SET CONNECT – FIX Market Data Protocol Specification

The Stock Exchange of Thailand

Version: 1.6

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About this document

Before reading this document, please firstly visit the document "SET CONNECT Guideline".

There are 2 protocols using to access the SET CONNECT system for market data dissemination; ITCH and FIX 5.0 SP2. This document describes only for FIX Market Data protocol. For ITCH Protocol, please refer to "SET CONNECT ITCH Specification" document.

This document describes the semantics of the FIX protocol for market data. only the messages and fields which are specific for the Stock Exchange of Thailand. does not mention for all standard FIX protocol and all messages.

This document describes 2 major parts of FIX Market Data protocol.

1. The semantics of the FIX Market Data protocol and basic session handling for connecting to SET CONNECT system.
2. The description of each FIX Market Data message format.

For more information of FIX protocol, please visit www.fixprotocol.org.

The purpose of this document together with its related documents is to serve as a specification of the FIX protocol when implementing a client.

Intended audience

The information in this document is aimed towards Independent Software Vendors ("ISV"), Member's in-house developers ("In-house") or Market Data Vendors ("MDV") intending to develop market data clients via the FIX protocol or members who aim to understand the protocol interaction and connectivity methods.

Contents

1 About the document 5

1.1 About this specification's status and refinement 5

1.2 Concepts and Legend 5

1.2.1 Characteristics given for a message 5
1.2.2 About the Req'd (Required) column 5
1.2.3 About the UD (Union Datatype) column 5

2 FIX Market Data Overview 6

2.1 System Architecture 6

2.2 FIX Market Data Message Overview 7

3 FIX Infrastructure and Session Handling 9

3.1 FIX Infrastructure and Session Handling 9

3.1.1 FIX Version 9
3.1.2 Standard Header 9
3.1.3 The Standard Trailer 9

3.2 Session level messages supported 10

3.3 Application level messages supported 10

3.4 Market Data Recovery 11

3.5 FIX Session 12

3.5.1 Company IDs 12
3.5.2 SenderSubID 12
3.5.3 User Authentication 12
3.5.4 Logon 12
3.5.5 Logout 12
3.5.6 Heartbeat intervals 13
3.5.7 Encryption 13
3.5.8 Character Encoding 13
3.5.9 Change of password 13
3.5.10 Failure handling 13

4 Administrative Messages 15

4.1 Logon (A) 15

4.2 Heartbeat (0) 17

4.3 TestRequest (1) 18

4.4 ResendRequest (2) 19

4.5 Reject (3) 19

4.6 SequenceReset (4) 21

4.7 Logout (5) 22

5 Reference Data 24

5.1 MarketDefinitionRequest (BT, in) 24

5.2 MarketDefinition (BU, out) 25
5.3 TradingSessionListRequest (BI, in) 27
5.4 TradingSessionList (BJ, out) 29
5.5 SecurityListRequest (x, in) 33
5.6 SecurityList (y, out) 36
5.7 SecurityListUpdateReport (BK, out) 49
5.8 BusinessMessageReject (j, out) 55

6 Market Data 56

6.1 MarketDataRequest (V, in) 56
6.2 MarketDataSnapshotFullRefresh – Trade Statistics (W, out) 61
6.3 MarketDataSnapshotFullRefresh – Price Depth (MBP) (W, out) 66
6.4 MarketDataIncrementalRefresh – Price Depth (MBP) Update (X, out) 69
6.5 MarketDataSnapshotFullRefresh – Equilibrium (W, out) 74
6.6 MarketDataIncrementalRefresh – Trade (X, out) 77
6.7 MarketDataSnapshotFullRefresh – Reference Prices (W, out) 80
6.8 MarketDataSnapshotFullRefresh – iNAV (W, out) 82
6.9 MarketDataSnapshotFullRefresh – Index (W, out) 84
6.10 MarketDataSnapshotFullRefresh – Market Statistics (W, out) 87
6.11 MarketDataRequestReject (Y, out) 91

7 State Information 92

7.1 SecurityMassStatusRequest (CN, in) 92
7.2 SecurityMassStatus (CO, out) 93
7.3 BusinessMessageReject (j, out) – SecurityMassStatusRequest 104

8 News 105

8.1 News (B, in) 105
8.2 News (B, out) MarketPlaceNews 108
8.3 News (B, out) FinancialMarketNews 113
8.4 BusinessMessageReject (j, out) - News 119

9 Appendices 121

9.1 Field Definition Changed 121
9.2 Reference Data and Corporate Action 121
9.3 How to maintain the local order book view 123
9.3.1 Example 1 – Initial Market 123
9.3.2 Example 2 – A level can temporarily be beyond the maximum level during processing multiple updates in one MBP message 125

Revision History 127

1 About the document

1.1 About this specification's status and refinement

This specification depicts the FIX service at the outset. It provides an initial base range of messages and workflows for Market Data services. A condensed and consistent set of tags is included with the pronounced aim to meet demands as imposed by authorities and regulation regimes under which financial bodies operate at each individual location.

1.2 Concepts and Legend

1.2.1 Characteristics given for a message

Each message is documented with a leading table summarizing the characteristics and use cases of the message.

Table 1: Message characteristics given

Direction	Can be "In to marketplace" or "out from marketplace". If there can be both variants, separate sections are used.
Message code	The FIX message type: MsgType, tag 35 which is located in the header
Purpose	The general purpose given by the FIX standard. Often very versatile and usually narrows itself at a specific installation. Given for reference only.
Usage and Conditions	Contains information on specific use cases of relevance for the intended Marketplace and any specific conditions that apply.
Limitations	Specification of limitations that may not be obvious or need to be considered when designing operational processes.

1.2.2 About the Req'd (Required) column

The following nomenclature is used for the Req'd column:

Y → The field is required (must have a value) by FIX standard

Q → The field is required (must have a value) by NDAQ standard

C → The field is conditionally required to be non-empty depending on use case.

O → The field is optional, which is the default if not declared.

1.2.3 About the UD (Union Datatype) column

The FIX standard opens for free to use enumeration ranges for some enumeration tags. These are indicated by the union datatype (UD) feature where custom values can be freely added (and agreed between all parties of course) without breaking the protocol. UD:s can be 100+, 1000+, and 4000+ where numbers above (and including) these limits are reserved for implementation dependent use.

2 FIX Market Data Overview

2.1 System Architecture

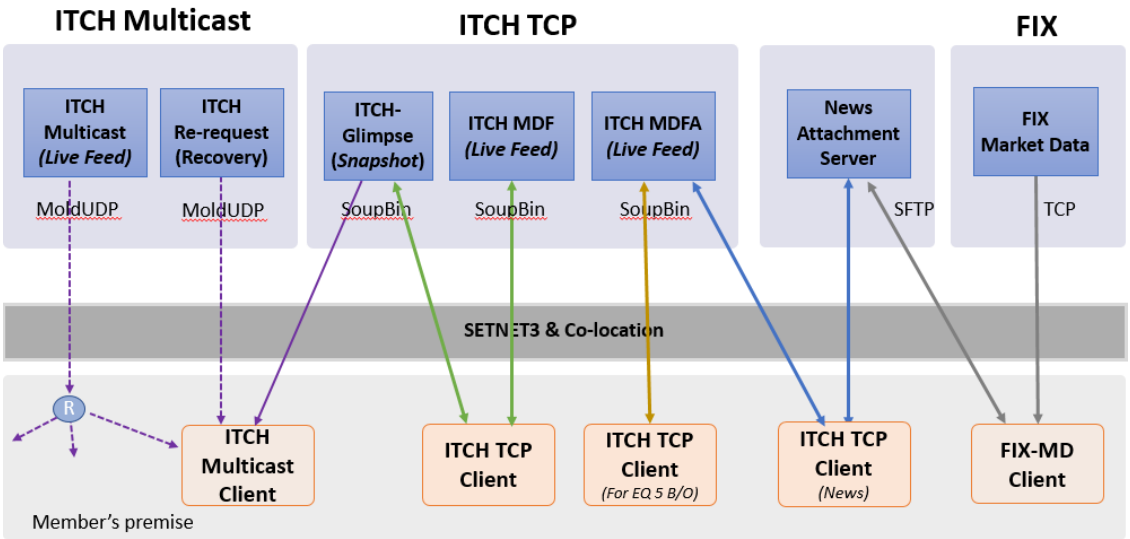
SET Market Data system supports market data and news data from multiple markets e.g. Equity Market (SET/mai), Derivatives Market (TFEX) and etc. However, clients will receive data based on subscription rights.

FIX is one of provided protocol as a direct market data feed for SET CONNECT besides ITCH. The system supports FIX 5.0 SP2 as per international standard. This document will describe only FIX Market Data related.

The member can connect to FIX Market Data server to receive market data feed and News headline.

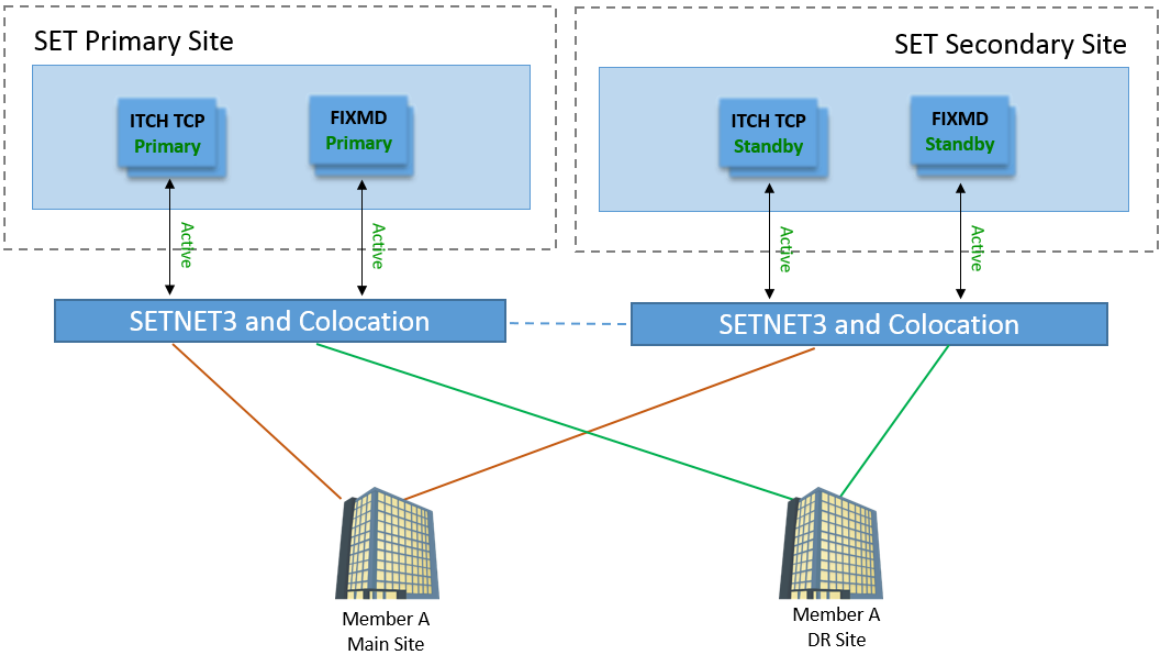
To receive the attached files of News and Financial Statements, the member can use the standard **SFTP** protocol by connecting to **News Attachment Server**.

For the infrastructure, the member can connect to the system via SET integrated network called **SETNET3** network or located in SET **Co-location**.



Market Data Gateways

Moreover, data is available from both primary site and secondary site. Members can connect to both sites at the same time using different API users. However, the secondary site should be used only for redundancy purpose.



FIX MD Redundant Connection

2.2 FIX Market Data Message Overview

The SET CONNECT System consolidates all real-time market data to the single channel. The system supports the trading data of Equity Market (SET/mai), Derivatives Market (TFEX) and SET News. However the client will receive such market data depending on your subscription right. The document describes the necessary data from the system as follows.

- **Administrative** Messages: for FIX session handler messages e.g. Logon (A), Heartbeat (0), TestRequest (1) and etc.
- **Reference data:** containing necessary information of the instruments e.g. SecurityList (y), SecurityListUpdateReport (BK) and etc.
- **Market data** Messages: containing mostly price information and other trading related reference which are separated to several parts e.g. Trade Statistics, Price Depth, Equilibrium Price, Trade, iNAV, Index and Market Statistics.
- **State Information**: containing trading session, halt stats and corporate action codes which are sent via SecurityMassMessaage (CO) message.
- **News**: containing messages from the exchange and news through News (B) message.

Some messages are not applicable to all markets. The list of messages for each market are shown in the below table

Value	Value Description	Equity	TFEX	Combo
x	**SecurityListRequest**	✓	✓	✓
CO	**SecurityMassStatusRequest**	✓	✓	✓
BT	**MarketDefinitionRequest**	✓	✓	-
BI	**TradingSessionListRequest**	✓	✓	-
V	**MarketDataRequest**	✓	✓	
0	*Bid*	✓	✓	✓
1	*Offer*	✓	✓	✓
2	*Trade*	✓	✓	✓
3	*Index Value*	✓ (Only Index)	-	-
4	*Opening Price*	✓	✓	-
5	*Closing Price*	✓	✓	-
6	*Settlement Price* *IPO Price (extension)*	- ✓	✓ -	-
7	*Trading Session High Price*	✓	✓	-
8	*Trading Session Low Price*	✓	✓	-
9	*Trading Session VWAP Price*	✓	✓	-
B	*Trade Volume*	✓	✓	-
C	*Open Interest*	-	✓	-
H	*Mid Price (Equilibrium Price)*	✓	✓	-
e	*Previous closing price (Ever lasts price)*	✓	✓	-
s	*Last auction price*	✓	✓	-
t	*Market aggregated statistics*	✓	✓	-
v	*Indicative price*	✓ (only ETF)	-	-
x	*Last price*	✓	✓	-
B	**News**	✓	✓	-

Note:

- The clients have to send requests for the data according your permission.
- For MarketDataRequest, in case that the clients send request by specifying symbols, the clients should send data requests only for the possible products that can have a value. For example; the clients should send a data request for Indicative price only for ETF securities; the clients should not send a data request for Settlement price and Open interest for any combination series and etc.
- Data permission for Derivatives will include **last price** of underlying feeds which traded in Equity market. Clients will also receive bid/offer information but don't have rights to distribute/display those information.

3 FIX Infrastructure and Session Handling

3.1 FIX Infrastructure and Session Handling

3.1.1 FIX Version

The FIX version of this specification is FIX 5.0SP2. A comprehensive documentation is found at https://www.fixtrading.org/online-specification/ (which currently comprises extension packs up to EP97 though this specification goes further)

3.1.2 Standard Header

All FIX messages contain a Standard Header. The header contains important information such as session identifiers (CompID:s), sequence numbers and message type and length, and other meta data.

Tag	FIX tag name	Req'd	Description
8	BeginString	Y	"*FIXT.1.1*", Identifies beginning of new message and protocol version. ⓘ Always first field in message.
9	BodyLength	Y	Message length, in bytes, forward to the CheckSum field. ⓘ Always second field in message.
35	MsgType	Y	Defines message type ⓘ Always third field in message.
49	SenderCompID	Y	***Member ID***, assigned by SET
56	TargetCompID	Y	***"SET"***
34	MsgSeqNum	Y	Integer message sequence number.
50	SenderSubID	Q	***User name***, assigned by SET
52	SendingTime	Y	Time of message transmission (always expressed in UTC (Universal Time Coordinated, also known as "GMT")

3.1.3 The Standard Trailer

All FIX messages end with a Standard Trailer. The trailer only includes a simple checksum field. The details on how to calculate the checksum can be found in the standard FIX specification.

Tag	FIX Tag name	Req'd	Comment
10	**CheckSum**	**Y**	

3.2 Session level messages supported

Table 2: Session messages overview

FIX message Type	Message name
A	Logon
0	Heartbeat
1	Test request
2	ResendRequest
3	Reject
4	SequenceReset
5	Logout

3.3 Application level messages supported

Table 3: Application messages overview

FIX message Type	Message name	In/Out
BT	MarketDefinitionRequest	In
BU	MarketDefinition	Out
BI	TradingSessionListRequest	In
BJ	TradingSessionList	Out
x	SecurityListRequest	In
y	SecurityList	Out
BK	SecurityListUpdateReport	Out
V	MarketDataRequest	In
W	MarketDataSnapshotFullRefresh – Trade Statistics	Out
W	MarketDataSnapshotFullRefresh – Price Depth (MBP)	Out
X	MarketDataIncrementalRefresh – Price Depth (MBP) Update	Out
W	MarketDataSnapshotFullRefresh – Index	Out
W	MarketDataSnapshotFullRefresh – Equilibrium Price	Out
X	MarketDataSnapshotFullRefresh – Trade	Out
W	MarketDataSnapshotFullRefresh – iNAV	Out
W	MarketDataSnapshotFullRefresh – Market Statistics	Out
Y	MarketDataRequestReject	Out
B	News	In, Out
j	BusinessMessageReject - News	Out

FIX message Type	Message name	In/Out
CN	SecurityMassStatusRequest	In
CO	SecurityMassStatus	Out
j	BusinessMessageReject – SecurityMassStatusRequest	Out

3.4 Market Data Recovery

The systems allow the transmission of trade statistics, price depth (MBP), index prices, equilibrium prices, news and state changes (for market and security).

To enable Market Data the receiver logs in and sends Request Messages. News subscription is enabled by sending News(B, in) message. It is also possible to request recovery of intraday news message using the News(B, in) message.

Full recovery of market data is only partly available according to the following table:

Table 4: Market Data Recovery

Type	Snapshot	Update	Recovery	Comment
Trades Statistics	Yes	Yes	No	
MBP	Yes	Yes	No	
Equilibrium Prices	Yes	Yes	No	
Trade	No	Yes	Yes	Recovery is supported for intraday messages only
Reference Price	Yes	Yes	No	
iNAV	Yes	Yes	No	
Index	Yes	Yes	No	
Market Statistics	No	Yes	No	
State Information	Yes	Yes	No	
News	No	Yes	Yes	Recovery is supported for intraday messages only

3.5 FIX Session

3.5.1 Company IDs

The SenderCompID and TargetCompID define the FIX session. A session can only be active (established) between two hosts simultaneously.

The Company ID of the marketplace is “SET”. This value must be set on:

- TargetCompID of inbound transactions
- SenderCompID of outbound transactions

The Company ID of the client is the client identifier assigned by the marketplace. This id must be set on:

- SenderCompID of inbound transactions
- TargetCompID of outbound transactions

3.5.2 SenderSubID

Each inbound business transaction must have the SenderSubID (tag 50) field assigned to the corresponding user. See the User Authentication section for details on how to authenticate a user. The SenderSubID on incoming transactions will be echoed back in TargetSubID (tag 57) on outbound transactions.

3.5.3 User Authentication

Each incoming business transaction must have a username set in the SenderSubID field. The user must be authenticated for the transaction to be accepted. A user is authenticated by setting the Username (553) and Password (554) in the Logon message.

3.5.4 Logon

At Logon, clients are identified by:

- CompIDs
- IP Address

The Logon Username (553) and Password (554) fields are used to authenticate the client. When the client is authenticated, the system responds with a Logon message to the client.

3.5.5 Logout

A failure at Logon may result in that a Logout message is sent, with a SessionStatus code. The following SessionStatus codes are used:

SessionStatus	Reason
4 = Session logout complete	Session logout complete
5 = Invalid username or password	Invalid username or password. The client may have mixed up username and/or password.
6 = Account locked	Account is locked or suspended
7 = Logons are not allowed at this time	Logons are not allowed at this time

SessionStatus	Reason
8 = Password expired	Password expired

3.5.6 Heartbeat intervals

Heartbeat intervals are negotiated at Logon using the HeartBtInt (108) field. The system allows heartbeat intervals greater than 10 seconds. Recommended heartbeat interval is 30 seconds. A heartbeat interval set lower than 10 seconds will result in a Logout response.

3.5.7 Encryption

The system does not support encryption. It also does not support password encryption in the Logon transaction.

3.5.8 Character Encoding

FIX MD uses standard US ASCII encoding.

3.5.9 Change of password

Change of password of FIX MD is supported via Login message. The new password must comply with SET password policy, as specified in SET CONNECT Guideline document.

3.5.10 Failure handling

If the logon or another message fails, FIX MD will act in different ways depending on the failure. The following Actions can be performed:

Action	Result
Disconnect	The user will be disconnected.
Logout	The user will receive a Logout. A Disconnect will follow within 3 seconds or sooner if the client send a logout or other message before that.
Reject and Logout	The user will receive a Reject message, and then a Logout message. A Disconnect will follow within 3 seconds or sooner if the client send a logout or other message before that.
Reject	The user will receive a Reject message.

