	Order Type
1	Market
2	Limit
P	Pegged

Supported Pegged Orders

POSIT supports mid, passive and aggressive pegging. Send 40=P and tag 18 with one of the following values:

Tag	Pegged Order Type
M	Mid
P	Aggressive
R	Passive

Supported Time In Force (Order Time)

Tag 59	Time in Force
0	Day (default)
3	Immediate or cancel (IOC)

Supported Order Sides

Tag 54	Order Side
1	Buy
2	Sell

Supported Order Capacity

Tag 528	Order Capacity
A	AOTC
P	DEAL
R	MTCH

Supported Exec Trans Types

Tag 20	Exec Trans Type
0	New (for acknowledgements, fills, confirmation of cancel, confirmation of cancel/replace, nothing done)
1	Cancel (cancel an execution)

Supported Exec Types

Tag 150	Exec Type
0	New
1	Partial fill
2	Fill
4	Canceled
5	Replaced
8	Rejection on orders

Supported Order Status

Tag 39	Order Status
0	Acks on order
1	Partial fill
2	Fill
4	Canceled
5	Replaced
6	Pending cancel
8	Rejections on orders
E	Pending replace

Supported Order Reject Reasons

Tag 103	Order Reject Reason
0	Invalid orders due to invalid specifications
1	Unknown symbol
2	Unavailable exchange (temporary problems or closed for the day)
3	Order exceeds rate limiting or risk limit
6	Duplicate order id
10	Invalid investor id
11	Invalid orders due to invalid specifications
13	Invalid qty

Supported Order Cancel/Replace Reject Reasons

Tag 102	Order Cancel/Replace Reject Reason
0	Too late to cancel/replace
1	Unknown order
2	Broker option - Invalid replace/cancel due to invalid specifications - Exceeds rate limiting or risk limit
3	Already in pending state
6	Duplicate order id

Application Messages

New Order Single

Below is the list of the FIX tags that POSIT MTF would accept in a FIX 4.2 Single Order:

Tag	Field Name	Explanation	Required
	Standard Header	MsgType = D	Y
11	ClOrdID	Day unique id selected by client, 25 characters or less	Y
1	Account	Optional, returned on execution reports	N
115	OnBehalfOfCompId	Returned in tag 128 on execution reports	N
116	OnBehalfOfSubId	Returned in tag 129 on execution reports	N
60	TransactTime	Time this order request was initiated/released. Supported to microsecond granularity	Y
40	OrdType	Refer to 'Supported Order Types'	Y
18	ExecInst	Refer to 'Sending Pegged Orders'	C – required if 40=P (Pegged)
59	TimeInForce	0=Day (Default) 3=ImmediateOrCancel	N
55	Symbol	Refer to 'Symbology'	Y
65	SymbolSfx	Refer to 'Symbology'	N
22	SecurityIDSource	Refer to 'Symbology'	Y
48	SecurityID	Refer to 'Symbology'	Y
207	SecurityExchange	Refer to 'Symbology'	C – required if 22=4 (ISIN)
15	Currency	Refer to 'Symbology'	C – required if 22=4 (ISIN)
54	Side	Refer to 'Supported Order Sides'	Y
38	OrderQty	The number of shares for the order	Y

110	MinQty	Minimum execution quantity	N
44	Price	Required for limit order types	N
528	OrderCapacity	Replaces tag 47 A (AOTC) = any other capacity R (MTCH) = matched principal P (DEAL) = trading on own account	C – required for members
126	ExpireTime	Expiration time of order. UTC Timestamp	N
9200	AtPrice	POSIT Auction only 1 = Trade “at price” instruction	N
9201	GoodForOneAuction	POSIT Auction only 1 = Good for one auction only	N
9204	DurationMillis	Specified duration of order (in milliseconds) upon order arrival	N
9205	GoodIfAuction	POSIT Auction only 1 = Good if auction	N
453	NoPartyIDs	Indicates the number of instances of the repeating group to follow Refer to ‘Party Identification’	C – required for members
448	PartyID	Refer to ‘Party Identification’	
447	PartyIDSource	Refer to ‘Party Identification’	
452	PartyRole	Refer to ‘Party Identification’	
2376	PartyRoleQualifier	Refer to ‘Party Identification’	
	Standard Trailer		Y

Note: Any FIX tags that are normally allowed in the FIX 4.2 protocol but do not appear on the table above, will be ignored by POSIT MTF.