The following failures can result in the corresponding Action:

No.	Failure	Action
1	User with provided UserName in the Logon message does not exist or Tag 553 UserName is not provided, or the user is not a FIX MD user.	Disconnect
2	SenderCompID or SubID is not configured for a user in Logon message	Disconnect
3	SenderCompID or SubID does not match the one configured for a user in Logon message	Disconnect
4	Any other is message is received before Logon	Disconnect
5	TargetCompID is incorrect in Logon message	Disconnect
6	BeginString is missing or incorrect in Logon message	Logout
7	TargetCompID is missing in Logon message	Logout
8	HeartBtInt is missing or incorrect (lower than 10) in Logon message	Logout
9	DefaultApplVerID is missing or incorrect (is not “9”) in Logon message	Logout
10	Password is missing in Logon message	Logout
11	SendingTime is missing or have incorrect format in Standard Header	Logout
12	Seq Num is lower than last received and Logon message does not have reset sequence number flag set	Logout
13	Seq Num is lower than last received and message does not have PossDupFlag set	Logout
14	BeginString is missing or incorrect for other messages than Logon	Reject and Logout
15	SenderCompID or TargetCompID is missing or incorrect for other messages than Logon	Reject and Logout
16	PossDup flag is set and OrigSendingTime is after SendingTime in Standard Header	Reject and Logout
17	SubID is missing or is incorrect for other messages than Logon	Reject
18	Other message validation errors, such as missing required tags	Reject

4 Administrative Messages

4.1 Logon (A)

Direction	In to marketplace Out from marketplace
Message code (FIX standard)	A
Purpose (FIX standard), only part of it may apply to the addressed scope	The logon message authenticates a user establishing a connection to a remote system. The logon message must be the first message sent by the application requesting to initiate a FIX session. Moreover clients can change password via Login message. Please refer SET Password Policy from SET CONNECT Guideline document.
Usage and Conditions	Usage1: A client sends a Logon message to initiate a FIX session. Usage2: The marketplace acknowledges the client Logon by returning another Logon message. The Logon Username (553) and Password (554) fields are used to authenticate the client. When the client is authenticated, the system responds with a Logon message to the client.
Limitations	Encryption is not supported
Response/Acknowledgment	Logon (A) -

Table 5: Logon (A, in, out) to initiate a session from client or acknowledge a session initiation from marketplace

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = A
98			EncryptMethod	Y		This is always unencrypted Valid values: 0 = None / Other
108			HeartBtInt	Y		Seconds, same value used by both side. Should be greater than 10 seconds.
141			ResetSeqNumFlag			Valid values:

Tag num.			FIX tag name	Req'd	UD	Description
						Y = Indicates both sides of a FIX session should reset sequence numbers Note: This solution requires resetting the sequence numbers on each Logon.
553			Username	Q		Username, assigned by SET. Required if the client sends Logon to initiate the session.
554			Password	Q		Password, assigned by SET. Required if the client sends Logon to initiate the session.
925			NewPassword			In connection with an intended change of password
1409			SessionStatus			Session status at time of logon. Field is intended to be used when the logon is sent as an acknowledgement from acceptor of the FIX session. Valid values: 0 = Session active
1137			DefaultApplVerID	Y		The default version of FIX messages used in this session. Valid values: 9 = FIX50SP2
			Standard Trailer	Y		

Example Message

- Normal login

```
8=FIXT.1.1|9=109|35=A|34=1|49=0001|50=MD1|52=20210525-23:15:06.150369625|
56=SET|98=0|108=30|141=Y|553=MD1|554=P@ssw0rd |1137=9|10=022|
```

```
Tag    | Name               | Value                  | Enum description
-----------------------------------------------------------------------
     8 | BeginString        | FIXT.1.1               |
     9 | BodyLength         | 109                    |
    35 | MsgType            | A                      | Logon
    34 | MsgSeqNum          | 1                      |
    49 | SenderCompID       | 0001                   | Member ID, assigned by SET
    50 | SenderSubID        | MD1                    | User name, assigned by SET
    52 | SendingTime        | 20210525-23:15:06.150369625|
    56 | TargetCompID       | SET                    |
    98 | EncryptMethod      | 0                      | None / Other
```

```
  108 | HeartBtInt         | 30                    |
  141 | ResetSeqNumFlag    | Y                     | Yes,reset sequence numbers
  553 | Username           | MD1                   | User name, assigned by SET
  554 | Password           | P@ssw0rd              |
 1137 | DefaultApplVerID   | 9                     | FIX50SP2
   10 | CheckSum           | 022                   |
```

- Change Password

```
8=FIXT.1.1|9=109|35=A|34=1|49=0006|50=MD1|52=20201105-23:15:06.150|
56=SET|98=0|108=30|141=Y|553=MD1|554=P@ssw0rd|925=NewP@ssw0rd|1137=9|10=022|
```

```
Tag    | Name               | Value                  | Description
-------------------------------------------------------------------
    8  | BeginString        | FIXT.1.1               |
    9  | BodyLength         | 109                    |
   35  | MsgType            | A                      | Logon
   34  | MsgSeqNum          | 1                      |
   49  | SenderCompID       | 0001                   | Member ID, assigned by SET
   50  | SenderSubID        | MD1                    | User name, assigned by SET
   52  | SendingTime        | 20201105-23:15:06.150369625 |
   56  | TargetCompID       | SET                    |
   98  | EncryptMethod      | 0                      | None / Other
  108  | HeartBtInt         | 30                     |
  141  | ResetSeqNumFlag    | Y                      | Yes, reset sequence numbers
  553  | Username           | MD1                    | User name, assigned by SET
  554  | Password           | P@ssw0rd               |
  925  | NewPassword        | NewP@ssw0rd            | New password
 1137  | DefaultApplVerID   | 9                      | FIX50SP2
   10  | CheckSum           | 022                    |
```

4.2 Heartbeat (0)

Direction	In to marketplace Out from marketplace
Message code (FIX standard)	0
Purpose (FIX standard), only part of it may apply to the addressed scope	The Heartbeat monitors the status of the communication link and identifies when the last of a string of messages was not received.
Usage and Conditions	Usage1: A heartbeat message is sent at the interval set at Logon. Usage2: It is also the response to a Test Request message.
Limitations	-
Response/Acknowledgment	-

Table 6: Heartbeat (0, in, out)

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = 0
112			TestReqID			Required when the heartbeat is the result of a Test Request message.
			Standard Trailer	Y		

4.3 TestRequest (1)

Direction	In to marketplace
Message code (FIX standard)	1
Added (FIX standard)	Added FIX.2.7
Purpose (FIX standard), only part of it may apply to the addressed scope	The test request message forces a heartbeat from the opposing application. The test request message checks sequence numbers or verifies communication line status. The opposite application responds to the Test Request with a Heartbeat containing the TestReqID.
Usage and Conditions	Usage1: Test communication and verify sequence numbers – much like a "ping".
Limitations	-
Response/Acknowledgment	Heartbeat (0)

Table 7: TestRequest (1, in, out)

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = 1
112			TestReqID	Y		Identifier included in Test Request message to be returned in resulting Heartbeat
			Standard Trailer	Y		

4.4 ResendRequest (2)

Direction	In to marketplace Out from marketplace
Message code (FIX standard)	2
Added (FIX standard)	Added FIX.2.7
Purpose (FIX standard), only part of it may apply to the addressed scope	The resend request is sent by the receiving application to initiate the retransmission of messages. This function is utilized if a sequence number gap is detected, if the receiving application lost a message, or as a function of the initialization process.
Usage and Conditions	If request is for a single message BeginSeqNo (7) = EndSeqNo. If request is for all messages subsequent to a particular message, EndSeqNo = "0" (representing infinity).
Limitations	-
Response/Acknowledgment	Resent Application messages SequenceReset (4) as GapFill

Table 8: ResendRequest (2, in, out)

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = 2
7			BeginSeqNo	Y		Message sequence number of first message in range to be resent
16			EndSeqNo	Y		Message sequence number of last message in range to be resent.
			Standard Trailer	Y		

4.5 Reject (3)

Direction	Out from marketplace
Message code (FIX standard)	3
Added (FIX standard)	Added FIX.2.7

Purpose (FIX standard), only part of it may apply to the addressed scope	The reject message should be issued when a message is received but cannot be properly processed due to a session-level rule violation. An example of when a reject may be appropriate would be the receipt of a message with invalid basic data which successfully passes de-encryption, CheckSum and BodyLength checks
Usage and Conditions	The Reject, or session-level reject, message is sent whenever the FIX gateway is able to at least partially parse the message, but the message does not adhere to the specification and cannot be delivered to the back-end system.
Limitations	-
Response/Acknowledgment	-

Table 9: Reject (3, out)

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = 3
45			RefSeqNum	Y		MsgSeqNum of rejected message
371			RefTagID			The tag number of the FIX field being referenced (if applicable)
372			RefMsgType			The MsgType of the FIX message being referenced.
373			SessionRejectReason	Q	R100+	Code to identify reason for a session-level Reject message. Valid values: 0 = Invalid Tag Number 1 = Required Tag Missing 2 = Tag Not Defined For This Message Type 3 = Undefined Tag 4 = Tag Specified Without A Value 5= Value Is Incorrect Out Of Range For This Tag 6 = Incorrect Data Format For Value 9 = Comp ID Problem 10 = Sending Time Accuracy Problem 11 = Invalid Msg Type 15 = Repeating group fields out of order

Tag num.			FIX tag name	Req'd	UD	Description
						16 = Incorrect NumInGroup count for repeating group 99 = Other *R100+ values agreed upon for customer specific use*
58			Text			Where possible, message to explain reason for rejection
			Standard Trailer	Y		

4.6 SequenceReset (4)

Direction	In to marketplace Out from marketplace
Message code (FIX standard)	4
Purpose (FIX standard), only part of it may apply to the addressed scope	The sequence reset message is used by the sending application to reset the incoming sequence number on the opposing side.
Usage and Conditions	This message has two uses. The common usage is with GapFillFlag set to 'Y', which is used in a response to a ResendRequest to indicate that a range of messages will not be resent but fulfills the purpose to cover the lost entries in the MsgSeqNum sequence. This is commonly used to avoid resending administrative messages like Heartbeats. The other (very rare) usage is to reset the sequence numbers to a higher number to get out of a deadlock. This is only triggered by manual intervention.
Limitations	GapFillFlag = N should be used with greatest care.
Response/Acknowledgment	ExecutionReport (8)

Table 10: SequenceReset (4, in, out)

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = 4
123			GapFillFlag			Indicates that the Sequence Reset message is replacing administrative or application messages which will not be resent. Valid values: N = Sequence Reset, Ignore Msg Seq Num Y = Gap Fill Message, Msg Seq Num Field Valid
36			NewSeqNo	Y		
			Standard Trailer	Y		

4.7 Logout (5)

Direction	In to marketplace Out from marketplace
Message code (FIX standard)	5
Purpose (FIX standard), only part of it may apply to the addressed scope	The logout message initiates or confirms the termination of a FIX session.
Usage and Conditions	Usage1: A client sends a Logout message to initiate a FIX session termination. Usage2: The marketplace acknowledges the client Logout by returning another Logout message. Usage3+4: As 1+2 but opposite roles. Disconnection without the exchange of logout messages should be interpreted as an abnormal condition.
Limitations	-
Response/Acknowledgment	Logout (5)

Table 11: Logout (5, in, out) to initiate a graceful session termination from either side or acknowledge the termination

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = 5
1409			SessionStatus	Q	R100+	Status of the FIX session. Only set on outbound Logouts. Valid values: - 4 = Session logout complete - 5 = Invalid username or password - 6 = Account locked - 7 = Logons are not allowed at this time - 8 = Password expired *R100+ values agreed upon for customer specific use*
58			Text			Placeholder for any additional session status from the marketplace
			Standard Trailer	Y		

5 Reference Data

5.1 MarketDefinitionRequest (BT, in)

Direction	In to marketplace
Message code (FIX standard)	BT
Purpose (FIX standard), only part of it may apply to the addressed scope	The Market Definition Request message is used to request for market structure information from the counterparty that match criteria provided on the request.
Usage and Conditions	The request is used to return market structure information of 1. the specified market or 2. all available market structure information The request can be for a snapshot or for a subscription to the market structure information. Note that several subscriptions in parallel is a valid but not optimal option.
Limitations	If MarketSegmentID (1300) is specified then only market structure information for that specified market should be sent back if available. If MarketSegmentID (1300) is not specified then the request is for all available market structure information.
Response/Acknowledgment	MarketDefinition (BU)

Table 12: MarketDefinitionRequest (BT)

Tag num.	FIX tag name	Req'd	UD	Description
	Standard Header	Y		MsgType = BT
1393	MarketReqID	Y		Unique ID of a Market Definition Request message.
263	SubscriptionRequestType	Y		SubscriptionRequestType(263) indicates to the other party what type of response is expected. A snapshot request only asks for current information. Valid values: 0 = Snapshot
1301	MarketID	C		Identifies the market (Exchange, "TH"). Conditionally required if MarketSegmentID (1300) is specified on the request

Tag num.			FIX tag name	Req'd	UD	Description
1300			MarketSegmentID			Identifies the market segment (Market)
			Standard Trailer	Y		

Example Message

- Request for all Market IDs

```
8=FIXT.1.1|9=90|35=BT|34=4|49=0001|50=MD1|52=20210525-23:15:08.969151844|56=SET|
263=0|1393=MktDef-1604877304531|10=192|
```

```
Tag    | Name                      | Value                    | Enum description
-------------------------------------------------------------------------------
    8  | BeginString               | FIXT.1.1                 |
    9  | BodyLength                | 90                       |
   35  | MsgType                   | BT                     | MarketDefinitionRequest
   34  | MsgSeqNum                 | 4                        |
   49  | SenderCompID              | 0001                     |
   50  | SenderSubID               | MD1                      |
   52  | SendingTime               | 20210525-23:15:08. 969151844|
   56  | TargetCompID              | SET                      |
  263  | SubscriptionRequestType   | 0                        | Snapshot
 1393  | MarketReqID               | MktDef-1604877304531     |
   10  | CheckSum                  | 192                      |
```

5.2 MarketDefinition (BU, out)

Direction	Out from marketplace
Message code (FIX standard)	BU
Purpose (FIX standard), only part of it may apply to the addressed scope	The Market Definition message returns the market structure information from the counterparty that match criteria provided on the request.
Usage and Conditions	This message returns the market structure information of 1. the specified market or 2. all available market structure information as a snapshot or as a continuous response to an issued subscription.
Limitations	
Response/Acknowledgment	

Table 13: MarketDefinition (BU)

Tag num.	FIX tag name	Req'd	UD	Description
	Standard Header	Y		MsgType = BU
1394	MarketReportID	Y		Unique identifier for each Market Definition message
1393	MarketReqID	Y		Unique ID of a Market Definition Request message.
1301	MarketID	Y		Market identifier (Exchange, "TH")
1300	MarketSegmentID	Q		Market segment identifier (Market) Example for Equity market EQSM = Equity Main Market EQSO = Equity Odd Lot Market EQIM = Equity Inter Main Market EQIO = Equity Inter Odd Lot Market Example for TFEX market TXA = TFEX Thailand Agriculture TXC = TFEX Thailand Currency TXD = TFEX Thailand Deferred Contract TXE = TFEX Thailand Energy TXI = TFEX Thailand Equity Index TXM = TFEX Thailand Metal TXR = TFEX Thailand Interest Rate TXS = TFEX Thailand Single Stock ⓘ Please see updated Market Codes from SET CONNECT Guideline document.
1396	MarketSegmentDesc	Q		Description of market segment (Market)
	Standard Trailer	Y		

Example Message

```
8=FIXT.1.1|9=000116|35=BU|49=SET|56=0001|34=62|57=MD1|52=20210625-23:15:09.004547355|
1394=2293771|1393=MktDef-1604877304531|1301=TH|1300=EQSM|10=010|
```

```
Tag    | Name              | Value                  | Enum description
-----------------------------------------------------------------
     8 | BeginString       | FIXT.1.1               |
     9 | BodyLength        | 000116                 |
    35 | MsgType           | BU                     | MarketDefinition
    49 | SenderCompID      | SET                    |
    56 | TargetCompID      | 0001                   |
    34 | MsgSeqNum         | 62                     |
    57 | TargetSubID       | MD1                    |
```

```
   52 | SendingTime       | 20210625-23:15:09.004547355 |
 1394 | MarketReportID    | 2293771                     |
 1393 | MarketReqID       | MktDef-1604877304531        |
 1301 | MarketID          | TH                          |
 1300 | MarketSegmentID   | EQSM                        |
   10 | CheckSum          | 010                         |
```

```
8=FIXT.1.1|9=000115|35=BU|49=SET|56=0001|34=63|57=MD1|52=20210625-23:15:09.004547355|
1394=2293861|1393=MktDef-1604877304531|1301=TH|1300=TXI|10=201|
```

```
Tag    | Name              | Value                   | Enum description
-----------------------------------------------------------------
    8  | BeginString       | FIXT.1.1                |
    9  | BodyLength        | 000115                  |
   35  | MsgType           | BU                      | MarketDefinition
   49  | SenderCompID      | SET                     |
   56  | TargetCompID      | 0001                    |
   34  | MsgSeqNum         | 63                      |
   57  | TargetSubID       | MD1                     |
   52  | SendingTime       | 20210625-23:15:09.004547355|
 1394  | MarketReportID    | 2293861                 |
 1393  | MarketReqID       | MktDef-1604877304531    |
 1301  | MarketID          | TH                      |
 1300  | MarketSegmentID   | TXI                     |
   10  | CheckSum          | 201                     |
```

5.3 TradingSessionListRequest (BI, in)

Direction	In to marketplace
Message code (FIX standard)	BI
Purpose (FIX standard), only part of it may apply to the addressed scope	The Trading Session List Request message is used to return a list of trading sessions available in a market place and the state of those trading sessions from the counterparty that match criteria provided on the request
Usage and Conditions	The request is used to return trading sessions, either 1. a particular trading session or 2. all available trading sessions as a snapshot or issuing a subscription. Note that several subscriptions in parallel is a valid but not optimal option.
Limitations	-
Response/Acknowledgment	TradingSessionList (BJ)

Table 14: TradingSessionListRequest (BI, in)

Tag num.	FIX tag name	Req'd	UD	Description
	Standard Header	Y		MsgType = BI
335	TradSesReqID	Y		Unique ID of a Trading Session List Request.
625	TradingSessionSubID			Trading Session for which status is being requested. Valid values: Extension: The actual ID of a Trading Session is used, not the enumerated values listed in the standard FIX specification. Typical values for TradingSessionSubID (625) could be OPEN, CLOSE etc. *Will return all trading sessions if not provided.*
263	SubscriptionRequestType			Subscribe or unsubscribe for security status to security specified in request. Valid values: 0=Snapshot
	Standard Trailer	Y		

Example Message

- Request for all available session states

```
8=FIXT.1.1|9=94|35=BI|34=3|49=0001|50=MD1|52=20210625-23:15:08.722624780|56=SET|
263=0|335=TrdSessList-1604877304530|10=169|
```

```
Tag    | Name                      | Value                      | Enum description
-------------------------------------------------------------------------------
    8  | BeginString               | FIXT.1.1                   |
    9  | BodyLength                | 94                         |
   35  | MsgType                   | BI                  |TradingSessionListRequest
   34  | MsgSeqNum                 | 3                          |
   49  | SenderCompID              | 0001                       |
   50  | SenderSubID               | MD1                        |
   52  | SendingTime               | 20210625-23:15:08.722624780 |
   56  | TargetCompID              | SET                        |
  263  | SubscriptionRequestType   | 0                          | Snapshot
  335  | TradSesReqID              | TrdSessList-1604877304530|
   10  | CheckSum                  | 169                        |
```

- Request for specific session state

```
8=FIXT.1.1|9=110|35=BI|34=110|49=0001|50=MD2|52=20210625-23:20:01.009212345|
56=SET| 263=0|335=TrdSessList-1604877304531|625=MORNING_D|10=186|
```

```
Tag    | Name                      | Value                      | Enum description
-------------------------------------------------------------------------------
    8  | BeginString               | FIXT.1.1                   |
    9  | BodyLength                | 110                        |
   35  | MsgType                   | BI                 |TradingSessionListRequest
   34  | MsgSeqNum                 | 110                        |
   49  | SenderCompID              | 0001                       |
   50  | SenderSubID               | MD1                        |
   52  | SendingTime               | 20210625-23:20:01.009212345 |
   56  | TargetCompID              | SET                        |
  263  | SubscriptionRequestType   | 0                          | Snapshot
  335  | TradSesReqID              | TrdSessList-1604877304531|
  625  | TradingSessionSubID       | MORNING_D                  |
   10  | CheckSum                  | 186                        |
```

5.4 TradingSessionList (BJ, out)

Direction	Out from marketplace
Message code (FIX standard)	BJ
Purpose (FIX standard), only part of it may apply to the addressed scope	The Trading Session List Request message is used to return a list of trading sessions available in a market place and the state of those trading sessions from the counterparty that match criteria provided on the request
Usage and Conditions	The message returns trading sessions, either 1. a particular trading session or 2. all available trading sessions as a snapshot or issuing a subscription.
Limitations	The Trading Session List message contains all trading states (Trading Sessions) the instruments can be in. It contains information on Trading Rules, Matching Rules, and allowed order types for each state. Extension: TradingSessionSubID (625) contains the actual ID of a Trading Session, not the enumerated values listed in the standard FIX specification. Typical values for TradingSessionSubID (625) could be OPEN, CLOSE etc. TradSessStatus (340) will not be in use.
Response/Acknowledgment	

Table 15: TradingSessionList (BJ, out)

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = BJ
335			TradSesReqID	N		Provided for a response to a specific Trading Session List Request message (snapshot).
386			NoTradingSessions	Y		Number of Trading Sessions (states) listed in this message
→	336		TradingSessionID	Y		ID of Trading Session Valid value: 1 = Day 6 = After-hours This tag can be used to distinguish between T (Day) session and T+1 (After-hours) session. After the trading day has transited to T+1 (After-hours) session, all subsequent sessions are considered to be in T+1 (After-hours) session; regardless of the value returned in TradingSessionID [336].
→	625		TradingSessionSubID	Q		Valid values: Extension: The actual ID of a Trading Session is used, not the enumerated values listed in the standard FIX specification. Typical values for TradingSessionSubID (625) could be OPEN, CLOSE etc.
→	1326		TradingSessionDesc	Q		An alternative Display Name for the session. This can be used to display the Session Name instead of showing the session ID from TradingSessionSubID [625]. The availability of the Display Name is decided by the system configuration for the Trading Session-Display Name.
→	340		TradSesStatus	Y	R100+	Valid values: 101 = Not in use

Tag num.			FIX tag name	Req'd	UD	Description
→	1237		NoOrdTypeRules			Will always be 0 or 1
→	→	40	OrdType			Shows whether Market orders are allowed in this state. Valid values: 1 = Market
→	1239		NoTimeInForceRules			Will always be 0-2
→	→	59	TimeInForce			Shows whether IOC or FOK orders are allowed in this state. Valid values: 3 = Immediate Or Cancel (IOC) 4 = Fill Or Kill (FOK)
→	1235		NoMatchRules			Will always be 0 or 1
→	→	1142	MatchAlgorithm			Required in FIX if group is present. Always set to [N/A]
→	→	574	MatchType			Valid values: 4 = Auto-match
→	28032		SessionStateTypeNumber			Extension: The number used in TriggerTradingSessionID for a session state triggered order. The order will be triggered when this state occurs.
			Standard Trailer	Y		

Example Message

- Response for all available session states

```
8=FIXT.1.1|9=002589|35=BJ|49=SET|56=0001|34=61|57=MD1|
52=20210528-23:15:09.203632080|335=TrdSessList-1604877304530|386=39|336=1|
625=AFTERNOON_D| 1326=AFTERNOON           |340=101|1235=1|1142=[N/A]|574=4|
28032=4|36=1|625=SERIES_GEN_DAY_D|1326=SERIES GEN DAY      |340=101|336=1|
625=PRE-OPEN_E|1326=PRE-OPEN            |340=101|336=1|625=PRE-OPEN_D|
1326=PRE-OPEN            |340=101|28032=11|336=1|...|10=084|
```

```
Tag    | Name                  | Value                      | Enum description
-------------------------------------------------------------------------------
     8 | BeginString           | FIXT.1.1                   |
     9 | BodyLength            | 002589                     |
    35 | MsgType               | BJ                         | TradingSessionList
    49 | SenderCompID          | SET                        |
    56 | TargetCompID          | 0001                       |
    34 | MsgSeqNum             | 61                         |
    57 | TargetSubID           | MD1                        |
```

```
   52 | SendingTime           | 20210528-23:15:09.203632080 |
  335 | TradSesReqID          | TrdSessList-1604877304530 |
  386 | NoTradingSessions     | 39                         |
  336 | TradingSessionID      | 1                          | Day
  625 | TradingSessionSubID   | AFTERNOON_D                |
 1326 | TradingSessionDesc    | AFTERNOON                  |
  340 | TradSesStatus         | 101                        |
 1235 | NoMatchRules          | 1                          |
 1142 | MatchAlgorithm        | [N/A]                      |
  574 | MatchType             | 4                          | Auto-match
28032 | SessionStateTypeNumber | 4                          |
  336 | TradingSessionID      | 1                          | Day
  625 | TradingSessionSubID   | SERIES_GEN_DAY_D           |
 1326 | TradingSessionDesc    | SERIES GEN DAY             |
  340 | TradSesStatus         | 101                        |
  336 | TradingSessionID      | 1                          | Day
  625 | TradingSessionSubID   | PRE-OPEN_E                 |
 1326 | TradingSessionDesc    | PRE-OPEN                   |
  340 | TradSesStatus         | 101                        |
  336 | TradingSessionID      | 1                          | Day
  625 | TradingSessionSubID   | PRE-OPEN_D                 |
 1326 | TradingSessionDesc    | PRE-OPEN                   |
  340 | TradSesStatus         | 101                        |
28032 | SessionStateTypeNumber| 11                         |
  336 | TradingSessionID      | 1                          | Day
        ...
   10 | CheckSum              | 084                        |
```

- Response for specific session state

```
8=FIXT.1.1|9=002589|35=BJ|49=SET|56=0001|34=61|57=MD1|52=20201108-
23:15:09.203|335=TrdSessList-1604877304530|386=1|336=1|625=MORNING_D|
1326=MORNING             |340=101|1235=1|1142=[N/A]|574=4|28032=6|10=082|
```

```
Tag   | Name                   | Value                      | Enum description
-------------------------------------------------------------------------------
    8 | BeginString            | FIXT.1.1                   |
    9 | BodyLength             | 002589                     |
   35 | MsgType                | BJ                         | TradingSessionList
   49 | SenderCompID           | SET                        |
   56 | TargetCompID           | 0001                       |
   34 | MsgSeqNum              | 61                         |
   57 | TargetSubID            | MD1                        |
   52 | SendingTime            | 20201108-23:15:09.203      |
  335 | TradSesReqID           | TrdSessList-1604877304530 |
  386 | NoTradingSessions      | 1                          |
  336 | TradingSessionID       | 1                          | Day
  625 | TradingSessionSubID    | MORNING_D                  |
 1326 | TradingSessionDesc     | MORNING                    |
  340 | TradSesStatus          | 101                        | NotInUse
 1235 | NoMatchRules           | 1                          |
 1142 | MatchAlgorithm         | [N/A]                      |
  574 | MatchType              | 4                          | Auto-match
28032 | SessionStateTypeNumber| 6                          |
   10 | CheckSum               | 082                        |
```

5.5 SecurityListRequest (x, in)

Direction	In to marketplace
Message code (FIX standard)	x
Purpose (FIX standard), only part of it may apply to the addressed scope	The Security List Request message is used to return a list of securities from the counterparty that match criteria provided on the request
Usage and Conditions	The request is used to return instruments (securities), either 1. A single instrument or 2. Several instruments matching the MarketID + MarketSegmentID or 3. All instruments as a snapshot or issuing a subscription. Note that several subscriptions in parallel is a valid but not optimal option.
Limitations	-
Response/Acknowledgment	SecurityList (y) Updated security information is sent via SecurityListUpdateReport (BK) for SubscriptionRequestType=1 (Snapshot + Updates)

Table 16: SecurityListRequest (x, in)

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = x
320			SecurityReqID	Y		Unique ID of a Security List Request.
559			SecurityListRequestType	Y		Valid values: 4 = All instruments 5 = MarketID + MarketSegmentID: all items belonging to the same MarketID + MarketSegmentID
1301			MarketID	C		Market identifier (Exchange, "TH") Required if SecurityListRequestType (559) is 5 (MarketID + MarketSegmentID)
1300			MarketSegmentID	C		Market segment identifier (Market) e.g. EQSM, EQSO, TXI, TXS etc.

Tag num.	FIX tag name	Req'd	UD	Description
				Required if SecurityListRequestType (559) is 5 (MarketID + MarketSegmentID) ⓘ The members can get list of Markets from MarketDefinition or the "SET CONNECT Guideline" document.
263	SubscriptionRequestTyp e	Y		Subscribe or unsubscribe for security status to security specified in request. Valid values: 0=Snapshot 1=Snapshot + Updates (Subscribe) 2=Disable previous Snapshot + Update Request (Unsubscribe)
	Standard Trailer	Y		

Example Message

- Request for all securities

```
8=FIXT.1.1|9=95|35=x|34=2|49=0001|50=MD1|52=20210625-23:15:08.498632080|56=SET|
263=1|320=SecList-All|559=4|10=017|
```

```
Tag   | Name                      | Value                  | Enum description
-------------------------------------------------------------------------------
    8 | BeginString               | FIXT.1.1               |
    9 | BodyLength                | 95                     |
   35 | MsgType                   | x                      | SecurityListRequest
   34 | MsgSeqNum                 | 2                      |
   49 | SenderCompID              | 0001                   |
   50 | SenderSubID               | MD1                    |
   52 | SendingTime               | 20210625-23:15:08.498632080 |
   56 | TargetCompID              | SET                    |
  263 | SubscriptionRequestType   | 1          |Snapshot + Updates (Subscribe)
  320 | SecurityReqID             | SecList-All            |
  559 | SecurityListRequestType   | 4                      | All Securities
   10 | CheckSum                  | 017                    |
```

- Requested by Market ID

```
8=FIXT.1.1|9=115|35=x|34=131|49=0001|50=MD2|52=20210625-10:11:49.932151844|
56=SET| 22=M|263=1|320=SecList-ByMarket|559=5|1300=EQSM|1301=TH|10=199|
```

Tag	Name	Value	Enum description
8	BeginString	FIXT.1.1	
9	BodyLength	115	
35	MsgType	x	SecurityListRequest
34	MsgSeqNum	131	
49	SenderCompID	0001	
50	SenderSubID	MD1	
52	SendingTime	20210625-10:11:49.932151844	
56	TargetCompID	SET	
22	SecurityIDSource	M	Marketplace-assigned Identifier
263	SubscriptionRequestType	1	Snapshot + Updates (Subscribe)
320	SecurityReqID	SecList-ByMarket	
559	SecurityListRequestType	5	MarketID or MarketID+MarketSegmentID
1300	MarketSegmentID	EQSM	
1301	MarketID	TH	
10	CheckSum	199	

5.6 SecurityList (y, out)

Direction	Out from marketplace
Message code (FIX standard)	y
Purpose (FIX standard), only part of it may apply to the addressed scope	The Security List message is used to return a list of securities that matches the criteria specified in a Security List Request.
Usage and Conditions	The message is used to return instruments (securities), as requested in a SecurityListRequest, either 1. A single instrument or 2. Several instruments matching the MarketID + MarketSegmentID or 3. All instruments as a snapshot or as a continuous response to an issued subscription. Note that several subscriptions in parallel is a valid but not optimal option.
Limitations	-
Response/Acknowledgment	-

At the start of each trading day, the client can get list of the instruments via SecurityList messages as a snapshot information and can receive updated information through the day via SecurityListUpdateReport message based on the criteria specified in a SecurityListRequest message. The list of the instruments provided are both active and halted securities in the system.

The SecurityList message is fragmentized per Tag 1301 Market ID and Tag 1300 MarketSegmentID. Tag 1301 Market Id identifies which Exchange Orderbook ID belongs to and the and Tag 1300 MarketSegmentID identifies which Market the Orderbook ID belongs to.

Tag 393 TotNoRelatedSym contains the total number of Orderbook ID that will be returned for the snapshot.

Tag 893 indicates if this is the last fragment in a sequence of message fragments.

All instruments including Equity stock, Futures, Options, Combination series, Index and underlying will be sent through SecurityList (y) and updated via SecurityListUpdateReport (BK) messages. The clients can check type of instrument from tag 167 Security Type.

Table 17: SecurityList (y, out)

Tag num.			FIX tag name	Req'd	UD	Description	Equity	TFEX
			Standard Header	Y		MsgType = y		
320			SecurityReqID	C		Conditionally required when responding to a specific SecurityListRequest (35=x), also if in the scope of a subscription.	✓	✓

Tag num.			FIX tag name	Req'd	UD	Description	Equity	TFEX
560			SecurityRequestResult	C		Result of the Security Request identified by the SecurityReqID Valid values: 0 = Valid request 1 = Invalid or unsupported request 2 = No instruments found that match selection criteria 3 = Not authorized to retrieve instrument data	✓	✓
393			TotNoRelatedSym			Used to indicate the total number of securities being returned for this request. Used in the event that message fragmentation is required.	✓	✓
1301			MarketID	Q		Identifies the Exchange ("TH") that lists and trades the instrument.	✓	✓
1300			MarketSegmentID	Q		Identifies the Market to which the trading rules apply.	✓	✓
893			LastFragment			Indicates whether this is the last fragment in a sequence of message fragments. Only required where message has been fragmented. Valid values: N = Not Last Message Y = Last Message	✓	✓
146			NoRelatedSym	C		in SecListGrp	✓	✓
→	55		Symbol	Q		Instrument Short Name	✓	✓
→	48		SecurityID	Q		Orderbook ID ⓘ New security ID is created when its symbol is changed. ⓘ Expired Security IDs may be reused on next trade date onward for new instruments.	✓	✓
→	22		SecurityIDSource	Q		Valid values: M = Marketplace-assigned identifier	✓	✓
→	167		SecurityType	C		Types of instrument. Valid values for Equity	✓	✓

Tag num.			FIX tag name	Req'd	UD	Description	Equity	TFEX
						CS = Common Stock CSF = Foreign Stock PS =Preferred Stock PSF = Preferred Foreign Stock W = Warrant TSR = Transferable Subscription Rights DWC = Derivative Call Warrants DWP = Derivative Put Warrants DR = Depository Receipts ETF = Exchange Traded Fund UT = Unit Trust UL = Underlying IDX = Index Valid values for TFEX FC = Cash-Settled Future FP = Physical Delivery Future OEC = European Call Option OEP = European Put Option WEC = Weekly European Call Option WEP = Weekly European Put Option CMB = Combination SPT = Spot		
→	541		MaturityDate	C		Maturity date or expiration date ⓘ For combination series, this field contains original expiration date. In case that expiration is changed, please use last trade date instead (if need).	N/A	✓
→	965		SecurityStatus	C		Gives the current state of the instrument Valid values: 1 = Active 5 = Delisted 9 = Suspended 11 = Pending Deletion/Issued (Series will be deleted due to the underlying adjustment from CA) ⓘ Suspended status may be used on nearly expired instruments e.g. DW to indicate that it cannot be traded. ⓘ Delisted status is used for delisted instruments e.g. delisted equity stocks, combination series when their outright	✓	✓

Tag num.			FIX tag name	Req'd	UD	Description	Equity	TFEX
						series are issued and spot underlying if product is terminated. ⓘ Series with Pending Deletion or Delisted status will not be sent out on the next trading day.		
→	202		StrikePrice	C		Strike Price of Options series	N/A	✓
→	2577		StrikePricePrecision	C		Specifies the number of decimal places for the Option Strike price	N/A	✓
→	228		Factor	C		The Price Quotation Factor of the instrument is used to calculate turnover for a trade.	N/A	✓
→	231		ContractMultiplier	C		The Contract size of the derivatives instrument	N/A	✓
→	1148		LowLimitPrice			A key parameter in validating order price. Used as the lower band for validating order prices. ⓘ If field is sent out as -2 147 483 648 (MIT INT) divided by InstrumentPricePrecision e.g. 21,474.83648 when precision = 5, it means no price limit. The clients must use 0.01 for lower limit.	✓	✓
→	1149		HighLimitPrice			A key parameter in validating order price. Used as the upper band for validating order prices. ⓘ If field is sent out as -2 147 483 648 (min integer) divided by InstrumentPricePrecision e.g. 21,474.83648 when precision = 5, it means no price limit. The clients must use the truncated decimal of absolute value for upper limit. For Example, if InstrumentPricePrecision = 5, upper limit will be 21,474. If InstrumentPricePrecision = 4, upper limit will be 214,748.	✓	✓
→	1193		SettlMethod	C	BA +	Cash settlement or Physical delivery Valid values:	N/A	✓

Tag num.			FIX tag name	Req'd	UD	Description	Equity	TFEX
						C = Cash settlement required P = Physical settlement required ' ' = For combination series		
→	201		PutOrCall	C		Valid values: 0 = Put 1 = Call	✓ (DW)	✓
→	107		SecurityDesc	C		Can be used by the venue or one of the trading parties to provide a non-normative textual description for the financial instrument.	✓	N/A
→	864		NoEvents			In EvntGrp	Y	✓
→	→	865	EventType			Required if NoEvents(864) > 0. Valid values: 5 = Activation Date (created date of the instruments) 7 = Last eligible trade date 109 = First trading date	✓ (Opt)	✓
→	→	866	EventDate			Conditionally required when EventTime(1145) is specified.	✓ (Opt)	✓
→	→	1145	EventTime				✓ (Opt)	✓
→	2576		InstrumentPricePrecision	C		Number of decimal places for the instrument price	✓	✓
→	870		NoInstrAttrib			In InstrumentExtension/AttrbGrp	✓	✓
→	→	871	InstrAttribType			Attribute type to specify information for the instrument Valid values: 104 = Par value (for Equity) 112 = Allow NVDR (A=All, S=Sell only, N=None) 113 = Allow Short Sell (Y=Allowed, N=Not allowed) 114 = Allow Short Sell on NVDR (Y=Allowed, N=Not allowed) 115 = Not use 116 = Originates From (Old security symbol of this symbol. This field is	✓ (Opt)	✓ (Opt)

Tag num.			FIX tag name	Req'd	UD	Description	Equity	TFEX
						provided in case of symbol changed) 117 = Partition Id (Not applicable) 118 = Modifier (0 = Normal series name, if > 0 = series name is changed when there is any corporate action occurred) ⓘ Allow flag is sent as 'N' for TFEX series. ⓘ Originates From (116) is not available for combination series.		
→	→	872	InstrAttribValue			Attribute value appropriate to the InstrAttribType (871) field. ⓘ Please see possible values at InstrAttribType (871) field.	✓ (Opt)	✓ (Opt)
→	1582		NoSecurityClassifications	C		in SecurityClassificationGrp	✓	✓
→	→	1583	SecurityClassificationReason	C		Valid values: 7 = Sector or Industry 103 = Trading list (Market) ⓘ Value = 7, for SET: sending sector number, for mai: sending Industry number ⓘ Value = 103, sending market segment e.g. SET, MAI, TXI, TXS ⓘ Not available for combination series. ⓘ The member can refer Industry and sector name from SET-CONNECT Guideline - Industry Sector document ⓘ This field is applicable only for Common stock and Foreign common stocks. It will also be sent for other financial products, but it has no meaning; please disregard it.	✓	✓
→	→	1584	SecurityClassificationValue	C		Attribute value appropriate to the SecurityClassificationReason (1583) field.	✓	✓

Tag num.			FIX tag name		Req'd	UD	Description	Equity	TFEX
→	1205		NoTickRules				In TickRules Specifies price tick rules for the security	✓	✓
→	→	1206	StartTickPriceRange				Starting price range for specified tick increment	✓	✓
→	→	1207	EndTickPriceRange				Ending price range for specified tick increment	✓	✓
→	→	1208	TickIncrement				Tick increment for stated price range. Specifies the valid price increments at which a security can be quoted and traded	✓	✓
→	561		RoundLot				The trading lot size	✓	✓
→	711		NoUnderlyings		C		In UndInstrmtGrp Number of underlying instruments. This group is only set if the instrument is derived from an underlying instrument	✓ (Opt)	✓
→	→	311	UnderlyingSymbol		Y		Underlying instrument's short name. ⓘ [N/A] will be sent for inapplicable products	✓ (Opt)	✓
→	→	309	UnderlyingSecurityID		C		Security ID of underlying instrument ⓘ If UnderlyingSymbol is not [N/A], UnderlyingSecurityID will be provided	✓ (Opt)	✓
→	→	305	UnderlyingSecurityIDSource		C	R100+	Valid values: M = Marketplace-assigned identifier	✓ (Opt)	✓
→	→	457	NoUnderlyingSecurityAltID		C		In UndSecAltIDGrp	✓	✓
→	→	→	458	UnderlyingSecurityAltID	C		Underlying numeric code which is used in the Mass Cancellation command.	✓	✓
→	→	→	459	UnderlyingSecurityAltIDSource	C	R100+	Valid values: M = Marketplace-assigned identifier	✓	✓
→	→	2874	UnderlyingID		C		Underlying instrument's identity. This is used to group the instruments which in the same underlying.	✓	✓

Tag num.			FIX tag name	Req'd	UD	Description	Equity	TFEX
						ⓘ UnderlyingID may not be same as underlying instrument e.g. underlying name of LHHOTEL is LHHOT1.		
→	15		Currency	Q		Currency used for price.	✓	✓
→	555		NoLegs			In InstrmtLegSecListGrp Number of legs for Strategy/Combination instruments. ⓘ Note: Only used for strategies/combinations	N/A	✓ (CMB)
→	→	600	LegSymbol			Symbol/Short name of the leg instrument	N/A	✓ (CMB)
→	→	602	LegSecurityID			Orderbook ID of the leg instrument	N/A	✓ (CMB)
→	→	603	LegSecurityIDSource			Valid values: M = Marketplace-assigned identifier	N/A	✓ (CMB)
→	→	623	LegRatioQty			The ratio of quantity for this individual leg relative to the entire multileg security	N/A	✓ (CMB)
→	→	624	LegSide			The side of this individual leg in the multileg security. Valid values: B = "As Defined" (for use with multileg instruments) C = "Opposite" (for use with multileg instruments)	N/A	✓ (CMB)
			Standard Trailer		Y			

ⓘ SET recommends that members should design your system to easily or automatically add new MarketSegmentID (1300), SecurityType (167) and SecurityClassificationReason=103 (Trading list / Market) to support future product expansion.

Example Message

- Common stock

```
8=FIXT.1.1|9=672|34=372|35=y|49=SET|52=20210625-04:20:37.852509460|56=0001|57=MD1|
146=1|15=THB|48=65596|55=BBL|107=BBL_BANGKOK
BANK|167=CS|228=1|561=100|711=1|311=[N/A]|457=1|458=84|459=M|2874=BBL|870=5|
871=112|872=A|871=113|872=Y|871=114|872=Y|871=115|872=N|871=104|872=10|965=1|119
3=C|1205=8|1206=0.01000|1207=1.99000|1208=0.01000|1206=2.00000|1207=4.99000|1208
=0.02000|1206=5.00000|1207=9.99000|1208=0.05000|1206=10.00000|1207=24.99000|1208
```

```
=0.10000|1206=25.00000|1207=99.99000|1208=0.25000|1206=100.00000|1207=199.99000|
1208=0.50000|1206=200.00000|1207=399.99000|1208=1.00000|1206=400.00000|1207=2147
4.00000|1208=2.00000|1582=2|1583=103|1584=SET|1583=7|1584=02|2576=5|320=86837679
|560=0|1300=EQSM|1301=TH|10=243|
```

Tag	Name	Value	Enum description
8	BeginString	FIXT.1.1	
9	BodyLength	672	
34	MsgSeqNum	372	
35	MsgType	y	SecurityList
49	SenderCompID	SET	
52	SendingTime	20210625-04:20:37.852509460	
56	TargetCompID	0001	
57	TargetSubID	MD1	
146	NoRelatedSym	1	
15	Currency	THB	
48	SecurityID	65596	
55	Symbol	BBL	
107	SecurityDesc	BBL_BANGKOK BANK	
167	SecurityType	CS	Common Stock
228	Factor	1	
561	RoundLot	100	
711	NoUnderlyings	1	
311	UnderlyingSymbol	[N/A]	
457	NoUnderlyingSecurityAltID	1	
458	UnderlyingSecurityAltID	84	
459	UnderlyingSecurityAltIDSource	M	
2874	UnderlyingID	BBL	
870	NoInstrAttrib	5	
871	InstrAttribType	112	Allow NVDR
872	InstrAttribValue	A	
871	InstrAttribType	113	Allow ShortSell
872	InstrAttribValue	Y	
871	InstrAttribType	114	Allow ShortSell on NVDR
872	InstrAttribValue	Y	
871	InstrAttribType	115	Not use
872	InstrAttribValue	N	Not use
871	InstrAttribType	104	Par value
872	InstrAttribValue	10	
965	SecurityStatus	1	Active
1193	SettlMethod	C	
1205	NoTickRules	8	
1206	StartTickPriceRange	0.01000	
1207	EndTickPriceRange	1.99000	
1208	TickIncrement	0.01000	
1206	StartTickPriceRange	2.00000	
1207	EndTickPriceRange	4.99000	
1208	TickIncrement	0.02000	
1206	StartTickPriceRange	5.00000	
1207	EndTickPriceRange	9.99000	
1208	TickIncrement	0.05000	
1206	StartTickPriceRange	10.00000	
1207	EndTickPriceRange	24.99000	
1208	TickIncrement	0.10000	
1206	StartTickPriceRange	25.00000	
1207	EndTickPriceRange	99.99000	

```
1208 | TickIncrement              | 0.25000              |
1206 | StartTickPriceRange        | 100.00000            |
1207 | EndTickPriceRange          | 199.99000            |
1208 | TickIncrement              | 0.50000              |
1206 | StartTickPriceRange        | 200.00000            |
1207 | EndTickPriceRange          | 399.99000            |
1208 | TickIncrement              | 1.00000              |
1206 | StartTickPriceRange        | 400.00000            |
1207 | EndTickPriceRange          | 21474.00000          |
1208 | TickIncrement              | 2.00000              |
1582 | NoSecurityClassifications  | 2                    |
1583 | SecurityClassificationReason| 103                 | Trading list (Market)
1584 | SecurityClassificationValue | SET                 |
1583 | SecurityClassificationReason| 7                   | Sector or Industry
1584 | SecurityClassificationValue | 02                  |
2576 | InstrumentPricePrecision    | 5                   |
 320 | SecurityReqID              | 86837679             |
 560 | SecurityRequestResult      | 0                    | Valid request
1300 | MarketSegmentID            | EQSM                 |
1301 | MarketID                   | TH                   |
  10 | CheckSum                   | 243                  |
```

- Futures

```
8=FIXT.1.1|9=415|34=8|35=y|49=SET|52=20210625-04:20:37.852509460|56=0001|57=MD1|
146=1|15=THB|48=216645|55=S50H21|167=FC|228=200|541=20210330|561=1|711=1|311=SET
50|309=85573|457=1|458=20037|459=M|2874=SET50|864=2|865=109|866=20200327|865=7|8
66=20210330|1145=20210330-
09:30:00.000|870=5|871=112|872=N|871=113|872=N|871=114|872=N|871=115|872=N|871=1
04|872=0|965=1|1193=C|1205=1|1206=0.10000|1207=21474.80000|1208=0.10000|2576=5|3
20=16565427|560=0|1300=TXI|1301=TH|10=216|
```

Tag	Name	Value	Enum description
8	BeginString	FIXT.1.1	
9	BodyLength	415	
34	MsgSeqNum	8	
35	MsgType	y	SecurityList
49	SenderCompID	SET	
52	SendingTime	20210625-04:20:37.852509460	
56	TargetCompID	0001	
57	TargetSubID	MD1	
146	NoRelatedSym	1	
15	Currency	THB	
48	SecurityID	216645	
55	Symbol	S50H21	
167	SecurityType	FC	Cash-Settled Future
228	Factor	200	
541	MaturityDate	20210330	
561	RoundLot	1	
711	NoUnderlyings	1	
311	UnderlyingSymbol	SET50	
309	UnderlyingSecurityID	85573	
457	NoUnderlyingSecurityAltID	1	
458	UnderlyingSecurityAltID	20037	
459	UnderlyingSecurityAltIDSource	M	
2874	UnderlyingID	SET50	
864	NoEvents	2	
865	EventType	109	First trading date
866	EventDate	20200327	
865	EventType	7	Last Eligible Trade Date
866	EventDate	20210330	
1145	EventTime	20210330-09:30:00.000	
870	NoInstrAttrib	5	
871	InstrAttribType	112	
872	InstrAttribValue	N	
871	InstrAttribType	113	
872	InstrAttribValue	N	
871	InstrAttribType	114	
872	InstrAttribValue	N	
871	InstrAttribType	115	Not use
872	InstrAttribValue	N	Not use
871	InstrAttribType	104	
872	InstrAttribValue	0	
965	SecurityStatus	1	Active
1193	SettlMethod	C	Cash settlement required
1205	NoTickRules	1	
1206	StartTickPriceRange	0.10000	
1207	EndTickPriceRange	21474.80000	
1208	TickIncrement	0.10000	
2576	InstrumentPricePrecision	5	

320	SecurityReqID	16565427	
560	SecurityRequestResult	0	Valid request
1300	MarketSegmentID	TXI	
1301	MarketID	TH	
10	CheckSum	216	

- Options

```
8=FIXT.1.1|9=441|34=9|35=y|49=SET|52=20200625-04:20:37.852509460|56=0001|57=MD1|
146=1|15=THB|48=5852741|55=S50H21C775|167=OEC|201=1|202=775|228=200|541=20210330
|561=1|711=1|311=SET50|309=85573|457=1|458=20037|459=M|2874=SET50|864=2|865=109|
866=20200928|865=7|866=20210330|1145=20210330-
09:30:00.000.000000000|870=5|871=112|872=N|871=113|872=N|871=114|
872=false|871=115|872=N|871=104|872=0|965=1|1193=C|1205=1|1206=0.10000|1207=2147
4.80000|1208=0.10000|2576=5|2577=0|320=16582810|560=0|1300=TXI|1301=TH|10=223|
```