Order Cancel/Replace Request

Below is the list of the FIX tags that POSIT MTF will accept in a FIX 4.2 Cancel/Replace:

Tag	Field Name	Explanation	Required
	Standard Header	MsgType = G	Y
41	OrigClOrdID	Unique identifier of original order as assigned by client	Y
11	ClOrdID	Unique identifier of replacement order as assigned by client	Y
60	TransactTime	Time this cancel/replace request was initiated/released. Supported to microsecond granularity	Y
40	OrdType	Must match original order	Y
18	ExecInst	Must match original order	Y
59	TimeInForce	Must match original order	N
55	Symbol	Must match original order	Y
65	SymbolSfx	Must match original order	N
22	SecurityIDSource	Must match original order	N
48	SecurityID	Must match original order	N
207	SecurityExchange	Must match original order	N
15	Currency	Must match original order	N
54	Side	Refer to Supported order side	Y
38	OrderQty	New order Quantity	Y
110	MinQty	Minimum execution Quantity	N
44	Price	Required for limit order types	N
528	OrderCapacity	Must match original order	N
	Standard Trailer		Y

Note:

Any FIX tags that the FIX 4.2 standard allow sending in a Cancel/Replace but do not appear in the above table are ignored.

Order Cancel Request

Tag	Field Name	Explanation	Required
	Standard Header	MsgType = F	Y
41	OrigClOrdID	Unique ID of original order as assigned by client	Y
11	ClOrdID	Unique ID of cancel request as assigned by the client	Y
60	TransactTime	Time this cancel request was initiated/released. Supported to microsecond granularity	Y
55	Symbol	Must match original order	Y
65	SymbolSfx	Must match original order	N
22	SecurityIDSource	Must match original order	N
48	SecurityID	Must match original order	N
207	SecurityExchange	Must match original order	N
15	Currency	Must match original order	N
54	Side	Must match original order	Y
38	OrderQty	Original OrderQty for Cxl	Y
	Standard Trailer		Y

Execution Report

Below is the list of FIX tags that POSIT MTF will send in a FIX 4.2 Execution Report:

Tag	Field Name	Explanation	Required
	Standard Header	MsgType = 8	Y
128	DeliverToCompId	OnBehalfOfCompId sent by the client	N
129	DeliverToSubId	OnBehalfOfSubId sent by the client	N
1	Account	Account sent by the client	N
60	TransactTime	Time this execution report was generated. Supported to microsecond granularity	Y
20	ExecTransType	Refer to 'Supported Exec Trans Types'	Y
150	ExecType	Refer to 'Supported Exec Types'	Y
17	ExecId	Unique execution report id, optionally prefixed with the date	Y
19	ExecRefId	Sent on an execution cancel, previous execution report id that is cancelled	N
37	OrderID	This is a POSIT MTF-assigned value	Y
11	ClOrdID	As sent by the client	Y
41	OrigClOrdID	Sent when responding to a Cancel or Cancel/Replace request, containing ClOrdID of the previous order	N
39	OrdStatus	Refer to 'Supported Order Status'	Y
103	OrdRejReason	Refer to 'Supported Order Reject Reason'	N
1	Account	Contains the account in the original order	N
55	Symbol	Symbol sent by the client	Y
65	SymbolSfx	SymbolSfx sent by the client	N
22	SecurityIDSource	SecurityIDSource sent by the client	N
48	SecurityID	SecurityID sent by the client	N
207	SecurityExchange	SecurityExchange sent by the client	N
15	Currency	Currency sent by the client	N
54	Side	Side sent by the client	Y
40	OrdType	OrdType sent by the client	Y

18	ExecInst	ExecInst sent by the client	N
59	TimeInForce	Time in force for the Order	Y
38	OrderQty	Number of shares ordered	Y
14	CumQty	Total number of shares executed for this order	Y
151	LeavesQty	Open shares	Y
32	LastShares	Quantity of shares bought/sold on this last fill	N
110	MinQty	MinQty sent by the client	N
44	Price	Price sent by the client	N
6	AvgPx	Average price after multiple executions on a particular order	Y
31	LastPx	Price of this last fill	N
851	LastLiquidityIndicator	1 - Added liquidity on this last fill 2 - Removed liquidity on this last fill	N
30	LastMkt	XPOS - POSIT EU XPOL - POSIT UK	N
76	ExecBroker	POSIT	N
528	OrderCapacity	OrderCapacity sent by the client	N
29	LastCapacity	Agency - 1	N
9139	ContraOrderCapacity	Counterparty OrderCapacity	N