Tag	Name	Value	Enum description
8	BeginString	FIXT.1.1	
9	BodyLength	441	
34	MsgSeqNum	9	
35	MsgType	y	SecurityList
49	SenderCompID	SET	
52	SendingTime	20200625-04:20:37.852509460	
56	TargetCompID	0001	
57	TargetSubID	MD1	
146	NoRelatedSym	1	
15	Currency	THB	
48	SecurityID	5852741	
55	Symbol	S50H21C775	
167	SecurityType	OEC	European Call Option
201	PutOrCall	1	Call
202	StrikePrice	775	
228	Factor	200	
541	MaturityDate	20210330	
561	RoundLot	1	
711	NoUnderlyings	1	
311	UnderlyingSymbol	SET50	
309	UnderlyingSecurityID	85573	
457	NoUnderlyingSecurityAltID	1	
458	UnderlyingSecurityAltID	20037	
459	UnderlyingSecurityAltIDSource	M	
2874	UnderlyingID	SET50	
864	NoEvents	2	
865	EventType	109	First trading date
866	EventDate	20200928	
865	EventType	7	Last Eligible Trade Date
866	EventDate	20210330	
1145	EventTime	20210330-09:30:00.000.000000000	
870	NoInstrAttrib	5	
871	InstrAttribType	112	
872	InstrAttribValue	N	
871	InstrAttribType	113	
872	InstrAttribValue	N	
871	InstrAttribType	114	
872	InstrAttribValue	N	
871	InstrAttribType	115	Not use
872	InstrAttribValue	N	Not use

871	InstrAttribType	104	
872	InstrAttribValue	0	
965	SecurityStatus	1	Active
1193	SettlMethod	C	Cash settlement required
1205	NoTickRules	1	
1206	StartTickPriceRange	0.10000	
1207	EndTickPriceRange	21474.80000	
1208	TickIncrement	0.10000	
2576	InstrumentPricePrecision	5	
2577	StrikePricePrecision	0	
320	SecurityReqID	16582810	
560	SecurityRequestResult	0	Valid request
1300	MarketSegmentID	TXI	
1301	MarketID	TH	
10	CheckSum	223	

- Combination series

```
8=FIXT.1.1|9=417|34=402|35=y|49=SET|52=20210625-
04:20:37.852509460|56=0001|57=MD1|
146=1|15=THB|48=12275269|55=S50M21U21|167=C1|228=0|555=2|600=S50M21|602=282181|6
03=M|623=1|624=C|600=S50U21|602=478789|603=M|623=1|624=B|561=1|711=1|311=SET50|3
09=85573|457=1|458=20037|459=M|2874=SET50|870=5|871=112|872=A|871=113|872=N|871=
114|872=Y|871=115|872=A|871=104|872=0|965=1|1205=1|1206=-
21474.80000|1207=21474.80000|
1208=0.10000|2576=5|320=87621163|560=0|1300=TXI|1301=TH|10=111|
```

Tag	Name	Value	Enum description
8	BeginString	FIXT.1.1	
9	BodyLength	417	
34	MsgSeqNum	402	
35	MsgType	y	SecurityList
49	SenderCompID	SET	
52	SendingTime	20210625-04:20:37.852509460	
56	TargetCompID	0001	
57	TargetSubID	MD1	
146	NoRelatedSym	1	
15	Currency	THB	
48	SecurityID	12275269	
55	Symbol	S50M21U21	
167	SecurityType	CMB	
228	Factor	0	
555	NoLegs	2	
600	LegSymbol	S50M21	
602	LegSecurityID	282181	
603	LegSecurityIDSource	M	
623	LegRatioQty	1	
624	LegSide	C	
600	LegSymbol	S50U21	
602	LegSecurityID	478789	
603	LegSecurityIDSource	M	
623	LegRatioQty	1	
624	LegSide	B	
561	RoundLot	1	
711	NoUnderlyings	1	

```
 311 | UnderlyingSymbol        | SET50                  |
 309 | UnderlyingSecurityID    | 85573                  |
 457 | NoUnderlyingSecurityAltID  | 1                   |
 458 | UnderlyingSecurityAltID    | 20037               |
 459 | UnderlyingSecurityAltIDSource | M                |
2874 | UnderlyingID            | SET50                  |
 870 | NoInstrAttrib           | 5                      |
 871 | InstrAttribType         | 112                    |
 872 | InstrAttribValue        | A                      |
 871 | InstrAttribType         | 113                    |
 872 | InstrAttribValue        | N                      |
 871 | InstrAttribType         | 114                    |
 872 | InstrAttribValue        | Y                      |
 871 | InstrAttribType         | 115                    | Not use
 872 | InstrAttribValue        | A                      | Not use
 871 | InstrAttribType         | 104                    |
 872 | InstrAttribValue        | 0                      |
 965 | SecurityStatus          | 1                      | Active
1205 | NoTickRules             | 1                      |
1206 | StartTickPriceRange     | -21474.80000          |
1207 | EndTickPriceRange       | 21474.80000           |
1208 | TickIncrement           | 0.10000               |
2576 | InstrumentPricePrecision| 5                      |
 320 | SecurityReqID           | 87621163               |
 560 | SecurityRequestResult   | 0                      | Valid request
1300 | MarketSegmentID         | TXI                    |
1301 | MarketID                | TH                     |
  10 | CheckSum                | 111                    |
```

5.7 SecurityListUpdateReport (BK, out)

Direction	Out from marketplace
Message code (FIX standard)	BK
Purpose (FIX standard), only part of it may apply to the addressed scope	The Security List Update Report message is used to return a list of intra-day updated instruments. Updates may include additions, modifications and deletions.
Usage and Conditions	The message is used to return intra-day updated instruments. Updates may include additions, modifications and deletions.
Limitations	
Response/Acknowledgment	-

If there are any updated information of the instruments and creating new instruments during the day, data will be disseminated via SecuriytListUpdateReport message. However, the criteria specified in a SecurityListRequest message must be Snapshot + Updates to be able to receive the update.

There are multiple cases to create new instruments. The example is shown as below.

1) The new instruments of Equity and TFEX are disseminated at the different time. The details are described below.
   - New Equity instruments, which will be traded on the next trading day, will be created at corporate action process after market closed. The client can check tag 292 Corporate Action to be D (New list stock).
   - New TFEX series will be generated in the morning and can be traded on that day. The client will receive new series when logging into the system. In future, TFEX might have instruments that can be created intraday and traded immediately.
2) For the corporate actions which the symbol of instrument will be changed e.g. change symbol of Equity, beneficial CA of TFEX underlying,
   - The status of old instruments will be set to "Pending Deletion/Issued" and the status of their combination series (if any) will be set to "Delisted". This means the instruments will not be sent out on next trading day.
   - The new Instrument will be created with new Security ID with status "Active".
   - The clients can refer to the old instrument symbol from the Originate From field.
   - The necessary information e.g. closing price, settlement price, will be carried to the new Security ID via corresponding messages.
   - For some corporate actions, such as change symbol effective on day T, new TFEX series will be activated at the day T-1 but the underlying security id information of these new series will be available on the day T.

Please see more detail about tag 292 Corporate Action in SecurityMassStatus message.

The SecurityUpdateList message is fragmentized per Tag 1301 Market Id and Tag 1300 MarketSegmentID. Tag 1301 Market Id identifies which Exchange Orderbook ID belongs to and the and Tag 1300 MarketSegmentID identifies which Market the Orderbook ID belongs to.

The possible values of each tags are same as SecurityList message.

Table 18: SecurityListUpdateReport (BK, out)

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = BK
320			SecurityReqID	C		Conditionally required when responding to a specific SecurityListRequest (35=x), also if in the scope of a subscription.
1301			MarketID	Q		Identifies the Exchange that lists and trades the instrument.
1300			MarketSegmentID	Q		Identifies the Market to which the trading rules apply.
146			NoRelatedSym	C		in SecLstUpdRelSymGrp
→	1324		ListUpdateAction			To indicate changes to the instrument. Valid values:

Tag num.			FIX tag name	Req'd	UD	Description
						A = Add M = Modify
→	55		Symbol	Q		Instrument Short Name
→	48		SecurityID	Q		Orderbook ID
→	22		SecurityIDSource	Q	R100+	Valid values: M = Marketplace-assigned identifier
→	167		SecurityType	C		Types of instrument. Valid values: Same as in SecurityList (y) message
→	541		MaturityDate	C		Maturity date or expiration date
→	965		SecurityStatus	C		Gives the current state of the instrument Valid values: 1 = Active 5 = Delisted 9 = Suspended 11 = Pending Deletion/Issued
→	202		StrikePrice	C		Strike Price of Options series
→	2577		StrikePricePrecision	C		Used for derivatives. Specifies the number of decimal places for the Option Strike price
→	228		Factor	C		The Price Quotation Factor of the instrument is used to calculate turnover for a trade.
→	231		ContractMultiplier	C		The Contract size of the derivatives instrument
→	1148		LowLimitPrice			A key parameter in validating order price. Used as the lower band for validating order prices.
→	1149		HighLimitPrice			A key parameter in validating order price. Used as the upper band for validating order prices.
→	1193		SettlMethod	C	BA+	Valid values: C = Cash settlement required P = Physical settlement required
→	201		PutOrCall	C		Valid values:

Tag num.			FIX tag name	Req'd	UD	Description
						0 = Put 1 = Call
→	106		Issuer	C		The issuer of the instrument, a company or country
→	107		SecurityDesc	C		Can be used by the venue or one of the trading parties to provide a non-normative textual description for the financial instrument.
→	864		NoEvents			In EvntGrp
→	→	865	EventType			Required if NoEvents(864) > 0. Valid values: Same as in SecurityList (y) message
→	→	866	EventDate			Conditionally required when EventTime(1145) is specified.
→	→	1145	EventTime			
→	2576		InstrumentPricePrecision	C		Number of decimal places for the instrument price
→	870		NoInstrAttrib			In InstrumentExtension/AttrbGrp
→	→	871	InstrAttribType			Attribute type to specify information for the instrument Valid values: Same as in SecurityList (y) message
→	→	872	InstrAttribValue			Attribute value appropriate to the InstrAttribType (871) field.
→	1205		NoTickRules			In TickRules Specifies price tick rules for the security
→	→	1206	StartTickPriceRange			Starting price range for specified tick increment
→	→	1207	EndTickPriceRange			Ending price range for specified tick increment
→	→	1208	TickIncrement			Tick increment for stated price range. Specifies the valid price increments at which a security can be quoted and traded

Tag num.			FIX tag name		Req'd	UD	Description
→	561		RoundLot				The trading lot size
→	711		NoUnderlyings		C		In UndInstrmtGrp Number of underlying instruments. This group is only set if the instrument is derived from an underlying instrument
→	→	311	UnderlyingSymbol		Y		Underlying instrument's short name. ⓘ [N/A] will be sent for inapplicable products
→	→	309	UnderlyingSecurityID		C		Security ID of underlying instrument ⓘ If UnderlyingSymbol is not [N/A], UnderlyingSecurityID will be provided
→	→	305	UnderlyingSecurityID Source		C	R100+	Valid values: M = Marketplace-assigned identifier
→	→	457	NoUnderlyingSecurity AltID		C		In UndSecAltIDGrp
→	→	→	458	UnderlyingSecu rityAltID	C		Underlying numeric code which is used in the Mass Cancellation command.
→	→	→	459	UnderlyingSe curityAltIDSo urce	C	R100+	Valid values: M = Marketplace-assigned identifier
→	→	2874	UnderlyingID		C		Underlying instrument's identity
→	15		Currency		Q		Currency used for price.
→	555		NoLegs				In ISecLstUpdRelSymsLegGrp Number of legs for Strategy/Combination instruments. ⓘ Only used for strategies/combinations
→	→	600	LegSymbol				Symbol/Short name of the leg instrument
→	→	602	LegSecurityID				Orderbook ID of the leg instrument
→	→	603	LegSecurityIDSource				Valid values: M = Marketplace-assigned identifier

Tag num.			FIX tag name	Req'd	UD	Description
→	→	623	LegRatioQty			The ratio of quantity for this individual leg relative to the entire multileg security
→	→	624	LegSide			The side of this individual leg in the multileg security. Valid values: B = "As Defined" (for use with multileg instruments) C = "Opposite" (for use with multileg instruments)
			Standard Trailer		Y	

5.8 BusinessMessageReject (j, out)

Direction	Out from Marketplace
Message code	j
Purpose (FIX standard), only part of it may apply to the addressed scope	The Business Message Reject message can reject an application-level message which fulfills session-level rules and cannot be rejected via any other means. Note if the message fails a session-level rule (e.g. body length is incorrect), a session-level Reject message should be issued.
Usage and Conditions	The Business Message Reject message is used when the Marketplace cannot honor the following requests: MarketDefinitionRequest (BT, in) TradingSessionListRequest (BI, in)
Limitations	
Response/Acknowledgment	--

Table 19: BusinessMessageReject (j, out)

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = j
45			RefSeqNum			MsgSeqNum of rejected message
372			RefMsgType	Y		The MsgType of the FIX message being referenced. Valid values: BT = MarketDefinitionRequest BI = TradingSessionListRequest
380			BusinessRejectReason	Y		Code to identify reason for a Business Message Reject message. Valid values: 0 = Other 6 = Not Authorized
58			Text			Where possible, message to explain reason for rejection.
			Standard Trailer	Y		

6 Market Data

6.1 MarketDataRequest (V, in)

Direction	In to marketplace
Message code	V
Purpose (FIX standard), only part of it may apply to the addressed scope	Some systems allow the transmission of real-time quote, order, trade, trade volume, open interest, and/or other price information on a subscription basis. A MarketDataRequest(35=V) is a general request for market data on specific securities or forex quotes. The values in the fields provided within the request will serve as further filter criteria for the result set.
Usage and Conditions	In this solution Market Data is sent to the client after the client has issued requests for the market data. News however is made available through News (B, in) message.
Limitations	Only trade and index recovery are only supported. Trade snapshot is not supported.
Response/ Acknowledgment	Successful: MarketDataSnapshotFullRefresh – Trade Statistics (W) Successful: MarketDataSnapshotFullRefresh – Price Depth (MBP) (W) Successful: MarketDataIncrementalRefresh – Price Depth (MBP) Update (X) Successful: MarketDataFullRefresh – Index (W) Successful: MarketDataSnapshotFullRefresh – Equilibrium Price (W) Successful: MarketDataIncrementalRefresh – Trade (X) Successful: MarketDataFullRefresh – iNAV (W) Successful: MarketDataFullRefresh – Market Statistics (W) Not successful: MarketDataRequestReject (Y)

Market data can be requested as snapshot or as snapshot+updates. Detail of message transmission is summarized as below table:

Data	MDEntryType	Snapshot	Update
Trade Statistics	4 = Opening price 5 = Closing Price 6 = Settlement price / IPO price (extension) 7= Trading session high price 8 = Trading session low price	W	W

Data	MDEntryType	Snapshot	Update
	9 = Trading session VWAP B = Trade volume C = Open interest e = Previous closing price (Ever last price) s = Last auction price x = Last price		
Price Depth (MBP)	0 = Bid 1 = Offer	W	X
Index	3 = Index value 4 = Opening Price 5 = Closing Price e = Previous Closing Price	W	W
Equilibrium	H = Mid price (Equilibrium price) A = Imbalance	W	W
Trade	2 = Trade	Not support	X
INAV	v = Indicative price	W	W
Market Statistics	t = Market aggregated statistics (extension)	Not support	W

About MarketDepth (264) in Price Depth (MBP)

- In this solution MarketDepth (264) = 0 (full book depth), will mean the maximum order book depth which is according to client subscription rights.
- For the Market Data – MBP, the client has the responsibility for implicitly deleting bids or offers falling outside the current actual book depth for the client. The current actual book depth for the client will be dependent on the subscription made by the client, and client subscription rights. The client will receive Message Market Data – MBP (W, out) where MarketDepth (264) will indicate the current actual book depth which is applicable for the client.
- For example, if a client has subscription rights for 10 MBP Level and make a subscription request with MarketDepth (264) = 5, then the actual book depth which is applicable for the client will be the maximum of 5. The client will receive Message Market Data – MBP (W, out) where MarketDepth (264) = 5.

To manage MDReqID versus SubscriptionRequestType (263),

- A MDReqID for which the SubscriptionRequestType (263) = 0, Snapshot, can be reused after the snapshot has been sent by the server.
- A MDReqID for which the SubscriptionRequestType (263) = 1, Snapshot + Updates, can only be reused after the request has been unsubscribed by the client (by sending SubscriptionRequestType = 2, Disable previous Snapshot + Update Request (Unsubscribe)).

Allow only identify wildcard subscription for instrument

- Symbol (55) must be equal to "[N/A]" and SecurityID (48) must set value as "0". Otherwise the system may reject such request. The subscription will be made for all market data the user is granted access.

Table 20: MarketDataRequest(V, in) is used to Request Market Data

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = V
262			MDReqID	Y		Must be unique, or the ID of previous Market Data Request to disable if SubscriptionRequestType(263) = 2(Disable previous Snapshot + Updates Request).
263			SubscriptionRequestType	Y		SubscriptionRequestType(263) indicates to the other party what type of response is expected. A snapshot request only asks for current information. A subscribe request asks for updates as the status changes. Unsubscribe will cancel any future update messages from the counter party. 0 = Snapshot 1 = Snapshot + Updates 2 = Disable previous Snapshot + Update Request (Unsubscribe). ⓘ 0 (Snapshot) is not available when requesting for MDEntryType=t (Market aggregated statistics).
264			MarketDepth	Y		Depth of market for Book Snapshot / Incremental updates 0 - full book depth 1 - top of book 2 and above - book depth (number of levels, not exceed subscription rights) ⓘ This field is always required even though the members don't request for bid/offer.
265			MDUpdateType			Required if SubscriptionRequestType(263) = 1(Snapshot + Updates). Specifies the type of Market Data update. Valid values: 1 = Incremental refresh
146			InstrmtMDReqGrp/ NoRelatedSym			Number of symbols (instruments) requested.
→	55		Instrument/Symbol	Y		Input value must set to "[N/A]"
→	48		Instrument/SecurityID	C		Input value must set to 0

Tag num.			FIX tag name	Req'd	UD	Description
→	22		Instrument/SecurityIDSource	N		Valid values: M = Marketplace-assigned identifier
267			NoMDEntryTypes	Y		Number of MDEntryType fields requested.
→	269		MDEntryType	Y		Valid values: 0 = Bid 1 = Offer 2 = Trade 3 = Index value 4 = Opening price 5 = Closing Price 6 = Settlement price / IPO price (extension) 7= Trading session high price 8 = Trading session low price 9 = Trading session VWAP B = Trade volume C = Open interest H = Mid price (Equilibrium price) e = Previous closing price (Ever last price) x = Last price (Extension) t = Market aggregated statistics (extension) v = Indicative price (iNAV)
7554			TradeSeqNo	C		Start sequence number of trades to replay If not specified, the client will receive only new trade messages.
			Standard Trailer	Y		

Example Message

- Wildcard request for Bid/Offer

```
8=FIXT.1.1|9=142|35=V|34=2|49=0001|50=MD1|52=20210625-23:15:06.275330890|
56=SET|262=MD-BID-ASK-1605482102752|263=1|264=0|265=1|146=1|55=[N/A]|48=0|267=2|
269=0|269=1|10=024|
```

Tag	Name	Value	Enum description
8	BeginString	FIXT.1.1	
9	BodyLength	142	
35	MsgType	V	MarketDataRequest
34	MsgSeqNum	2	
49	SenderCompID	0001	
50	SenderSubID	MD1	
52	SendingTime	20210625-23:15:06.275330890	
56	TargetCompID	SET	
262	MDReqID	MD-BID-ASK-1605482102752	
263	SubscriptionRequestType	1	Snapshot + Updates (Subscribe)
264	MarketDepth	0	
265	MDUpdateType	1	Incremental refresh
146	NoRelatedSym	1	
55	Symbol	[N/A]	
48	SecurityID	0	
267	NoMDEntryTypes	2	
269	MDEntryType	0	Bid
269	MDEntryType	1	Offer
10	CheckSum	024	

- Wildcard request for trade statistics

```
8=FIXT.1.1|9=157|35=V|34=3|49=0001|50=MD1|52=20210625-23:15:06.275330890|
56=SET|262=MD-STAT-1605482102753|263=1|264=0|265=1|146=1|55=[N/A]|48=0|
267=5|269=4| 269=7|269=8|269=9|269=s|10=013|
```

Tag	Name	Value	Enum description
8	BeginString	FIXT.1.1	
9	BodyLength	157	
35	MsgType	V	MarketDataRequest
34	MsgSeqNum	3	
49	SenderCompID	0001	
50	SenderSubID	MD1	
52	SendingTime	20210625-23:15:06.275330890	
56	TargetCompID	SET	
262	MDReqID	MD-STAT-1605482102753	
263	SubscriptionRequestType	1	Snapshot + Updates (Subscribe)
264	MarketDepth	0	
265	MDUpdateType	1	Incremental refresh
146	NoRelatedSym	1	
55	Symbol	[N/A]	
48	SecurityID	0	
267	NoMDEntryTypes	5	
269	MDEntryType	4	Opening Price
269	MDEntryType	7	Trading Session High Price
269	MDEntryType	8	Trading Session Low Price
269	MDEntryType	9	Trading Session VWAP Price
269	MDEntryType	s	
10	CheckSum	013	

- Trade recovery request

```
8=FIXT.1.1|9=137|35=V|34=9|49=0008|50=MD8|52=20210625-08:10:46.979862860
|56=SET| 262=MD-TRADE-
1|263=1|264=0|265=1|7554=100|146=1|55=[N/A]|48=0|22=M|267=1| 269=2|10=021|
```

```
Tag    | Name                      | Value                  | Enum description
-------------------------------------------------------------------------
     8 | BeginString               | FIXT.1.1               |
     9 | BodyLength                | 137                    |
    35 | MsgType                   | V                      | MarketDataRequest
    34 | MsgSeqNum                 | 9                      |
    49 | SenderCompID              | 0008                   |
    50 | SenderSubID               | MD8                    |
    52 | SendingTime               | 20210625-08:10:46.979862860 |
    56 | TargetCompID              | SET                    |
   262 | MDReqID                   | MD-TRADE-1             |
   263 | SubscriptionRequestType   | 1            | Snapshot + Updates (Subscribe)
   264 | MarketDepth               | 0                      |
   265 | MDUpdateType              | 1                      | Incremental refresh
  7554 | TradeSeqNo                | 100                    | Next expected TradeSeqNo
   146 | NoRelatedSym              | 1                      |
    55 | Symbol                    | [N/A]                  |
    48 | SecurityID                | 0                      |
    22 | SecurityIDSource          | M            | Marketplace-assigned Identifier
   267 | NoMDEntryTypes            | 1                      |
   269 | MDEntryType               | 2                      | Trade
    10 | CheckSum                  | 021                    |
```

6.2 MarketDataSnapshotFullRefresh – Trade Statistics (W, out)

Direction	Out from marketplace
Message code	W
Purpose (FIX standard), only part of it may apply to the addressed scope	The Market Data messages are used as the response to a Market Data Request message. In all cases, one Market Data message refers only to one Market Data Request. It can be used to transmit opening, closing, settlement, high, low, or VWAP prices, the trade volume or open interest for a security, or any combination of these.
Usage and Conditions	In this solution trade statistics per security can be disseminated, including for example the opening, high price, low price or the volume traded. This is sent in MarketDataSnapshotFullRefresh – Trade Statistics (W). Other uses of the MarketDataSnapshotFullRefresh (W) message includes the following: MarketDataSnapshotFullRefresh – Equilibrium Price (W)

	MarketDataSnapshotFullRefresh – Reference Price (W) MarketDataSnapshotFullRefresh – iNAV (W) MarketDataSnapshotFullRefresh – Market Statistics (W)
Limitations	In this solution Market Data is provided as: Snapshot and Update In this solution Market Data is not provided as: Recovery
Response/Acknowledgment	-

Post-Trade data for trade statistics can be disseminated, including for example the opening, the trading session high price, low price, or the volume traded in a security.

- Trade Statistics are sent in separate MarketDataSnapshotFullRefresh – Trade Statistics (W) messages. The Trade Statistics update may trade statistics for several trades, but only for one instrument per message.
- The Trade Statistics update also support cancellations of trades, for which trade statistics may be decreased, rather than increased, and for which the Last Price may be the traded price of a previous trade, since the last trade may be cancelled.
- Cumulative volume is identified by MDEntryType set to B – Trade Volume (aggregated traded quantity). MDEntryType B Trade Volume also includes values Turnover Value, Reported Trades Turnover Quantity, Reported Trades Turnover Value and Total Number of Trades which are represented by a repeating group SecSizesGrp where tag 1178 MDSecSizeType defines the type of size.
- There is no trade statistics message of combination series. Only trade (MDEntryType=2) is provided.
- Price of outright series which is generated from system to support combo-to-combo deal is not reflected in trade statistics messages of outright series. However, volume is still included.
- For series traded in TFEX Night markets, Trade Statistics of previous day will be carried to next trading day. This means trade statistics on day T is calculated from trading data of Night session on date T-1 and Day session on day T. When the clients connect to the system on day T, you will receive carried trade statistics of Night session of day T-1.
- Resetting Trade statistics flow
  - Trade statistics of TFEX Night market will be reset when entering INTERMISSION3_D session (before Pre-Night session). To reset trade statistics, volume will be sent out as zero while prices will be sent out as -2 147 483 648 (min integer) divided by InstrumentPricePrecision e.g. 21,474.83648 when precision = 5.
  - Trade statistics of Equity market and TFEX Day market will be reset as zero when entering RESET_STAT session (please refer to Order Book State Message).

  The members can discard messages after such session if you don't want trading statistics to be cleared. However you have to ensure that the statistics is reset properly in the next trading day.
- Full recovery of Trade Statistics is not supported.

Table 21: MarketDataSnapshotFullRefresh - Trade Statistics(W, out).

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = W

262			MDReqId	C		Conditionally required if this message is in response to a MarketDataRequest(35=V).
55			Instrument/Symbol	Y		Short name of instrument.
48			Instrument/SecurityID	Q		Orderbook ID
22			Instrument/SecurityIDSource	Y		Valid values: M = Marketplace-assigned identifier
268			MDFullGrp/NoMDEntries	Y		Multiple entries
→	269		MDEntryType	Y		Valid values: 4 = Opening price 7= Trading session high price 8 = Trading session low price 9 = Trading session VWAP B = Trade volume C = Open interest s = Last auction price x = Last price (Extension)
→	270		MDEntryPx			
→	271		MDEntrySize			For MDEntryType = 'B', it means Turnover Volume. The value is included trades from all trading types, e.g. auction, AOM and trade report
→	1177		NoOfSecSizes	Q		Multiple Entries, applicable only for MDEntryType = 'B'
→	→	1178	MDSecSizeType			Defines the type of secondary size specified in MDSecSize. Values: 101 = Turnover Value 102 = Trade Report Turnover Quantity 103 = Trade Report Turnover Value 104 = Total Number of Trades
→	→	1179	MDSecSize			The values of MDSecSizeType is 101 and 105 are included trades from all trading types, e.g. auction, auto-match and trade report while 102 and 103 are included only from trade report.

→	273		MDEntryTime			
			Standard Trailer	Y		

Example Message

- Trade statistics

```
8=FIXT.1.1|9=000461|35=W|49=SET|56=MSET|34=29105|57=FSE01|52=20210630-
03:17:15.232594281|262=MD-STAT-1625008504500|55=AAA|48=65863|22=M|268=6|
269=B|271=100000|1177=4|1178=101|1179=1910000.00000|1178=102|1179=0|1178=103|117
9=0.00000|1178=104|1179=1|273=03:17:15.136358289|269=4|270=19.10000|273=03:17:15
.136358289|269=7|270=19.10000|273=03:17:15.136358289|269=8|270=19.10000|273=03:1
7:15.136358289|269=x|270=19.10000|273=03:17:15.136358289|269=9|270=19.10000|273=
03:17:15.136358289|10=036|
```

```
Tag   | Name              | Value                       | Enum description
-----------------------------------------------------------------------
    8 | BeginString       | FIXT.1.1                    |
    9 | BodyLength        | 000461                      |
   35 | MsgType           | W                | MarketDataSnapshotFullRefresh
   49 | SenderCompID      | SET                         |
   56 | TargetCompID      | MSET                        |
   34 | MsgSeqNum         | 29105                       |
   57 | TargetSubID       | FSE01                       |
   52 | SendingTime       | 20210630-03:17:15.232594281 |
  262 | MDReqID           | MD-STAT-1625008504500       |
   55 | Symbol            | AAA                         |
   48 | SecurityID        | 65863                       |
   22 | SecurityIDSource  | M                | Marketplace-assigned Identifier
  268 | NoMDEntries       | 6                           |
  269 | MDEntryType       | B                           | Trade Volume
  271 | MDEntrySize       | 100000                      |
 1177 | NoOfSecSizes      | 4                           |
 1178 | MDSecSizeType     | 101                         | Turnover Value
 1179 | MDSecSize         | 1910000.00000               |
 1178 | MDSecSizeType     | 102                 | Trade Report Turnover Quantity
 1179 | MDSecSize         | 0                           |
 1178 | MDSecSizeType     | 103                 | Trade Report Turnover Value
 1179 | MDSecSize         | 0.00000                     |
 1178 | MDSecSizeType     | 104                         | Total Number of Trades
 1179 | MDSecSize         | 1                           |
  273 | MDEntryTime       | 03:17:15.136358289          |
  269 | MDEntryType       | 4                           | Opening Price
  270 | MDEntryPx         | 19.10000                    |
  273 | MDEntryTime       | 03:17:15.136358289          |
  269 | MDEntryType       | 7                           |Trading Session High Price
  270 | MDEntryPx         | 19.10000                    |
  273 | MDEntryTime       | 03:17:15.136358289          |
  269 | MDEntryType       | 8                           | Trading Session Low Price
  270 | MDEntryPx         | 19.10000                    |
  273 | MDEntryTime       | 03:17:15.136358289          |
  269 | MDEntryType       | x                           | Last price
```

```
  270 | MDEntryPx          | 19.10000                     |
  273 | MDEntryTime        | 03:17:15.136358289           |
  269 | MDEntryType        | 9                            |Trading Session VWAP Price
  270 | MDEntryPx          | 19.10000                     |
  273 | MDEntryTime        | 03:17:15.136358289           |
   10 | CheckSum           | 036                          |
```

- Resetting Trade statistics

```
8=FIXT.1.1|9=000519|35=W|49=SET|56=MSET|34=35280|57=FSED3|52=20211112-
11:30:00.006542437|262=MD-STAT-1636672324703|55=GOH22|48=216670|22=M|268=7|
269=B|271=0|1177=4|1178=101|1179=0.00000|1178=102|1179=0|1178=103|1179=0.00000|
1178=104|1179=0|273=11:30:00.000998568|269=4|270=-21474.83648|
273=11:30:00.000998568|269=7|270=-21474.83648|273=11:30:00.000998568|
269=8|270=-21474.83648|273=11:30:00.000998568|269=x|270=-21474.83648|
273=11:30:00.000998568|269=s|270=-21474.83648|273=11:30:00.000998568|
269=9|270=-21474.83648|273=11:30:00.000998568|10=188|
```

```
Tag    | Name               | Value                    | Enum description
-----------------------------------------------------------------------
    8  | BeginString        | FIXT.1.1                 |
    9  | BodyLength         | 000519                   |
   35  | MsgType            | W                        | MarketDataSnapshotFullRefresh
   49  | SenderCompID       | SET                      |
   56  | TargetCompID       | MSET                     |
   34  | MsgSeqNum          | 35280                    |
   57  | TargetSubID        | FSED3                    |
   52  | SendingTime        | 20211112-11:30:00.006542437 |
  262  | MDReqID            | MD-STAT-1636672324703    |
   55  | Symbol             | GOH22                    |
   48  | SecurityID         | 216670                   |
   22  | SecurityIDSource   | M                        | Marketplace-assigned Identifier
  268  | NoMDEntries        | 7                        |
  269  | MDEntryType        | B                        | Trade Volume
  271  | MDEntrySize        | 0                        |
 1177  | NoOfSecSizes       | 4                        |
 1178  | MDSecSizeType      | 101                      | Turnover Value
 1179  | MDSecSize          | 0.00000                  |
 1178  | MDSecSizeType      | 102                      | Trade Report Turnover Quantity
 1179  | MDSecSize          | 0                        |
 1178  | MDSecSizeType      | 103                      | Trade Report Turnover Value
 1179  | MDSecSize          | 0.00000                  |
 1178  | MDSecSizeType      | 104                      | Total Number of Trades
 1179  | MDSecSize          | 0                        |
  273  | MDEntryTime        | 11:30:00.000998568       |
  269  | MDEntryType        | 4                        | Opening Price
  270  | MDEntryPx          | -21474.83648             |
  273  | MDEntryTime        | 11:30:00.000998568       |
  269  | MDEntryType        | 7                        | Trading Session High Price
  270  | MDEntryPx          | -21474.83648             |
  273  | MDEntryTime        | 11:30:00.000998568       |
  269  | MDEntryType        | 8                        | Trading Session Low Price
  270  | MDEntryPx          | -21474.83648             |
  273  | MDEntryTime        | 11:30:00.000998568       |
  269  | MDEntryType        | x                        | Last price
  270  | MDEntryPx          | -21474.83648             |
  273  | MDEntryTime        | 11:30:00.000998568       |
  269  | MDEntryType        | s                        | Last auction price
  270  | MDEntryPx          | -21474.83648             |
```

```
273 | MDEntryTime        | 11:30:00.000998568      |
269 | MDEntryType        | 9                       | Trading Session VWAP Price
270 | MDEntryPx          | -21474.83648            |
273 | MDEntryTime        | 11:30:00.000998568      |
 10 | CheckSum           | 188                     |
```

6.3 MarketDataSnapshotFullRefresh – Price Depth (MBP) (W, out)

Direction	Out from marketplace
Message code	W
Purpose (FIX standard), only part of it may apply to the addressed scope	The Market Data message for snapshot data of bid/offer. It can be used to transmit a 2-sided book of orders for a security, or any combination of these.
Usage and Conditions	In this solution the MarketDataSnapshotFullRefresh (W) message is used to disseminate Price Depth (MBP) Snapshot, using the message: MarketDataSnapshotFullRefresh – Price Depth (MBP) (W)
Limitations	In this solution Market Data is provided as: Snapshot In this solution Market Data is <u>not</u> provided as: Recovery Updates is provided via MarketDataIncrementalRefresh (X)
Response/Acknowledgment	-

The MarketDataSnapshotFullRefresh – Price Depth (MBP) (W) message is used for the initial MBP snapshot that will be sent after a MarketDataRequest (V) has been made. The snapshot will contain the complete MBP view of the orderbook (however the number of levels shown may be limited by client subscription rights).

- Each market can have different maximum levels of bid and offer, for example, 5 levels for Derivatives market and 10 levels for Equity market.
- The clients will receive different level of bid/offer, which don't exceed the maximum levels of each market, based on their subscription rights.
- The Price Depth (or Market By Price – MBP) view of an Order Book represents an aggregate for each price tier, and there will be one Market Data Entry per side and per price active at a time. This is referred to as an aggregated book. The tag MDBookType = 2 Price Depth is used to indicate this.
- Messages containing bids and/or offers does not contain trade statistics or index prices.
- The message is also sent in the case of an empty book. This is signaled by MDEntryType = J.
- Full recovery of MBP data is not supported; the client will always receive a snapshot followed by incremental update.
- Tag 264 = MarketDepth defines the current actual Depth for the client. It depends on client subscription request and client subscription rights.

Table 22: MarketDataSnapshotFullRefresh - Price Depth(W, out).

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = W
262			MDReqId	C		Conditionally required if this message is in response to a MarketDataRequest(35=V).
55			Instrument/Symbol	Y		Short name of instrument.
48			Instrument/SecurityID	Q		Orderbook ID
22			Instrument/SecurityIDSource	Y		Valid values: M = Marketplace-assigned identifier
1021			MDBookType			Valid values: 2 = Price Depth
264			MarketDepth			Defines the current depth of the book.
268			MDFullGrp/NoMDEntries	Y		Multiple entries
→	269		MDEntryType	Y		Valid values: 0 = Bid 1 = Offer J = Empty book
→	270		MDEntryPx			No MDEntryPx sent out means market orders
→	271		MDEntrySize			
→	273		MDEntryTime			
→	1023		MDPriceLevel			Integer to convey the level of a bid or offer. 1 is the highest level.
			Standard Trailer	Y		

Example Message

- Snapshot with Empty book – MarketDepth is not specified, and will be updated via the first bid/offer message (see example in MBP – Update (X))

```
8=FIXT.1.1|9=000134|35=W|49=SET|56=0001|34=516|57=MD1|
52=20210625-23:15:06.259028538|1021=2|264=0|262=MD-BID-ASK-1605482102752|
55=AAV|48=66067|22=M|268=1| 269=J|10=097|
```

```
Tag   | Name              | Value                     | Enum description
-----------------------------------------------------------------------
    8 | BeginString       | FIXT.1.1                  |
    9 | BodyLength        | 000134                    |
   35 | MsgType           | W                     | MarketDataSnapshotFullRefresh
   49 | SenderCompID      | SET                       |
   56 | TargetCompID      | 0001                      |
   34 | MsgSeqNum         | 516                       |
   57 | TargetSubID       | MD1                       |
   52 | SendingTime       | 20210625-23:15:06.259028538|
 1021 | MDBookType        | 2                         | Price Depth
  264 | MarketDepth       | 0                         | MarketDepth is not specified
  262 | MDReqID           | MD-BID-ASK-1605482102752 |
   55 | Symbol            | AAV                       |
   48 | SecurityID        | 66067                     |
   22 | SecurityIDSource  | M                     | Marketplace-assigned Identifier
  268 | NoMDEntries       | 1                         |
  269 | MDEntryType       | J                         | Empty Book
   10 | CheckSum          | 097                       |
```

- Snapshot of bid/offer

```
8=FIXT.1.1|9=000240|35=W|49=SET|56=0001|34=1311|57=MD1|52=20220303-
09:36:33.220345393|1021=2|264=10|262=MD-BID-ASK-1646300189254|55=AAV|
48=66067|22=M|268=3|269=0|270=2.72000|271=2000|1023=1|269=0|270=2.70000|
271=1000|1023=2|269=1|270=2.74000|271=2000|1023=1|10=238|
```

```
Tag   | Name              | Value                       | Enum description
-------------------------------------------------------------------------
    8 | BeginString       | FIXT.1.1                    |
    9 | BodyLength        | 000240                      |
   35 | MsgType           | W                       | MarketDataSnapshotFullRefresh
   49 | SenderCompID      | SET                         |
   56 | TargetCompID      | 0001                        |
   34 | MsgSeqNum         | 1311                        |
   57 | TargetSubID       | MD1                         |
   52 | SendingTime       | 20220303-09:36:33.220345393 |
 1021 | MDBookType        | 2                           | Price Depth
  264 | MarketDepth       | 10                          |
  262 | MDReqID           | MD-BID-ASK-1646300189254    |
   55 | Symbol            | AAV                         |
   48 | SecurityID        | 66067                       |
   22 | SecurityIDSource  | M                       | Marketplace-assigned Identifier
  268 | NoMDEntries       | 3                           |
  269 | MDEntryType       | 0                           | Bid
  270 | MDEntryPx         | 2.72000                     |
  271 | MDEntrySize       | 2000                        |
 1023 | MDPriceLevel      | 1                           |
  269 | MDEntryType       | 0                           | Bid
  270 | MDEntryPx         | 2.70000                     |
  271 | MDEntrySize       | 1000                        |
 1023 | MDPriceLevel      | 2                           |
  269 | MDEntryType       | 1                           | Offer
  270 | MDEntryPx         | 2.74000                     |
  271 | MDEntrySize       | 2000                        |
 1023 | MDPriceLevel      | 1                           |
   10 | CheckSum          | 238                         |
```

6.4 MarketDataIncrementalRefresh – Price Depth (MBP) Update (X, out)

Direction	Out from marketplace
Message code	X
Purpose (FIX standard), only part of it may apply to the addressed scope	The Market Data message for incremental updates may contain any combination of new, changed, or deleted Market Data Entries, for any combination of instruments.
Usage and Conditions	In this solution the MarketDataIncrementalRefresh (X) message is used to disseminate Price Depth (MBP) Updates, using the message: MarketDataIncrementalRefresh – MBP Update (X).
Limitations	In this solution Market Data is provided as: Update In this solution Market Data is not provided as: Recovery Snapshot is provided via MarketDataSnapshotFullRefresh (W)
Response/Acknowledgment	-

The MarketDataIncrementalRefresh (X) message is used to disseminate Price Depth (MBP) Updates.

- The Incremental Refresh message is very similar in structure to the MarketDataSnapshotFullRefresh – Price Depth (MBP) (W) message. The most notable difference is that it carries only the changes to the Price Depth view, not the full snapshot of an order book.
- Messages containing bids and/or offers does not contain trade statistics or index prices.
- Full recovery of MBP data is not possible; the client will always receive a snapshot followed by incremental updates.
- The message sends only the changed levels by sending MDUpdateAction (279) to be New, Change or Delete. The clients have to maintain bid and offer at client side by using MDPriceLevel (1023) field as key. The MDPriceLevel tag 1023 tells which price level is affected by this incremental update. Please see examples of how to maintain the local order book view in section 9.2.
- Multiple update actions can be in one MBP message. Clients must process the received level items in the same order as received, and in the very order the update items appear within the message.
  During processing one MBP message with multiple update actions, the price levels can temporarily be beyond the Maximum Level. Once after all update items of an MBP message have been processed, clients should drop price levels beyond the Maximum Level, if such exists.

MDUpdateAction	How to handle
0 (New)	• Add record at specific MDPriceLevel of bid/offer • Lower levels are shifted down
1 (Change)	• Update price and quantity at specific MDPriceLevel of bid/offer
2 (Delete)	• Delete records of specific MDPriceLevel of bid/offer

	• Lower levels are shifted upwards

Table 23: MarketDataIncrementalRefresh – Price Depth (MBP) Update (X, out).

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = X
262			MDReqId	C		Conditionally required if this message is in response to a MarketDataRequest(35=V).
1021			MDBookType			Valid values: 2 = Price Depth
268			MDIncGrp/NoMDEntries	Y		Multiple entries
→	279		MDUpdateAction	Y		Type of Market Data update action. Valid values: 0 = New 1 = Change 2 = Delete
→	264		MarketDepth			Can be used to define the current depth of the book. This tag is optionally used, in case the MarketDepth is updated for the order book.
→	269		MDEntryType	Y		Valid values: 0 = Bid 1 = Offer
→	55		Instrument/Symbol	Q		Short name of instrument.
→	48		Instrument/SecurityID	Q		Orderbook ID
→	22		Instrument/SecurityIDSource	Q		Valid values: M = Marketplace-assigned identifier
→	270		MDEntryPx			No price means market orders
→	271		MDEntrySize			

Tag num.			FIX tag name	Req'd	UD	Description
→	1023		MDPriceLevel			Integer to convey the level of a bid or offer. 1 is the highest level. This field is optionally used, and will be used in all cases when MarketDepth (tag 264) is not updated.
			Standard Trailer	Y		

Example Message

- First new bid/offer – There are MDUpdateAction=Change sent out to update MarketDepth of bid/offer

```
8=FIXT.1.1|9=000259|35=X|49=SET|56=0001|34=50413|57=MD1|
52=20220302-04:15:49.028742749|1021=2|262=MD-BID-ASK-1646176624419|268=3|
279=1|264=10|269=0|55=AAV|48=66067|22=M|279=1|264=10|269=1|55=AAV|48=66067|
22=M|279=0|269=0|55=AAV|48=66067|22=M|270=45.00000|271=1000|1023=1|10=216|
```

```
Tag    | Name               | Value                        | Enum description
-------------------------------------------------------------------------
     8 | BeginString        | FIXT.1.1                     |
     9 | BodyLength         | 000259                       |
    35 | MsgType            | X                        | MarketDataIncrementalRefresh
    49 | SenderCompID       | SET                          |
    56 | TargetCompID       | 0001                         |
    34 | MsgSeqNum          | 50413                        |
    57 | TargetSubID        | MD1                          |
    52 | SendingTime        | 20220302-04:15:49.028742749  |
  1021 | MDBookType         | 2                            | Price Depth
   262 | MDReqID            | MD-BID-ASK-1646176624419     |
   268 | NoMDEntries        | 3                            |
   279 | MDUpdateAction     | 1                            | Change
   264 | MarketDepth        | 10                           | To update MarketDepth
   269 | MDEntryType        | 0                            | Bid
    55 | Symbol             | AAV                          |
    48 | SecurityID         | 66067                        |
    22 | SecurityIDSource   | M                        | Marketplace-assigned Identifier
   279 | MDUpdateAction     | 1                            | Change
   264 | MarketDepth        | 10                           | To update MarketDept
   269 | MDEntryType        | 1                            | Offer
    55 | Symbol             | AAV                          |
    48 | SecurityID         | 66067                        |
       |  22                | M                            |
   279 | MDUpdateAction     | 0                            | New
   269 | MDEntryType        | 0                            | Bid
    55 | Symbol             | AAV                          |
    48 | SecurityID         | 66067                        |
    22 | SecurityIDSource   | M                        | Marketplace-assigned Identifier
   270 | MDEntryPx          | 45.00000                     |
   271 | MDEntrySize        | 1000                         |
  1023 | MDPriceLevel       | 1                            |
    10 | CheckSum           | 216                          |
```

- New bid/offer level

```
8=FIXT.1.1|9=000164|35=X|49=SET|56=0001|34=19866|57=MD1|
52=20210628-01:33:29.703793934|1021=2|262=MD-BID-ASK-1605482102752|268=1|
279=0|269=1|55=AAA|48=66067|22=M| 270=18.50000|271=100|1023=1|10=202|
```

Tag	Name	Value	Enum description
8	BeginString	FIXT.1.1	
9	BodyLength	000164	
35	MsgType	X	MarketDataIncrementalRefresh
49	SenderCompID	SET	
56	TargetCompID	0001	
34	MsgSeqNum	19866	
57	TargetSubID	MD1	
52	SendingTime	20210628-01:33:29.703793934	
1021	MDBookType	2	Price Depth
262	MDReqID	MD-BID-ASK-1605482102752	
268	NoMDEntries	1	
279	MDUpdateAction	0	New
269	MDEntryType	1	Offer
55	Symbol	AAA	
48	SecurityID	66067	
22	SecurityIDSource	M	Marketplace-assigned Identifier
270	MDEntryPx	18.50000	
271	MDEntrySize	100	
1023	MDPriceLevel	1	At price level 1
10	CheckSum	202	

- Delete bid/offer level

```
8=FIXT.1.1|9=000183|35=X|49=SET|56=0001|34=20005|57=MD1|
52=20210628-01:34:38.253616336|1021=2|262=MD-BID-ASK-1605482102752|268=2|
279=2|269=0|55=AAA|48=66067|22=M|1023=1|279=2|269=1|55=AAA|48=66067|
22=M|1023=1|10=096|
```

Tag	Name	Value	Enum description
8	BeginString	FIXT.1.1	
9	BodyLength	000183	
35	MsgType	X	MarketDataIncrementalRefresh
49	SenderCompID	SET	
56	TargetCompID	0001	
34	MsgSeqNum	20005	
57	TargetSubID	MD1	
52	SendingTime	20210628-01:34:38.253616336	
1021	MDBookType	2	Price Depth
262	MDReqID	MD-BID-ASK-1605482102752	
268	NoMDEntries	2	
279	MDUpdateAction	2	Delete
269	MDEntryType	0	Bid
55	Symbol	AAA	
48	SecurityID	66067	
22	SecurityIDSource	M	Marketplace-assigned Identifier
1023	MDPriceLevel	1	At price level 1
279	MDUpdateAction	2	Delete
269	MDEntryType	1	Offer
55	Symbol	AAA	
48	SecurityID	66067	
22	SecurityIDSource	M	Marketplace-assigned Identifier
1023	MDPriceLevel	1	At price level 1
10	CheckSum	096	

- Update bid/offer

```
8=FIXT.1.1|9=000163|35=X|49=SET|56=0001|34=7632|57=MD1|
52=20210628-01:42:51.691548789|1021=2|262=MD-BID-ASK-1605654903025|268=1|
279=1|269=0|55=AAA|48=66334|22=M|270=28.00000|271=200|1023=3|10=134|
```

Tag	Name	Value	Enum description
8	BeginString	FIXT.1.1	
9	BodyLength	000163	
35	MsgType	X	MarketDataIncrementalRefresh
49	SenderCompID	SET	
56	TargetCompID	0001	
34	MsgSeqNum	7632	
57	TargetSubID	MD1	
52	SendingTime	20210628-01:42:51.691548789	
1021	MDBookType	2	Price Depth
262	MDReqID	MD-BID-ASK-1605654903025	
268	NoMDEntries	1	
279	MDUpdateAction	1	Change
269	MDEntryType	0	Bid
55	Symbol	AAA	
48	SecurityID	66334	
22	SecurityIDSource	M	Marketplace-assigned Identifier
270	MDEntryPx	28.00000	
271	MDEntrySize	200	
1023	MDPriceLevel	3	At price level 3
10	CheckSum	134	

- Multiple changes of bid/offer level

```
8=FIXT.1.1|9=000204|35=X|49=SET|56=0001|34=26268|57=MD1|
52=20210628-07:26:43.707036915|1021=2|262=MD-BID-ASK-1605654903025|
268=2|279=2|269=0|55=AAA|48=65689|22=M|1023=1|279=1|269=1|
55=AAA|48=65689|22=M|270=20.00000| 271=100|1023=1|10=032|
```

Tag	Name	Value	Enum description
8	BeginString	FIXT.1.1	
9	BodyLength	000104	
35	MsgType	X	MarketDataIncrementalRefresh
49	SenderCompID	SET	
56	TargetCompID	0001	
34	MsgSeqNum	26268	
57	TargetSubID	MD1	
52	SendingTime	20210628-07:26:43.707036915	
1021	MDBookType	2	Price Depth
262	MDReqID	MD-BID-ASK-1605654903025	
268	NoMDEntries	2	
279	MDUpdateAction	2	Delete
269	MDEntryType	0	Bid
55	Symbol	AAA	
48	SecurityID	65689	
22	SecurityIDSource	M	Marketplace-assigned Identifier
1023	MDPriceLevel	1	At price level 1
279	MDUpdateAction	1	Change
269	MDEntryType	1	Offer
55	Symbol	AAA	
48	SecurityID	65689	
22	SecurityIDSource	M	Marketplace-assigned Identifier
270	MDEntryPx	20.00000	
271	MDEntrySize	100	
1023	MDPriceLevel	1	At price level 1
10	CheckSum	032	

6.5 MarketDataSnapshotFullRefresh – Equilibrium (W, out)

Equilibrium Prices are sent in separate MarketDataSnapshotFullRefresh – Equilibrium (W) messages.