Tag	Field Name	Explanation	Required
126	ExpireTime	ExpireTime sent by the client	N
9204	OrderDuration	OrderDuration sent by the client	N
8016	TradingVenueRegulatoryTradeID	Sent on all fills/partial fills	N
2524	TradeReportingIndicator	1 – On book, trade reported by venue	N
8013	OrderTradeWaiverFlag	Trade waiver for this order 3 – RPW 9 – LIS	N
8014	ExecutionTradeWaiverFlag	Trade waiver for this fill 3 – RPW 9 – LIS	N
20073	TransactionReportingVenue	XOFF	N
20001	ExecBrokerLEI	LEI for POSIT EU or POSIT UK	N
20001	BrokerLEI	Not sent by default 213800EEC95PRUCEUP63	N
377	SolicitedFlag	Indicates if a cancel was solicited or not. Only sent on unsolicited cancels	N
378	ExecRestatementReason	Reason for an unsolicited cancel 8 – Market (Exchange Option)	N
103	OrdRejectReason	Refer to 'Supported Order Reject Reasons'	N
58	Text	Detailed reason on Order rejects	N

Cancel Reject

Tag	Field Name	Explanation	Required
	Standard Header	MsgType = 9	Y
128	DeliverToCompId	OnBehalfOfCompId sent by the client	N
129	DeliverToSubId	OnBehalfOfSubId sent by the client	N
1	Account	Account sent by the client	N
60	TransactTime	Time this cancel reject was generated. Supported to microsecond granularity	Y
37	OrderID	POSIT MTF assigned number for order with ClOrdID or 0 if the order was never received or has terminated	Y
11	ClOrdID	Unique order ID assigned by client to the cancel request or to the replacement order	Y
41	OrigClOrdID	ClOrdID of the previous order as assigned by the client, used to identify the previous order in cancel and cancel/replace requests	Y
39	OrdStatus	Refer to 'Supported Order Status'	Y
55	Symbol	Symbol sent by the client	N
65	SymbolSfx	SymbolSfx sent by the client	N
22	SecurityIDSource	SecurityIDSource sent by the client	N
48	SecurityID	SecurityID sent by the client	N
207	SecurityExchange	SecurityExchange sent by the client	N
15	Currency	Currency sent by the client	N

Tag	Field Name	Explanation	Required
434	CxlRejResponseTo	Identifies the type of request that a Cancel Reject is in response to Valid values: 1 = Order Cancel Request 2 = Order Cancel/Replace Request	Y
102	CxlRejReason	Refer to 'Supported Order Replace/Cancel Reject Reasons'	Y
58	Text	Detailed reason for cancel reject	N
	Standard Trailer		Y

CONFORMANCE TESTING & UAT ENVIRONMENT

Member Onboarding & Conformance Testing

As part of the member onboarding process, the prospective members will be required to complete and pass the POSIT Conformance Testing before accessing the POSIT production environment. Similarly, where a POSIT member wishes to deploy a new algorithm or has made significant changes to an existing algorithm, they are required to make this known to the Client Onboarding Team (details below) who will arrange for conformance testing to be conducted. In both instances testing will be completed in conjunction with the firms FIX Certification Team and the results provided to the prospective member/member. Conformance testing must be passed before access is granted to the venue for the member or algorithm.

UAT Environment

POSIT MTF maintains a UAT Environment where POSIT Members may carry out testing as required. The UAT environment is replica of the POSIT production environment. As such, the UAT environment is available between regular POSIT opening hours (See User Guidance document). Current and prospective members are required to conduct testing when accessing the venue with a new algorithm or after significant systematic changes have been made which could potentially contribute to disorderly trading conditions on the venue and may avail of POSIT's test environment to do so. Members may self-certify testing conducted on new algorithms or significant systematic changes by contacting the Client Onboarding Team. To schedule a session on the UAT environment, please contact the Client Onboarding Team (see details below).

For any queries, please email us at ves-emea-onboarding@virtu.com.

APPENDIX

Upload process for short to long code mappings for POSIT MTF participants

Order Record Keeping requirements under RTS 24 require venues to collect additional information related to orders such as Legal Entity Identifiers (LEI) and Investment/Execution Decision Maker IDs which may represent individuals or algorithm IDs.