- An order book may go into an auction state e.g. Pre-Open where orders are allowed but no matching occurs.
- When the clients request for Equilibrium price, you will get information for both equilibrium price (MDEntryType=H) and Imbalance (MDEntryType=A) disseminated via MD Snapshot Full message.
- The Imbalance quantity is calculated from bid – ask quantity at matched price. If the imbalance is negative, the surplus is on the ask side.
- When the auction deal is matched, the equilibrium price is cleared by sending out as -2 147 483 648 (min integer) divided by InstrumentPricePrecision e.g. 21,474.83648 when precision = 5. This means that the equilibrium price will not be carried over to the next session.
- There are some special cases related to market order (ATO/ATC/MP) that equilibrium price can be less than lower price limit or greater than upper price limit for 1 tick size. This means that the auction trade price may be outside of price range limit (e.g. lower price limit - 1 tick size or upper price limit + 1 tick size).
- Full recovery of Equilibrium Prices is not supported.

Table 24: MarketDataSnapshotFullRefresh - Equilibrium(W, out).

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = W
262			MDReqId	C		Conditionally required if this message is in response to a MarketDataRequest(35=V).
55			Instrument/Symbol	Y		Short name of instrument
48			Instrument/SecurityID	Q		Orderbook ID
22			Instrument/SecurityIDSource	Q		Valid values: M = Marketplace-assigned identifier
268			MDFullGrp/NoMDEntries	Y		Up to 2 for equilibrium price and imbalance
→	269		MDEntryType	Y		Valid values: H = Mid price (Equilibrium Price) A = Imbalance
→	270		MDEntryPx	Q		Equilibrium Price if MDEntryType=H
→	271		MDEntrySize			Matched quantity if MDEntryType=H Imbalance quantity if MDEntryType=A. If the imbalance is negative, the surplus is on the Ask side.
→	273		MDEntryTime			
			Standard Trailer	Y		

Example Message

- Equlibrium price and Imbalance

```
8=FIXT.1.1|9=000173|35=W|49=SET|56=MSET|34=40773|57=FSEE3|
52=20211112-09:30:03.172843351|262=MD-AUCTION-1636672264883|55=BAY|
48=65615|22=M|268=2|269=H|270=29.00000|271=300|269=A|271=700|10=156|
```

Tag	Name	Value	Enum description
8	BeginString	FIXT.1.1	
9	BodyLength	000173	
35	MsgType	W	MarketDataSnapshotFullRefresh
49	SenderCompID	SET	
56	TargetCompID	MSET	
34	MsgSeqNum	40773	
57	TargetSubID	FSEE3	
52	SendingTime	20211112-09:30:03.172843351	
262	MDReqID	MD-AUCTION-1636672264883	
55	Symbol	BAY	
48	SecurityID	65615	
22	SecurityIDSource	M	Marketplace-assigned Identifier
268	NoMDEntries	2	
269	MDEntryType	H	Mid Price
270	MDEntryPx	29.00000	
271	MDEntrySize	300	
269	MDEntryType	A	Imbalance
271	MDEntrySize	700	
10	CheckSum	156	

- Resetting Equlibrium price and Imbalance

```
8=FIXT.1.1|9=000173|35=W|49=SET|56=MSET|34=40885|57=FSEE3|
52=20211112-09:32:47.371805534|262=MD-AUCTION-1636672264883|55=BAY|
48=65615|22=M|268=2|269=H|270=-21474.83648|271=0|269=A|271=0|10=195|
```

Tag	Name	Value	Enum description
8	BeginString	FIXT.1.1	
9	BodyLength	000173	
35	MsgType	W	MarketDataSnapshotFullRefresh
49	SenderCompID	SET	
56	TargetCompID	MSET	
34	MsgSeqNum	40885	
57	TargetSubID	FSEE3	
52	SendingTime	20211112-09:32:47.371805534	
262	MDReqID	MD-AUCTION-1636672264883	
55	Symbol	BAY	
48	SecurityID	65615	
22	SecurityIDSource	M	Marketplace-assigned Identifier
268	NoMDEntries	2	
269	MDEntryType	H	Mid Price
270	MDEntryPx	-21474.83648	
271	MDEntrySize	0	
269	MDEntryType	A	Imbalance
271	MDEntrySize	0	
10	CheckSum	195	

6.6 MarketDataIncrementalRefresh – Trade (X, out)

Direction	Out from marketplace
Message code	X
Purpose (FIX standard), only part of it may apply to the addressed scope	The Market Data message for incremental updates may contain any combination of new, changed, or deleted Market Data Entries, for any combination of instruments.
Usage and Conditions	In this solution the MarketDataIncrementalRefresh (X) message is used to disseminate Trade Updates, using the message: MarketDataIncrementalRefresh – Trade (X).
Limitations	In this solution Market Data is provided as: Update and Recovery In this solution Market Data is not provided as: Snapshot
Response/Acknowledgment	-

A trade is sent as a separate instruction within a MarketDataIncrementalRefresh message. Trades are only used to update the Ticker. The Trade instruction should not be used to update the view of the orderbook. A separate instruction is sent to update the book as a result of a trade.

Tag 574 Match Type specifies type of deal as follows:

- **Auction:** deals which matched with auction price when Pre-open state changes to Open state. The system aggregates those deals to one trade ticker message for each order book.
- **Auto Match:** deals which automatically match by the system
- **Trade Report:** deals from the negotiation outside the system before entering to the system
- **Combo vs Combo:** deals which are generated from matching between combination orders. Trade tickers of both combination series and its outright series are set as Combo-to-Combo deal source.

Please note that trading prices may be higher or lower than the price limit under certain circumstances. Such trading prices are also reflected in trade statistics.

- Auction trade price, as mentioned in Equilibrium Price message.
- Matched price of outright and combination series which deal source is Combo to Combo deal source due to combination orders matching behavior. SET recommends members to display Combo to Combo flag to indicate that price can exceed price limit.

Table 25: MarketDataIncrementalRefresh – Trade (X, out).

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = X
262			MDReqId	C		Conditionally required if this message is in response to a MarketDataRequest(35=V).

Tag num.			FIX tag name	Req'd	UD	Description
268			MDIncGrp/NoMDEntries	Y		Multiple entries
→	279		MDUpdateAction	Y		Type of Market Data update action. Valid values: 0 = New 2 = Delete
→	269		MDEntryType	Y		Valid values: 2 = Trade
→	278		MDEntryID	Y		Match ID assigned by the matching engine
→	55		Instrument/Symbol	Q		Short name of instrument.
→	48		Instrument/SecurityID	Q		Orderbook ID
→	22		Instrument/SecurityIDSource	Q		Valid values: M = Marketplace-assigned identifier
→	270		MDEntryPx			Price
→	271		MDEntrySize			Quantity
	273		MDEntryTime			Time of trade
	574		MatchType			The point in the matching process at which this trade was matched. Valid values 2 = Two Party Trade Report 4 = Auto Match 5 = Cross Auction 101 = Combo vs Combo ⓘ Combo vs Combo is applicable only for Derivatives market
	828		TrdType			Trade report code. Only present if MatchType (574) = 2 (Two Party Trade Report) Extension: The actual ID of a Trade report code is used, not the enumerated values listed in the standard FIX specification. Valid values for Equity market:

Tag num.			FIX tag name	Req'd	UD	Description
						- 0 = For auction deal and trade report - 10-19 = TR_BIGLOT related (Deal which has a criteria of big lot transaction) - 20-29 = TR_BUYIN related (Deal for Buy-in purpose) - 30-39 = TR_OFFHOUR related (Deal during Run-off period) - 40-49 = TR_FOREIGN related (Deal from foreign stocks which is not TR_BIGLOT) - 50-99 = Other Equity report types Valid values for Derivatives market: - 0 = For auction deal and auto-match - 100 - 199 : Normal Trade Report - 200 - 229 : EFP (Exchange of Futures for Physicals) - 230 - 249 : Other trade report types ⓘ The members can see list of trade report types from the "SET CONNECT Guideline TradeReport" document.
	2446		AggressorSide			Side of aggressive order resulting in match event. Valid values: 1 = Buy 2 = Sell ⓘ No value sent out if no aggressor side deal e.g. trade report, auction and combo-match-outright deal (of combination series record)
7554			TradeSeqNo			Trade sequence number. This number is unique for all instruments in the system. There may be gaps in this number. ⓘ Used for trade replay request
			Standard Trailer	Y		

Example Message

```
8=FIXT.1.1|9=000198|35=X|49=SET|56=0001|34=6290|57=MD1|52=20201125-03:40:20.887|
262=MD-TRADE-1606272079715|268=1|279=0|269=2|278=661FBC0100000004|55=TQM|
48=66314|22=M|270=61.00000|271=100|273=03:40:20.876|574=4|2446=2|7554=110|10=160|
```

Tag	Name	Value	Enum description
8	BeginString	FIXT.1.1	
9	BodyLength	000198	
35	MsgType	X	MarketDataIncrementalRefresh
49	SenderCompID	SET	
56	TargetCompID	0001	
34	MsgSeqNum	6290	
57	TargetSubID	MD1	
52	SendingTime	20201125-03:40:20.887	
262	MDReqID	MD-TRADE-1606272079715	
268	NoMDEntries	1	
279	MDUpdateAction	0	New
269	MDEntryType	2	Trade
278	MDEntryID	661FBC0100000004	
55	Symbol	TQM	
48	SecurityID	66314	
22	SecurityIDSource	M	Marketplace-assigned Identifier
270	MDEntryPx	61.00000	
271	MDEntrySize	100	
273	MDEntryTime	03:40:20.876	
574	MatchType	4	Auto-match
2446	AggressorSide	2	Sell-side
7554	TradeSeqNo	110	
10	CheckSum	160	

6.7 MarketDataSnapshotFullRefresh – Reference Prices (W, out)

Reference Prices including Ever last price (excluding trades from the current trading day), Closing price and Settlement prices are sent in separate MarketDataSnapshotFullRefresh – Reference Prices (W) messages for related instruments.

The clients will receive latest values of related reference prices when request for snapshot data. Ever last price (MDEntryType=e) is updated only in start of day; while the other price types are updated both of start of day and after market is closed. Please note that the reference prices will be sent out to update values only to the clients who request for updates.

The dissemination behaviors of each price type are as follows:

- **MDEntrType=e**: **Previous close price (Ever last price)** is sent out only in start of day and not sent out after market is closed even though the instruments have trades.

  Updated MDEntryDate and MDEntryTime are the actual trading date/time based on the calendar date. For example, the date/time of ever last prices of the instruments which are traded in the night session, are the previous calendar date/time.

  In case that the Equity instrument has split par action, the client will receive adjusted ever last price after the corporate action process. MDEntryDate and MDEntryTime are also updated.

- **MDEntrType=5**: **Closing price** is sent out after market closed to update latest traded prices (exclude trade reports). If the instruments have no trade, closing price is carried from previous closing price. Updated MDEntryDate and MDEntryTime are updated to current trading day.

  In case that the Equity instrument has split par action, the client will receive adjusted closing price after

the corporate action process.

- **MDEntrType=6**: is used for different purposes as follows
  - **Settlement price**: is sent out for TFEX series after market closed for updated prices.
  - **Reference price**: In case of new instruments which are created from corporation action, their reference prices will be carried from the old instruments. For TFEX series, reference price will be sent via MDEntrType=6. This reference price is used to calculate last trade price change of TFEX series.
  - **IPO price**: is sent for Equity instrument for Initial Public Offering price. If new listed stock is from merger of companies, IPO price will be not sent out.

Moreover Ever last price, Closing price and IPO prices can be reset for some cases e.g. when stock which is suspended for a long period is back to trade. Reset price is sent out as -2 147 483 648 (min integer) divided by InstrumentPricePrecision e.g. 21,474.83648 when precision = 5.

Full recovery of Reference Price is not supported.

Table 26: MarketDataSnapshotFullRefresh - Trade Statistics(W, out).

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = W
262			MDReqId	C		Conditionally required if this message is in response to a MarketDataRequest(35=V).
55			Instrument/Symbol	Y		Short name of instrument.
48			Instrument/SecurityID	Q		Orderbook ID
22			Instrument/SecurityIDSource	Y		Valid values: M = Marketplace-assigned identifier
268			MDFullGrp/NoMDEntries	Y		Multiple entries
→	269		MDEntryType	Y		Valid values: 5 = Closing Price 6 = Settlement price for TFEX (only outright series) / IPO price for Equity (extension) e = Previous closing price (Ever last price)
→	270		MDEntryPx			
→	272		MDEntryDate			- Only present if other than current day
→	273		MDEntryTime			
			Standard Trailer	Y		

Example Message

```
8=FIXT.1.1|9=000258|35=W|49=SET|56=MSET|34=7076|57=FSE01|52=20210701-
13:34:08.301666701|262=MD-REFPRICE-1625146479431|55=BBLU21|48=196680|22=M|
268=3|269=5|270=115.27000|273=09:55:00.003466084|269=e|270=115.27000|
273=17:00:00.001000000|269=6|270=115.27000|273=10:39:49.182897853|10=089|
```

```
Tag   | Name              | Value                        | Enum description
-----------------------------------------------------------------------------
    8 | BeginString       | FIXT.1.1                     |
    9 | BodyLength        | 000258                       |
   35 | MsgType           | W                      | MarketDataSnapshotFullRefresh
   49 | SenderCompID      | SET                          |
   56 | TargetCompID      | MSET                         |
   34 | MsgSeqNum         | 7076                         |
   57 | TargetSubID       | FSE01                        |
   52 | SendingTime       | 20210701-13:34:08.301666701  |
  262 | MDReqID           | MD-REFPRICE-1625146479431    |
   55 | Symbol            | BBLU21                       |
   48 | SecurityID        | 196680                       |
   22 | SecurityIDSource  | M                      | Marketplace-assigned Identifier
  268 | NoMDEntries       | 3                            |
  269 | MDEntryType       | 5                            | Closing Price
  270 | MDEntryPx         | 115.27000                    |
  273 | MDEntryTime       | 09:55:00.003466084           |
  269 | MDEntryType       | e                            | Ever last price
  270 | MDEntryPx         | 115.27000                    |
  273 | MDEntryTime       | 17:00:00.001000000           |
  269 | MDEntryType       | 6                            | Settlement Price
  270 | MDEntryPx         | 115.27000                    |
  273 | MDEntryTime       | 10:39:49.182897853           |
   10 | CheckSum          | 089                          |
```

6.8 MarketDataSnapshotFullRefresh – iNAV (W, out)

Indicative Prices (iNAV) are sent in separate MarketDataSnapshotFullRefresh – Index (W) messages. iNAV is disseminated as Market Data entries with MDEntryType (269) set to v – Indicative Price (a custom value). The iNAV data is available only for ETF (Exchanged Traded Fund).

Table 27: MarketDataSnapshotFullRefresh - iNAV(W, out).

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = W
262			MDReqId	C		Conditionally required if this message is in response to a MarketDataRequest(35=V).
55			Instrument/Symbol	Y		Short name of iNAV instrument
48			Instrument/SecurityID	Q		Orderbook ID
22			Instrument/SecurityID Source	Q		Valid values: M = Marketplace-assigned identifier

Tag num.			FIX tag name	Req'd	UD	Description
268			MDFullGrp/NoMDEntries	Y		Always 1 – a single MD Entry
→	269		MDEntryType	Y		Valid values: v = Indicative Price
→	270		MDEntryPx			Indicative NAV
→	272		MDEntryDate			Date of iNAV data. Only present if other than current day
→	273		MDEntryTime			Time of iNAV data
451			NetChangePrevDay			iNAV change from previous day
30023			PercentChange			Percentage of iNAV change from previous day
			Standard Trailer	Y		

Example Message

```
8=FIXT.1.1|9=000173|35=W|49=SET|56=0001|34=13763|57=MD1|
52=20210625-04:35:30.003466084|262=MD-INAV-1606272079726|55=1DIV|48=66051|22=M|
451=0.04850|30023=0.65|268=1|269=v|270=7.46570|273=04:35:30.000|10=248|
```

```
Tag    | Name               | Value                  | Enum description
-----------------------------------------------------------------
    8  | BeginString        | FIXT.1.1               |
    9  | BodyLength         | 000173                 |
   35  | MsgType            | W                      | MarketDataSnapshotFullRefresh
   49  | SenderCompID       | SET                    |
   56  | TargetCompID       | 0001                   |
   34  | MsgSeqNum          | 13763                  |
   57  | TargetSubID        | MD1                    |
   52  | SendingTime        | 20210625-04:35:30.003466084  |
  262  | MDReqID            | MD-INAV-1606272079726 |
   55  | Symbol             | 1DIV                   |
   48  | SecurityID         | 66051                  |
   22  | SecurityIDSource   | M                    | Marketplace-assigned Identifier
  451  | NetChgPrevDay      | 0.04850                |
30023  | PercentChange      | 0.65                   |
  268  | NoMDEntries        | 1                      |
  269  | MDEntryType        | v                      |
  270  | MDEntryPx          | 7.46570                |
  273  | MDEntryTime        | 04:35:30.000           |
   10  | CheckSum           | 248                    |
```

6.9 MarketDataSnapshotFullRefresh – Index (W, out)

Direction	Out from marketplace
Message code	W
Purpose (FIX standard), only part of it may apply to the addressed scope	The Market Data message for full refresh updates are sent out for Index instruments.
Usage and Conditions	In this solution the MarketDataSnapshotFullRefresh (W) message is used to disseminate Index Snapshot and Updates, using the message: MarketDataSnapshotFullRefresh – Index (W).
Limitations	In this solution Market Data is provided as: Snapshot and Update In this solution Market Data is not provided as: Recovery
Response/Acknowledgment	-

Index Prices are sent in separate MarketDataSnapshotFullRefresh – Index (W) messages. Index Prices are disseminated as Market Data Snapshot entries with MDEntryType (269) set to 3 – Index value.

Normally SET provides Index at 15-second intervals. Index message begins to transmit after market opens.

There are some special cases of index transmission as follows:

- For Index without constituents such as MINE index, there is no index messages sent out during the day. However, after the market closes, the most recent index value will be transmitted.
- There may be Index message sent out (with the most recent index value) during Pre-open period if all constituents of the index are halted/suspended at instrument level.

Table 28: MarketDataSnapshotFullRefresh - Index(W, out).

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = W
262			MDReqId	C		Conditionally required if this message is in response to a MarketDataRequest(35=V).
55			Instrument/Symbol	Y		Short name of index instrument
48			Instrument/SecurityID	Q		Orderbook ID for the Index
22			Instrument/SecurityID Source	Q		Valid values: M = Marketplace-assigned identifier

Tag num.			FIX tag name	Req'd	UD	Description
268			MDFullGrp/NoMDEntries	Y		
→	269		MDEntryType	Y		Valid values: 3 = Index value 4 = Opening Price (open index of the day) 5 = Closing Price e = Previous Closing Price
→	270		MDEntryPx			Index Value
→	272		MDEntryDate			Date of Index, Only present if other than current day
→	273		MDEntryTime			Time of Index
→	332		HighPx			Highest Index value of the day
→	333		LowPx			Lowest Index value of the day
→	451		NetChgPrevDay			Net change of Index value from previous day.
→	6140		TotalTurnover			Total turnover
→	30023		PercentChange			Percent change of Index value from previous day
→	30024		TotalVolume			Total volume
			Standard Trailer	Y		

Example Message

- Index information is disseminated.

```
8=FIXT.1.1|9=000313|35=W|49=SET|56=MSET|34=48922|57=FSE03|52=20210910-
03:58:45.061417959|262=MD-INDEX-1631229304446|55=SET|48=85536|22=M|268=3|
269=3|270=1503.09|273=03:58:45.061064596|332=1503.09|333=1502.90|451=0.19|30023=
0.01|30024=100|6140=3500.00|269=4|270=1502.90|273=03:58:45.061064596|269=e|270=1
502.90|273=03:58:45.061064596|10=037|
```

Tag	Name	Value	Enum description
8	BeginString	FIXT.1.1	
9	BodyLength	000313	
35	MsgType	W	MarketDataSnapshotFullRefresh
49	SenderCompID	SET	
56	TargetCompID	MSET	
34	MsgSeqNum	48922	
57	TargetSubID	FSE03	
52	SendingTime	20210910-03:58:45.061417959	
262	MDReqID	MD-INDEX-1631229304446	
55	Symbol	SET	
48	SecurityID	85536	
22	SecurityIDSource	M	Marketplace-assigned Identifier
268	NoMDEntries	3	
269	MDEntryType	3	Index Value
270	MDEntryPx	1503.09	
273	MDEntryTime	03:58:45.061064596	
332	HighPx	1503.09	High Index
333	LowPx	1502.90	Low Index
451	NetChgPrevDay	0.19	
30023	PercentChange	0.01	
30024	TotalVolume	100	
6140	TotalTurnover	3500.00	
269	MDEntryType	4	Opening Price
270	MDEntryPx	1502.90	
273	MDEntryTime	03:58:45.061064596	
269	MDEntryType	e	Previous Closing Price
270	MDEntryPx	1502.90	
273	MDEntryTime	03:58:45.061064596	
10	CheckSum	037	

- When market is closed, closing index is disseminated.

```
8=FIXT.1.1|9=000355|35=W|49=SET|56=MSET|34=156676|57=FSE03|52=20210910-
10:04:25.100019307|262=MD-INDEX-1631229304446|55=SET|48=85536|22=M|268=4|
269=3|270=1503.09|273=10:04:25.099067367|332=1503.09|333=1502.90|451=0.19|30023=
0.01|30024=100|6140=3500.00|269=4|270=1502.90|273=10:04:25.099067367|269=5|270=1
503.09|273=10:04:25.099067367|269=e|270=1502.90|273=10:04:25.099067367|10=009|
```

Tag	Name	Value	Enum description
8	BeginString	FIXT.1.1	
9	BodyLength	000355	
35	MsgType	W	MarketDataSnapshotFullRefresh
49	SenderCompID	SET	
56	TargetCompID	MSET	
34	MsgSeqNum	156676	
57	TargetSubID	FSE03	
52	SendingTime	20210910-10:04:25.100019307	
262	MDReqID	MD-INDEX-1631229304446	
55	Symbol	SET	
48	SecurityID	85536	
22	SecurityIDSource	M	Marketplace-assigned Identifier
268	NoMDEntries	4	
269	MDEntryType	3	Index Value
270	MDEntryPx	1503.09	
273	MDEntryTime	10:04:25.099067367	
332	HighPx	1503.09	
333	LowPx	1502.90	
451	NetChgPrevDay	0.19	
30023	PercentChange	0.01	
30024	TotalVolume	100	
6140	TotalTurnover	3500.00	
269	MDEntryType	4	Opening Price
270	MDEntryPx	1502.90	
273	MDEntryTime	10:04:25.099067367	
269	MDEntryType	5	Closing Price
270	MDEntryPx	1503.09	
273	MDEntryTime	10:04:25.099067367	
269	MDEntryType	e	Previous Closing Price
270	MDEntryPx	1502.90	

6.10 MarketDataSnapshotFullRefresh – Market Statistics (W, out)

Direction	Out from marketplace
Message code	W
Purpose (FIX standard), only part of it may apply to the addressed scope	The Market Data message for full refresh updates are sent out for Market Statistics IDs.
Usage and Conditions	In this solution the MarketDataSnapshotFullRefresh (W) message is used to disseminate update of Market Statistics, using the message: MarketDataSnapshotFullRefresh – Market Statistics (W).

Limitations	In this solution Market Data is provided as: Update In this solution Market Data is not provided as: Snapshot and Recovery
Response/Acknowledgment	-

Market statistics are aggregation of trade data across markets. Normally SET provides Market Statistics at 15-second intervals.

- For TFEX Night markets, Market Statistics of previous day will be carried to next trading day. This means market statistics on day T is calculated from trading data of Night session on date T-1 and Day session on day T. When the clients connect to the system on day T, you will receive carried market statistics of Night session of day T-1.
- Resetting Market statistics flow (same as instrument trade statistics)
  - Market statistics of TFEX Night market will be reset to zero after entering INTERMISSION3_D session (before Pre-Night session).
  - Market statistics of Equity market and TFEX Day market will be reset as zero after entering RESET_STAT session.

When requesting Market Statistics, SubscriptionRequestType(263) = 1(Snapshot + Updates) should be used. Please note that the system does not provide snapshot of Market Statistics. Clients can expect only updated Market Statistics which are usually sent at 15-second intervals.

Table 19: MarketDataSnapshotFullRefresh - Market Statistics(W, out).

Tag num.			FIX tag name	Req'd	UD	Description	Equity	TFEX
			Standard Header	Y		MsgType = W		
262			MDReqId	C		Conditionally required if this message is in response to a MarketDataRequest(35=V).	✓	✓
268			MDFullGrp/NoMDEntries	Y		Always 1 (single entry)	✓	✓
→	269		MDEntryType	Y		Valid values: t = Market aggregated statistics (extension)	✓	✓
→	278		MDEntryID	Y		Market statistics identifier e.g. SET, MAI, TXI, TXS and etc. The possible values of Market Statistics ID might not the same as those of Market Segment ID or SecurityClassification (Trading list / Market) because the system has capability to	✓	✓

Tag num.			FIX tag name	Req'd	UD	Description	Equity	TFEX
						calculate market statistics across multiple markets.		
→	15		Currency	Y		Trading currency e.g. THB, USD and etc. For TFEX markets, this field can be blank in case that there are multiple currencies in the same Market Statistics ID.	✓	✓
→	273		MDEntryTime	Y		Market statistics time	✓	✓
→	6139		TotalTrades	Y		Total number of trades across the corresponding market segment and currency	✓	✓
→	6140		TotalTurnover	Y		Total quantity traded across the corresponding market segment and currency	✓	N/A
→	30024		TotalVolume	Y		Price * quantity for all trades in the corresponding market segment and currency	✓	✓
→	30025		UpVolume	Y		Total volume of securities traded that current price change is positive, compared to previous closing price	✓	N/A
→	30026		DownVolume	Y		Total volume of securities traded that current price change is negative, compared to previous closing price	✓	N/A
→	30027		NoChangeVolume	Y		Total volume of securities traded that current price change is zero, compared to previous closing price	✓	N/A
→	30028		UpShares	Y		Number of securities that have a trade and current price change is positive compared to previous closing price	✓	N/A
→	30029		DownShares	Y		Number of securities that have a trade and current price change	✓	N/A

Tag num.			FIX tag name	Req'd	UD	Description	Equity	TFEX
						is negative compared to previous closing price		
→	30030		NoChangeShares	Y		Number of securities that have a trade and current price change is zero compared to previous closing price	✓	N/A
			Standard Trailer	Y				

Example Message

```
8=FIXT.1.1|9=000217|35=W|49=SET|56=0001|34=194311|57=MD1|52=20201124-15:59:39.933|
262=MD-MKTSTAT-1606173304846|268=1|269=t|278=SET|15=THB|273=15:59:39.931|
30024=29700| 30025=28300|30026=1400|30027=0|30028=8|30029=3|30030=0|6139=72|
6140=5024335|10=155|
```

```
Tag    | Name           | Value                     | Enum description
-----------------------------------------------------------------
    8  | BeginString    | FIXT.1.1                  |
    9  | BodyLength     | 000217                    |
   35  | MsgType        | W                         | MarketDataSnapshotFullRefresh
   49  | SenderCompID   | SET                       |
   56  | TargetCompID   | 0001                      |
   34  | MsgSeqNum      | 194311                    |
   57  | TargetSubID    | MD1                       |
   52  | SendingTime    | 20201124-04:59:39.933     |
  262  | MDReqID        | MD-MKTSTAT-1606173304846  |
  268  | NoMDEntries    | 1                         |
  269  | MDEntryType    | t                         | Market aggregated statistics
  278  | MDEntryID      | SET                       |
   15  | Currency       | THB                       |
  273  | MDEntryTime    | 04:59:39.931              |
30024  | TotalVolume    | 29700                     |
30025  | UpVolume       | 28300                     |
30026  | DownVolume     | 1400                      |
30027  | NoChangeVolume| 0                          |
30028  | UpShares       | 8                         |
30029  | DownShares     | 3                         |
30030  | NoChangeShares| 0                          |
 6139  | TotalTrades    | 72                        |
 6140  | TotalTurnover  | 5024335                   |
   10  | CheckSum       | 155                       |
```

6.11 MarketDataRequestReject (Y, out)

Direction	Out from Marketplace
Message code	Y
Purpose (FIX standard), only part of it may apply to the addressed scope	The Market Data Request Reject is used when the broker cannot honor the Market Data Request, due to business or technical reasons. Brokers may choose to limit various parameters, such as the size of requests, whether just the top of book or the entire book may be displayed, and whether Full or Incremental updates must be used.
Usage and Conditions	The Market Data Request Reject is used when the Marketplace cannot honor the Market Data Request.
Limitations	
Response/Acknowledgment	--

Table 29: MarketDataRequestReject(Y,out) is used when the request cannot be honoured.

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = Y
262			MDReqID	Y		Must refer to the MDReqID of the request.
281			MDReqRejReason			Reason for the rejection of a Market Data request. Valid values: 0 = Unknown symbol 1 = Duplicate MDReqID 3 = Insufficient Permissions 4 = Unsupported SubscriptionRequestType 5 = Unsupported MarketDepth 6 = Unsupported MDUpdateType 8 = Unsupported MDEntryType
			Standard Trailer	Y		

7 State Information

7.1 SecurityMassStatusRequest (CN, in)

Direction	In to marketplace
Message code	CN, <SecMassStatReq>
Purpose (FIX standard), only part of it may apply to the addressed scope	Request market session status and individual securities trading status
Usage and Conditions	Used to request the trading sessions of a marketplace (and optionally set up a subscription to any updates).
Limitations	It's only possible to request trading status for the whole marketplace (exchange), not individual segments or instruments
Response/Acknowledgment	Successful: SecurityMassStatus (CO) Not successful: BusinessMessageReject (j) - SecurityMassStatusRequest

Table 30: SecurityMassStatusRequest (CN, in)

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = CN
324			SecurityStatusReqID	Y		Must be unique, or the ID of previous Security Mass Status Request to disable if SubscriptionRequestType = Disable previous Snapshot + Updates Request (2).
263			SubscriptionRequestType	Y		Valid values: 0 = snapshot 1 = snapshot + updates 2 = unsubscribe
1301			MarketID			Market (exchange) for which Trading Session applies
			Standard Trailer	Y		

7.2 SecurityMassStatus (CO, out)

Direction	Out from Marketplace
Message code	CO, <SecMassStat>
Purpose (FIX standard), only part of it may apply to the addressed scope	The Security Mass Status messages are used as the response to a Security Mass Status Request message. It can be used to transmit market session status and individual securities trading status.
Usage and Conditions	Response to a SecurityMassStatusRequest (including updates due to subscription)
Limitations	The message is sent on session state changes but one individual message can only convey one of 2 possible levels at a time Market segment Individual symbols
Response/Acknowledgment	

Security Mass Status is used to transmit market session status, individual securities trading status and halt status and securities corporate action code including corporate action, notification sign and other signs.

- Trading Session changes can be sent in 2 different ways:
  1) Optionally a Market Segment (market) in Tag 1300 is supplied, in which case the new state in Tag 625 (TradingSessionSubID) applies to the Market Segment. Exceptions are listed for individual symbols (in Tag 55 and 48), for which the trading session change does not apply but which shall keep the previous session state, which have been disseminated for the individual symbol or market segment previously.
  2) In case Market Segment (market) in Tag 1300 is not supplied then the trading session change applies to listed individual symbols (in Tag 55 and 48) using the new state in Tag 625 (TradingSessionSubID). In this case the trading session change is only applied on the individual symbol level, and not on the Market Segment (market) level.
     In the case that the individual session for an individual instrument is changed to the same state as the market, then an update will be sent for the individual instrument with the new state (which will then be the same state as the market). The instrument will thereafter have the same state as the market. If the market thereafter changes state, the instrument will therefore no longer be treated as an exception to the market state.

  Tag 1301 Identifies which Market (exchange) that the Market Segment (in Tag 1300) and Individual symbol (in Tag 55 and 48) belongs to.

  Note: The trading session change is never applied on the Market (exchange), but always only on either the Market Segment (market) and/or individual symbol level. Each product can have different trading session time, so trading session can be different in the same Market Segment ID. To support future functionality, members might design to support order book state per instruments.

- Extension: TradingSessionSubID (625) contains the actual ID of the state. This is in contrast to standard FIX where TradingSessionSubID contains enums such as 2 = Opening or opening auction etc. Typical values for

TradingSessionSubID (625) could be OPEN, CLOSE etc. The actual values are configured in the system for the Trading Session (Session State ID), and is decided by the exchange.

- Corporate Actions updates for individual instrument is sent in Tag 292 CorporateAction. Tag 1300 MarketSegmentID will then not be used. If the instrument has an trading session state different from the market, then also Tag 625 TradingSessionSubID will be included and repeat the current individual trading session state for the instrument, when a Corporate Actions is added or changed in Tag 292.
- If the individual trading session state for the instrument is updated, then Tag 292 CorporateAction will be included and repeat the current corporate action for the instrument. If the instrument does not have any corporate action, or if the corporate action is removed, then Tag 292 CorporateAction will not be included anymore.

For Equity market, the corporate action process e.g. new list, de-list, change symbol, split par, XD, XR and etc. is activated after market closed. The clients will receive updated tag 292 Corporate Action after the process finishes.

- New Equity instruments, which will be traded on the next trading day, tag 292 Corporate Action will be set to D (New list stock).
- For the instrument that will be delisted on next trading day (today is the last trading day), tag 292 Corporate Action will be set to "X". The instrument will not be sent out on next trading day.
- Other corporate action codes including split flag are also set in the evening after CA process which will be effective on next trading day.

Table 31: SecurityMassStatus (CO, out)

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = CO
324			SecurityStatusReqID	C		Required when mass status is in response to a SecurityMassStatusRequest (35=CN) message.
1301			MarketID	Q		Identifies which Market (exchange, "TH") that the Market Segment or Individual symbol belongs to.
1300			MarketSegmentID			Optionally identifies the market segment (market) for which the Trading Session status is disseminated e.g. EQSM, EQSO, TXI, TXS etc. ⓘ The members can see list of Markets from MarketDefinition or the "SET CONNECT Guideline" document.
625			TradingSessionSubID		R100+	Trading Session or Halt state which is depending on which state has higher priority.

Tag num.			FIX tag name	Req'd	UD	Description
						Extension: The actual ID of a Trading Session is used, not the enumerated values listed in the standard FIX specification. ⓘ Please see possible values in below table.
146			NoRelatedSym			in SecMassStatGrp. Number of individual symbols listed. The list of individual symbols can be used for one of: - List of individual symbols with exceptions to state change of the market segment (in Tag 1300). - List of individual symbols state change and/or corporate action codes, when market segment (in Tag 1300) is not included. All listed symbols has the same state change (indicated by Tag 625, if available). The corporate action codes is indicated by Tag 292 for the individual symbol.
→	55		Instrument /Symbol			Short name of instrument
→	48		Instrument/SecurityID			Orderbook ID
→	22		Instrument/SecurityIDSource			Valid values: M = Marketplace-assigned identifier
→	292		CorporateAction			This field is used to indicate Corporate Action, Notification sign and other signs information of the instruments. This field is of MultiCharValue type, meaning that multiple values may be set simultaneously, separated by a space character. ⓘ Please see possible values in below table.

Tag num.			FIX tag name	Req'd	UD	Description
→	58		Text			Populated with the state name when an instrument has an instrument state or halt related information If the message is sent out without this tag, it means instrument state is cleared. ⓘ Please see possible values in below table.
			Standard Trailer	Y		

Possible values of TradingSessionSubID (625)

There are 3 groups of state names; normal trading session, halt/circuit breaker related and internal operation states. The state names are separately defined for Equity (SET/mai) and Derivatives (TFEX) markets. The state name ending with "_E" is for Equity market and ending with "_D" is for Derivatives market. ~~Please note that the member can discard the states ending with "_I" which is used for Index instruments.~~ Please note that the states of index orderbooks, such as PRE-OPEN1_I are for the Exchange internal use and can be changed without prior notice. The members must discard them.

SET recommends members to display state name as per business term. Please refer recommended display name and time of each session from SET CONNECT Guideline document.

TradingSessionSubID (625)	Equity (SET/mai)	Derivatives (TFEX)
Normal Trading Session	- CLOSE_E (First and last session of the day) - PRE-OPEN1_E - PRE-OPEN_E (for non-intermission product) - OPEN1_E - OPEN_E (for non-intermission product) - INTERMISSION_E - PRE-OPEN2_E - OPEN2_E - PRE-CLOSE_E - OFF-HOUR_E - MARKETCLOSE_E **Future Used** - FREEZE1_E - FREEZE2_E - FREEZE3_E ⓘ FREEZE states are inserted between PRE-OPEN and OPEN state.	- CLOSE_D (First and last session of the day) - PRE-MORNING_D - MORNING_D - DAY_D (for non-intermission product) - TRANSITION1_D - INTERMISSION_D - PRE-AFTERNOON_D - AFTERNOON_D - PRE-SETTLEMENT_D - TRANSITION2_D - SETTLEMENT_D - INTERMISSION2_D - INTERMISSION3_D - PRE-NIGHT_D - NIGHT_D - TRANSITION3_D - MARKETCLOSE_D - DAYCLOSE_D
Halt/Circuit Breaker Related State	- HALT_E - SUSPEND_E - PAUSE_E - CIRCUIT_BREAKER_E	- HALT_D - SUSPEND_D - PAUSE_D - CIRCUIT_BREAKER_D

TradingSessionSubID (625)	Equity (SET/mai)	Derivatives (TFEX)
	- FULLHALT_E (Not allow for both new and cancel orders) - PRE-OPEN_E (after lifting Market Full Halt or Circuit Breaker) **Future Used** - PRE-OPEN_CB_E (after Order Book Circuit Breaker is triggered) - EXPIRED_E	- FULLHALT_D (Not allow for both new and cancel orders) - PRE-OPEN_D (after lifting Market Full Halt or Circuit Breaker) - PRE-OPEN_CB_D (after Price Break is triggered) - EXPIRED_D (when last trading time of the series)
Operation State	- STARTUP_E (initial operation tasks) - SAVECLOSING_E (to save closing price of the instruments) - RESET_STAT_E (to reset trade statistics before CLOSE system)	- To generate new series - SERIES_GEN_DAY_D - COMBO_GEN_DAY_D - SERIES_GEN_NIGHT_D - RESET_STAT_D (to reset trade statistics for Day markets before CLOSE system)

Possible values of Text (58)

Halt states can be performed for the whole market or by instruments based on business cases.

- If there is a change in halt status or trading session in the instrument level, message with Text(58) will be sent out.
- If there is a change in halt status or trading session in market level, message with Text(58) will not sent out. For example, message with Text(58) will not sent out for Circuit Breaker which is normally halted for the whole market. Only TradingSessionSubID (625) is sent out for Circuit Breaker.

Text (58)	Equity	TFEX
Related Halt State	- HALT_E - SUSPEND_E - PAUSE_E - FULLHALT_E (Not allow for both new and cancel orders) - PRE-OPEN_E (If there is auction period after the halt is lifted) - Not sent tag out (when state is cleared) **Future Used** - PRE-OPEN_CB_E (after Order Book Circuit Breaker is triggered) - EXPIRED_E	- HALT_D - SUSPEND_D - PAUSE_D - FULLHALT_D (Not allow for both new and cancel orders) - PRE-OPEN_D (If there is auction period after the halt is lifted) - PRE-OPEN_CB_D (after Price Break is triggered) - EXPIRED_D (when last trading time of the series) - Not sent tag out (when state is cleared)
Instrument State	Normal trading sessions and operation states can be set as instrument state (refer to possible values of State Name in Order Book State message)	

ⓘ Please see example of messages transmission flow in below section.

ⓘ Please see updated State Names (TradingSessionSubID 625), related Halt States (Text 58) and trading schedule from SET CONNECT Guideline document.

ⓘ Please prepare systems to support future used states as well.

Possible values of CorporateAction (292)

Corporate Action code	Notification sign	Other signs
- A = Ex-Dividend (XD) - C = Ex-Rights (XR) - R = Ex-Warrant (XW) - a = Ex-All i.e. Ex-Dividend & Ex-Rights (XA) - b = Ex-Other Benefits (XB) - n = Ex-Capital Return (XN) t = Ex-TSR (XT)	- p = Notification Pending (NP) - r = Notification Received (NR) - w = Caution flag (C) - c = Non-compliance (NC) - s = Stabilization (ST)	- J = Split - D = New-list stock - x = Delisted stock - g = Non-Performing Group (NPG) - l = For long order cancellation due to CA *(* L in small letter)*

ⓘ Notification sign can be updated intraday.

ⓘ X (Delist), N (New list), Corporate action sign and Split flag are set in the evening after CA process, indicating the instruments status on next trading day.

ⓘ l (*L in small letter) is set in morning to indicate that long orders were cancelled due to related CA. Sign will be cleared after market is closed of that day.

ⓘ For the stock which Other Sign is "NG", the member should not display the stock.

ⓘ SET recommends that members should design your system to easily or automatically add new Corporate Action Code and Notification Sign to support future product expansion.

Example Message

- Trading session : In case that there is no different active states of the instruments in the related market segment ID.

```
8=FIXT.1.1|9=000131|35=CO|49=SET|56=MSET|34=25126|57=FSE03|
52=20210702-01:27:09.446894824|324=SecMassStatus-1625181306557|1301=TH|
1300=TXM|625=CLOSE_D|10=201|
```

Tag	Name	Value	Enum description
8	BeginString	FIXT.1.1	
9	BodyLength	000131	
35	MsgType	CO	
49	SenderCompID	SET	
56	TargetCompID	MSET	
34	MsgSeqNum	25126	
57	TargetSubID	FSE03	
52	SendingTime	20210702-01:27:09.446894824	
324	SecurityStatusReqID	SecMassStatus-1625181306557	
1301	MarketID	TH	
1300	MarketSegmentID	TXM	
625	TradingSessionSubID	CLOSE_D	
10	CheckSum	201	

- Trading session: In case that there is different active states of the instruments e.g. halt in the related market segment ID.

```
8=FIXT.1.1|9=002332|35=CO|49=SET|56=MSET|34=30632|57=FSE03|
52=20210702-02:30:11.097237816|324=SecMassStatus-1625181306557|1301=TH|
1300=EQSM|625=PRE_OPEN1_E|146=86|55=AAA|48=66034|22=M|55=AAA-F|48=196633|22=M|
...|55=BBB|48=1245254|22=M|10=088|
```

```
Tag    | Name                  | Value                        | Enum description
-------------------------------------------------------------------------------
     8 | BeginString           | FIXT.1.1                     |
     9 | BodyLength            | 002332                       |
    35 | MsgType               | CO                           |
    49 | SenderCompID          | SET                          |
    56 | TargetCompID          | MSET                         |
    34 | MsgSeqNum             | 30632                        |
    57 | TargetSubID           | FSE03                        |
    52 | SendingTime           | 20210702-02:30:11.097237816  |
   324 | SecurityStatusReqID   | SecMassStatus-1625181306557  |
  1301 | MarketID              | TH                           |
  1300 | MarketSegmentID       | EQSM                         |
   625 | TradingSessionSubID   | PRE_OPEN1_E                  |
   146 | NoRelatedSym          | 86                           |
    55 | Symbol                | AAA                          |
    48 | SecurityID            | 66034                        |
    22 | SecurityIDSource      | M               | Marketplace-assigned Identifier
    55 | Symbol                | AAA-F                        |
    48 | SecurityID            | 196633                       |
    22 | SecurityIDSource      | M               | Marketplace-assigned Identifier
   ...
    55 | Symbol                | BBB                          |
    48 | SecurityID            | 1245254                      |
    22 | SecurityIDSource      | M               | Marketplace-assigned Identifier
    10 | CheckSum              | 088                          |
```

- Halt status : In case that Active state (TradingSessionSubID-625) is changed to HALT

```
8=FIXT.1.1|9=000148|35=CO|49=SET|56=MSET|34=32713|57=FSE03|
52=20210702-03:50:00.055817628|324=SecMassStatus-1625181306557|1301=TH|
625=HALT_E|146=1|55=AAA|48=66073|22=M|10=180|
```

```
Tag    | Name                  | Value                        | Enum description
-------------------------------------------------------------------------------
     8 | BeginString           | FIXT.1.1                     |
     9 | BodyLength            | 000148                       |
    35 | MsgType               | CO                           |
    49 | SenderCompID          | SET                          |
    56 | TargetCompID          | MSET                         |
    34 | MsgSeqNum             | 32713                        |
    57 | TargetSubID           | FSE03                        |
    52 | SendingTime           | 20210702-03:50:00.055817628  |
   324 | SecurityStatusReqID   | SecMassStatus-1625181306557  |
  1301 | MarketID              | TH                           |
   625 | TradingSessionSubID   | HALT_E                       |
   146 | NoRelatedSym          | 1                            |
    55 | Symbol                | AAA                          |
    48 | SecurityID            | 66073                        |
    22 | SecurityIDSource      | M               | Marketplace-assigned Identifier
    10 | CheckSum              | 180                          |
```