In line with other MiFID II/EEA venues, Virtu's POSIT MTF will support members sending this information as integer short codes on their FIX order messages.

A secure ftp upload service to allow members to provide their identifier mappings can be accessed via sftp://sftp.virtu.com. See appendix for relevant sftp information for clients connecting to the service.

Any personal information will be held in strict confidence and not disclosed to third parties, other than to our regulator upon request. By providing your identifier mappings via Virtu's secure ftp upload service you confirm that you have complied with your obligations under applicable data protection legislation in processing this information, including obtaining valid consent from data subjects, where appropriate.

To obtain a sftp login, please email ves-emea-onboarding@virtu.com and include your source ip address/range.

Via FTP, clients can

- Register and delete mappings
  - Bulk csv file upload via Secure FTP (SFTP)
- Obtain success/failure feedback on uploads
  - CSV file to indicate whether records were successfully uploaded or not. Virtu will provide a feedback file to the client. The additional success field per record will indicate if the upload was successful. If not, the reason will be provided as to why the upload failed.
- Download a full list of registered short codes
  - Download CSV containing the registered short codes. *Long codes cannot be downloaded.*
- Download a list of short codes with missing long codes
  - Download CSV with list of the short codes mapping missing for the day

Note: short codes must be unique within an identifier code type

IDENTIFIER REGISTRATION

File Name and Location

Identifier file name should follow the following format:

/incoming/XXXX_identifiers_YYYYMMDD_NNNN.csv

Note: Where XXXX is the client identifier and NNNN is the file sequence number for the

day in case of amendments. Entries in the file are processed separately.

File Format

CSV file should contain a header and follow these fields in order:

Field	Type	Description
Short code	Int (4 – 4,294,967,295)	Virtu Short code
Long code	50 chars string	Algorithm Id/ LEI / etc.
Type	String	See 'Identification Code Types'
Start date	ISO Date (YYYY- MM-DD)	Initial date the entry is valid from
End Date	ISO Date	Empty if entry still active, end data if no longer valid

Identification Code Types

Code	Value
Client-Person	National Id
Client-Entity	LEI
InvestorDecisionMaker-Person	National Id
InvestorDecisionMaker-Algo	Algo Id
ExecutionDecisionMaker-Person	National Id
ExecutionDecisionMaker-Algo	Algo Id

Sample Registration File

```
shortCode,longCode,codeType,fromDate,toDate
1234,AABBCCDD99,Client-Person,2017-01-01,
4678,LEI9LER9LEI,Client-Entity,2017-01-01,2017-09-08
9101,3216549327891,InvestorDecisionMaker-Algo,2017-05-01
```

Feedback File

After upload, a feedback csv file with the registrant results will be available to download at:

/outgoing/XXXX_feedback_YYYYMMDD_NNNN.csv

Sample Feedback File

```
shortCode,longCode,codeType,fromDate,toDate,Success
1234,******,Client-Person,2017-01-01,Y
4678, ******,Client-Entity,2017-01-01,2017-19-08, N- Invalid Date
9101, ******,InvestorDecisionMaker-Algo,2017-05-01,Y
7419, ******,InvestorDecisionMaker,2017-05-01,N – Unknown code type
```

IDENTIFIER LISTING

File name and Location

Download a list of short code used which were missing long code mapping.
File name and format will be
/outgoing/XXXX_missingIdentifiers_YYYYMMDD_NNNN.csv

Sample File

```
shortCode,longCode,codeType,fromDate,toDate

1234,******,Client-Person,2017-01-01,

4678, ******,Client-Entity,2017-01-01,2017-09-08

9101, ******,InvestorDecisionMaker-Algo,2017-05-01
```

MISSING IDENTIFIERS

File Name and Location

Download a list of short code used which were missing long code mapping.
File name and format will be
/outgoing/XXXX_missingIdentifiers_YYYYMMDD_NNNN.csv

Sample File

```
shortCode,codeType

7878,Client-Person

3647Client-Entity
```

SUPPORT

For support and queries regarding MiFID II Identifier management please use the contact details below:

MiFID II - General Queries

Email – EMEA=RegOps@virtu.com

Point of Escalation – smcburney@virtu.com, +44 20 7670 4032

CONTACT

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