- Halt status : Instrument state (Text-58) is changed to HALT

```
8=FIXT.1.1|9=000147|35=CO|49=SET|56=MSET|34=32714|57=FSE03|
52=20210702-03:50:00.056861419|324=SecMassStatus-1625181306557|1301=TH|146=1|
55=AAA|48=66073|22=M|58=HALT_E|10=130|
```

```
Tag    | Name                  | Value                        | Enum description
-----------------------------------------------------------------------------
     8 | BeginString           | FIXT.1.1                     |
     9 | BodyLength            | 000147                       |
    35 | MsgType               | CO                           |
    49 | SenderCompID          | SET                          |
    56 | TargetCompID          | MSET                         |
    34 | MsgSeqNum             | 32714                        |
    57 | TargetSubID           | FSE03                        |
    52 | SendingTime           | 20210702-03:50:00.056861419  |
   324 | SecurityStatusReqID   | SecMassStatus-1625181306557  |
  1301 | MarketID              | TH                           |
   146 | NoRelatedSym          | 1                            |
    55 | Symbol                | AAA                          |
    48 | SecurityID            | 66073                        |
    22 | SecurityIDSource      | M                | Marketplace-assigned Identifier
    58 | Text                  | HALT_E                       |
    10 | CheckSum              | 130                          |
```

- Lift Halt : Instrument state (Text-58) is cleared (tag is not sent out)

```
8=FIXT.1.1|9=000137|35=CO|49=SET|56=MSET|34=32940|57=FSE03|
52=20210702-03:55:08.426503025|324=SecMassStatus-1625181306557|1301=TH|146=1|
55=AAA|48=66073|22=M|10=010|
```

```
Tag    | Name                  | Value                        | Enum description
-----------------------------------------------------------------------------
     8 | BeginString           | FIXT.1.1                     |
     9 | BodyLength            | 000137                       |
    35 | MsgType               | CO                           |
    49 | SenderCompID          | SET                          |
    56 | TargetCompID          | MSET                         |
    34 | MsgSeqNum             | 32940                        |
    57 | TargetSubID           | FSE03                        |
    52 | SendingTime           | 20210702-03:55:08.426503025  |
   324 | SecurityStatusReqID   | SecMassStatus-1625181306557  |
  1301 | MarketID              | TH                           |
   146 | NoRelatedSym          | 1                            |
    55 | Symbol                | AAA                          |
    48 | SecurityID            | 66073                        |
    22 | SecurityIDSource      | M                | Marketplace-assigned Identifier
    10 | CheckSum              | 010                          |
```

- Corporate action sign

```
8=FIXT.1.1|9=000132|35=CO|49=SET|56=0001|34=89|57=MD1|
52=20210629-04:59:30.010780110|324=SecMassStatus-1605761966692|1301=TH|
146=1|55=BBL|48=65596|22=M|292=C|10=123|
```

```
Tag    | Name                  | Value                        | Enum description
-----------------------------------------------------------------------------
     8 | BeginString           | FIXT.1.1                     |
     9 | BodyLength            | 000132                       |
    35 | MsgType               | CO                           |Security Mass Status
    49 | SenderCompID          | SET                          |
    56 | TargetCompID          | 0001                         |
    34 | MsgSeqNum             | 89                           |
    57 | TargetSubID           | MD1                          |
    52 | SendingTime           | 20210629-04:59:30.010780110  |
```

```
  324 | SecurityStatusReqID  | SecMassStatus-1605761966692 |
 1301 | MarketID             | TH                          |
  146 | NoRelatedSym         | 1                           |
   55 | Symbol               | BBL                         |
   48 | SecurityID           | 65596                       |
   22 | SecurityIDSource     | M               | Marketplace-assigned Identifier
  292 | CorporateAction      | C                           | Ex-Rights
   10 | CheckSum             | 123                         |
```

- Multiple signs on single symbol

```
8=FIXT.1.1|9=000147|35=CO|49=SET|56=0001|34=12844|57=MD1|
52=20210629-12:40:20.153402581|324=SecMassStatus-1605762004416|1301=TH|
625=SUSPEND_E|146=1|55=AAA|48=65596| 22=M|292=w|10=235|
```

```
Tag    | Name                 | Value                       | Enum description
-------------------------------------------------------------------------------
    8  | BeginString          | FIXT.1.1                    |
    9  | BodyLength           | 000147                      |
   35  | MsgType              | CO                          |Security Mass Status
   49  | SenderCompID         | SET                         |
   56  | TargetCompID         | 0001                        |
   34  | MsgSeqNum            | 12844                       |
   57  | TargetSubID          | MD1                         |
   52  | SendingTime          | 20210629-12:40:20.153402581 |
  324  | SecurityStatusReqID  | SecMassStatus-1605762004416 |
 1301  | MarketID             | TH                          |
  625  | TradingSessionSubID  | SUSPEND_E                   |
  146  | NoRelatedSym         | 1                           |
   55  | Symbol               | AAA                         |
   48  | SecurityID           | 65596                       |
   22  | SecurityIDSource     | M               | Marketplace-assigned Identifier
  292  | CorporateAction      | w                           | Caution flag
   10  | CheckSum             | 235                         |
```

Example of Message Flow

The below table is shown the example of messages sent out for example scenario. Please note that the Symbol and MarketSegmentID are just example data. In the real scenario, there are more related Symbols and MarketSegmentID.

Event	Action	Market Segment ID (1300)	Symbol (55)	Trading Session Sub ID (625)	Text (58)
Normal Case					
1. Get snapshot	Receive active state for each MarketSegmentID. List of Symbols are the symbols having halt states	EQSM		STARTUP_E	
	Receive halt status of each Symbol		XYZ		SUSPEND_E
			XYZ-F		SUSPEND_E
2. Pre-Open	Receive updated trading session	EQSM	<XYZ, XYZ -F, .. >	PRE-OPEN_E	
	Receive active state of halted instruments		XYZ	SUSPEND_E	
			XYZ-F	SUSPEND_E	

Event	Action	Market Segment ID (1300)	Symbol (55)	Trading Session Sub ID (625)	Text (58)
	(During trading session, halt states has more priority than trading state)				
3. Open	Receive updated trading session	EQSM	<XYZ, XYZ -F, .. >	OPEN_E	
Halt / Lift-Halt Case for Instrument during trading session					
4. AAA is halted	Receive active state of halted instrument		AAA	HALT_E	
	Receive halt status		AAA		HALT_E
5. AAA is halt lifted	Receive active state back to normal session		AAA	OPEN1_E	
	Receive cleared halt status		AAA		*<Not send out tag, meaning clear Halt>*
Halt / Lift-Halt Case for Instrument during non-trading session e.g. Intermission					
6. BBB is halted	Receive halt status		BBB		HALT_E
7. BBB is halt lifted	Receive cleared halt status		BBB		*<Not send out tag, meaning clear Halt>*
SET Circuit Breaker Case					
8. SET Index Circuit Breaker	Receive active state of related MarketSegmentIDs to be Circuit_Breaker	EQSM		CIRCUIT_ BREAKER_E	
		EQSO		CIRCUIT_ BREAKER_E	
		TXS		CIRCUIT_ BREAKER_D	
	Receive active state of existing halted instruments changed to Circuit_Breaker		XYZ	CIRCUIT_ BREAKER_E	
			XYZ-F	CIRCUIT_ BREAKER_E	
9. Lift SET Index Circuit Breaker and enter to normal state	Receive active state of related MarketSegmentIDs changed to normal session e.g. Pre-Open for main markets, Open for odd-lot markets	EQSM	<XYZ, XYZ -F, .. >	PRE-OPEN_E	
		EQSO	<XYZ-O, .. >	OPEN_E	
		TXS		PRE-OPEN_D	
	Receive active state of existing halted instruments changed to Halt state		XYZ	SUSPEND_E	
			XYZ-F	SUSPEND_E	
10. Ending Pre-Open and enter to Open state	Receive active state of related MarketSegmentIDs changed to Open state	EQSM	<XYZ, XYZ -F, .. >	OPEN1_E	
		TXS		MORNING_D	
TFEX Orderbook Circuit Breaker Case					
11. TFEX Orderbook Circuit Breaker for some markets e.g.	Receive active state to Pre-Open-CB session when order book is price triggered		XXFUT1	PRE-OPEN_CB_D	
			XXFUT2	PRE-OPEN_CB_D	
	Receive halt status of each Symbol		XXFUT1		PRE-OPEN_CB_D

Event	Action	Market Segment ID (1300)	Symbol (55)	Trading Session Sub ID (625)	Text (58)
TXD, TXM then enter to Pre-Open-OB state			XXFUT2		PRE-OPEN_CB_D
12. After Pre-Open-CB, enter to normal state e.g. Morning_D, Afternoon_D, Night_D	Receive active state back to normal session		XXFUT1	MORNING_D	
			XXFUT2	MORNING_D	
	Receive cleared Instrument status		XXFUT1		*<Not send out tag, meaning clear Halt>*
			XXFUT2		*<Not send out tag, meaning clear Halt>*
Market Halt Case					
13. Halt market EQSM	Receive active state of related MarketSegmentIDs to be Full_Halt	EQSM		FULL_HALT_E	
	Existing halted instruments are also changed to Full_Halt		XYZ	FULL_HALT_E	
			XYZ-F	FULL_HALT_E	
14. Lift halt market EQSM and back to normal state	Receive active state of related MarketSegmentIDs changed to normal session	EQSM	<XYZ, XYZ -F, .. >	PRE-OPEN_E	
	Receive active state of existing halted instruments changed to their Halt state		XYZ	SUSPEND_E	
			XYZ-F	SUSPEND_E	
15. If Lift halt market EQSM in non-trading session	Receive active state of related MarketSegmentIDs changed to normal session	EQSM		INTERMISSION_E	
	Existing halted instruments are also changed to normal session (Non-trading session priority > Halt/Suspend)		XYZ	INTERMISSION_E	
			XYZ-F	INTERMISSION_E	

7.3 BusinessMessageReject (j, out) – SecurityMassStatusRequest

Table 32: BusinessMessageReject (j, out) - SecurityMassStatusReject.

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = j
45			RefSeqNum			MsgSeqNum of rejected message
372			RefMsgType	Y		The MsgType of the FIX message being referenced. Valid values: CN = SecurityMassStatusRequest
380			BusinessRejectReason	Y		Code to identify reason for a Business Message Reject message. Valid values: 0 = Other 1 = Unknown ID 6 = Not Authorized
58			Text			Where possible, message to explain reason for rejection.
			Standard Trailer	Y		

8 News

The News Message is used to publish Market announcement from the exchange (NewsCategory=1) and News announcement from companies, issuers or regulators (NewsCategory=2).

8.1 News (B, in)

Direction	In, out to marketplace
Message code (FIX and FIXML standard) introduced	B
Purpose (FIX standard), only part of it may apply to the addressed scope	The news message is a general free format message between the broker and institution. The message contains flags to identify the news item's urgency and to allow sorting by subject company (symbol). The News message can be originated at either the broker or institution side, or exchanges and other marketplace venues.
Usage and Conditions	In this solution News (snapshot+update) is made available through subscription made by using the News(B, in) message. It is possible to request recovery of intraday old news message, where the client sends News (B) (in) with tag 1475 NewsRefGrp=1, and tag 1476 NewsRefID=specifying from which NewsID the messages shall be recovered. Old news messages will be returned. This is also a subscription for new news messages that may follow the old new messages. Value [N/A] for NewsRefID identifies that this is a subscription for new news messages only for news messages that may be created after the subscription time. Old news messages will in this case not be returned.
Limitations	A client can be granted access to News messages (according to filters decided by system configuration), and may therefore receive and recover a subset of all News messages disseminated by the system, also from earlier sessions on the same day. Recovery is supported for intraday messages only. Recovery of messages from earlier days is not supported.
Response/Acknowledgment	Successful: News (B, out) Not successful: BusinessMessageReject (j) - News

The system supports two different news messages, Market Place news and Financial Market News. NewsCategory field is used in order to subscribe to these types of news.

For News tag 1472 NewsID identifies (by an integer) each News message in the system uniquely.

It is possible to request recovery of intraday old news message, where the client sends News (B, in) with tag 1475 NewsRefGrp=1, and tag 1476 NewsRefID=specifying from which NewsID (1472) the messages shall be recovered. Old news messages will be returned. This is also a subscription for new news messages that may follow the old new messages.

A client can be granted access to News messages (according to filters decided by system configuration), and may therefore receive a subset of all News messages disseminated by the system. Therefore, there may be gaps in the NewsID number series received by the client.

Value [N/A] for NewsRefID identifies that this is a subscription for new news messages only for news messages that may be created after the subscription time. Old news messages will in this case not be returned.

Please see summarized as below table:

Option	NoNewsRefIDs (1475) / NewsRefID (1476)	Description
Start of day	NoNewsRefIDs=1 / NewsRefID=1	To get News from beginning of the day
Replay news	NoNewsRefIDs=1 / NewsRefID=Next NewsID (1472)	To recovery News from next expected NewsID
Live feed only	Not specify or NoNewsRefIDs=1 / NewsRefID=[N/A]	To receive new News only

Table 33: News (B, in).

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = B
1473			NewsCategory	Y		Category of News Messages Valid values: 1 = Market Place News (Market announcement) 2 = Financial Market News (News from listed companies and the exchange)
1475			NewsRefGrp/NoNewsRefIDs	Q		Number of news items references. Specify value=1 when clients would like to replay News. If not specify, only new news messages will be returned.
1476			NewsRefId	Q		Required if NoNewsRefId (1475) > 0. Start value for NewsID (1472) which clients would like to replay (this is an integer value). Intraday old news messages will be returned. This is also a subscription for new news messages that may follow the old new messages.

Tag num.			FIX tag name	Req'd	UD	Description
148			Headline	Y		News headline. Please specify [N/A] when sending request. ⓘ Required but not used by FIX MD.
			Standard Trailer	Y		

Example Message

- Request for Market Place News (Market announcement)

```
8=FIXT.1.1|9=86|35=B|34=2|49=MSET|50=FSE03|52=20210909-
23:15:09.407|56=SET|148=[N/A]|1473=1|10=137|
```

```
Tag    | Name           | Value                  | Enum description
-----------------------------------------------------------------
     8 | BeginString    | FIXT.1.1               |
     9 | BodyLength     | 86                     |
    35 | MsgType        | B                      | News
    34 | MsgSeqNum      | 2                      |
    49 | SenderCompID   | MSET                   |
    50 | SenderSubID    | FSE03                  |
    52 | SendingTime    | 20210909-23:15:09.407  |
    56 | TargetCompID   | SET                    |
   148 | Headline       | [N/A]                  |
  1473 | NewsCategory   | 1                      | Marketplace News
    10 | CheckSum       | 137                    |
```

- Request for Financial Market News (News from listed companies and the exchange) with new news only

```
8=FIXT.1.1|9=86|35=B|34=3|49=MSET|50=FSE03|52=20210909-
23:15:09.418|56=SET|148=[N/A]|1473=2|10=141|
```

```
Tag    | Name           | Value                  | Enum description
-----------------------------------------------------------------
     8 | BeginString    | FIXT.1.1               |
     9 | BodyLength     | 86                     |
    35 | MsgType        | B                      | News
    34 | MsgSeqNum      | 3                      |
    49 | SenderCompID   | MSET                   |
    50 | SenderSubID    | FSE03                  |
    52 | SendingTime    | 20210909-23:15:09.418  |
    56 | TargetCompID   | SET                    |
   148 | Headline       | [N/A]                  |
  1473 | NewsCategory   | 2                      | Financial Market News
    10 | CheckSum       | 141                    |
```

- Request for Financial Market News from beginning of the day

```
8=FIXT.1.1|9=90|35=B|34=9|49=MSET|50=FSE01|52=20211110-
06:02:32.138|56=SET|148=[N/A]|1473=2|1475=1|1476=1|10=073|
```

Tag	Name	Value	Enum description
8	BeginString	FIXT.1.1	
9	BodyLength	90	
35	MsgType	B	News
34	MsgSeqNum	9	
49	SenderCompID	MSET	
50	SenderSubID	FSE01	
52	SendingTime	20211110-06:02:32.138	
56	TargetCompID	SET	
148	Headline	[N/A]	
1473	NewsCategory	2	Financial Market News
1475	NoNewsRefIDs	1	
1476	NewsRefID	1	To get news from beginning of the day
10	CheckSum	073	

- Replay Financial Market News

```
8=FIXT.1.1|9=91|35=B|34=15|49=0008|50=MD81|52=20210831-
21:30:11.832|56=SET|148=[N/A]|1473=2|1475=1|1476=1894100011|10=125|
```

Tag	Name	Value	num description
8	BeginString	FIXT.1.1	
9	BodyLength	91	
35	MsgType	B	News
34	MsgSeqNum	15	
49	SenderCompID	0008	
50	SenderSubID	MD81	
52	SendingTime	20210831-21:30:11.832	
56	TargetCompID	SET	
148	Headline	[N/A]	
1473	NewsCategory	2	Financial Market News
1475	NoNewsRefIDs	1	
1476	NewsRefID	1894100011	Next NewsID to replay
10	CheckSum	125	

8.2 News (B, out) MarketPlaceNews

Each Marketplace Announcement message can be related to one or more of the following entities:

- Exchange – News contains information related to a specific market (exchange). This is indicated by MarketID (1301) being set to the name of the market (exchange).
- Market – News contains information related to a specific market segment (market). This is indicated by MarketSegmentID (1300) being set to the name of the market segment (market).
- Instruments – News contains information related to one or more instruments (order book). This is indicated by one of Instrument/Symbol (55) in the repeating group InstrmtGrp being set.

Note: Only one of the above can be set in each News message.

Table 34: News (B, out).

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = B
42			OrigTime			Time of message origination
61			Urgency			Valid values: 0 = Normal 1 = Flash 2 = Background
1472			NewsID	Q		Unique identifier of news message
1473			NewsCategory	Y		Valid values: 1 = Market Place News
148			Headline	Y		News headline
33			LinesOfTextGrp/NoLinesOf Text	Y		Number of lines of text. Max 10 lines
→	58		Text	Y		Max 80 characters This field might contain new line character
1301			MarketID	C		Optionally identifies the market (exchange) for which the News apply. This field will contain value if the message is applied for all market segments.
1300			MarketSegmentID	C		Optionally identifies the market segment (market) for which the News apply. This field will contain value if the message is applied for specific market segment.
146			InstrmtGrp/NoRelatedSym	C		Number of Instruments. Maximum 1 instrument will be used.
→	55		Symbol	C		Symbol may be set to identify instruments to which this news message applies This field will contain value if the message is applied for specific symbols.

Tag num.			FIX tag name	Req'd	UD	Description
→	48		SecurityID	C		Orderbook ID
→	22		SecurityIDSource	C		Valid values: M = Marketplace-assigned identifier
149			URLLink			URL of additional information
30044			MessageInformationType			Kind of message sent in announcement. Valid values: 1 = CompanyAnnouncement 2 = SensitiveCompanyAnnouncement 3 = MarketMessage 4 = ImportantMarketMessage 5 = StaticLine 6 = CriticalStaticLine 7 = NoticeReceived 8 = Advertisement
			Standard Trailer	Y		

Example Message

- MarketPlaceNews for all market segments (MarketID is specified)

```
8=FIXT.1.1|9=000224|35=B|49=SET|56=MSET|34=35561|57=FSE03|52=20210628-
04:36:19.622217577|30044=4|1472=15|1473=1|42=20210628-
04:36:19.619635086|61=1|148=Test Important Market Control
Message|1301=TH|33=1|58=Test Important Market Control Message|10=242|
```

```
Tag   | Name            | Value                                  | Enum description
-------------------------------------------------------------------------------
    8 | BeginString     | FIXT.1.1                               |
    9 | BodyLength      | 000224                                 |
   35 | MsgType         | B                                      | News
   49 | SenderCompID    | SET                                    |
   56 | TargetCompID    | MSET                                   |
   34 | MsgSeqNum       | 35561                                  |
   57 | TargetSubID     | FSE03                                  |
   52 | SendingTime     | 20210628-04:36:19.622217577            |
30044 | MessageInformationType | 4                           | ImportantMarketMessage
 1472 | NewsID          | 15                                     |
 1473 | NewsCategory    | 1                                      | Marketplace News
   42 | OrigTime        | 20210628-04:36:19.619635086            |
   61 | Urgency         | 1                                      | Flash
  148 | Headline        | Test Important Market Control Message  |
 1301 | MarketID        | TH                                     |
   33 | NoLinesOfText   | 1                                      |
   58 | Text            | Test Important Market Control Message  |
   10 | CheckSum        | 242                                    |
```

- MarketPlaceNews for specific market segment (MarketSegmentID is specified)

```
8=FIXT.1.1|9=000341|35=B|49=SET|56=MSET|34=43245|57=FSE03|52=20210628-
06:13:19.050207486|30044=6|1472=24|1473=1|42=20210628-
06:13:19.048776703|61=1|148=Critical Static Line
Message|1300=TXD|33=2|58=Critical Static Line Message#1
|58=Critical Static Line Message#2
|10=187|
```

```
Tag   | Name              | Value                              | Enum description
-------------------------------------------------------------------------------
    8 | BeginString       | FIXT.1.1                           |
    9 | BodyLength        | 000341                             |
   35 | MsgType           | B                                  | News
   49 | SenderCompID      | SET                                |
   56 | TargetCompID      | MSET                               |
   34 | MsgSeqNum         | 43245                              |
   57 | TargetSubID       | FSE03                              |
   52 | SendingTime       | 20210628-06:13:19.050207486        |
30044 | MessageInformationType | 6                             | CriticalStaticLine
 1472 | NewsID            | 24                                 |
 1473 | NewsCategory      | 1                                  | Marketplace News
   42 | OrigTime          | 20210628-06:13:19.048776703        |
   61 | Urgency           | 1                                  | Flash
  148 | Headline          | Critical Static Line Message       |
 1300 | MarketSegmentID   | TXD                                |
   33 | NoLinesOfText     | 2                                  |
   58 | Text              | Critical Static Line Message#1
|
   58 | Text              | Critical Static Line Message#2
|
   10 | CheckSum          | 187                                |
```

- New advertisement

```
8=FIXT.1.1|9=000288|35=B|49=SET|56=MSET|34=15384|57=FSE03|52=20210629-
02:33:12.406664696|30044=8|1472=1|1473=1|42=20210629-
02:33:12.355916737|61=0|148=Advertisement Member=0001 ID=457
(New)|146=1|55=CPALL|48=65790|22=M|33=1|58=457       IB1000000
65.123456 Mr. AAA   0891234567                  |10=120|
```

```
Tag   | Name              | Value                          | Enum description
-----------------------------------------------------------------------------
    8 | BeginString       | FIXT.1.1                       |
    9 | BodyLength        | 000288                         |
   35 | MsgType           | B                              | News
   49 | SenderCompID      | SET                            |
   56 | TargetCompID      | MSET                           |
   34 | MsgSeqNum         | 15384                          |
   57 | TargetSubID       | FSE03                          |
   52 | SendingTime       | 20210629-02:33:12.406664696    |
30044 | MessageInformationType | 8                         | Advertisement
 1472 | NewsID            | 1                              |
 1473 | NewsCategory      | 1                              | Marketplace News
   42 | OrigTime          | 20210629-02:33:12.355916737    |
   61 | Urgency           | 0                              | Normal
  148 | Headline          | Advertisement Member=0001 ID=457 (New)   |
  146 | NoRelatedSym      | 1                              |
   55 | Symbol            | CPALL                          |
```

```
   48 | SecurityID        | 65790                           |
   22 | SecurityIDSource  | M                     | Marketplace-assigned Identifier
   33 | NoLinesOfText     | 1                               |
   58 | Text              | 457       IB1000000             65.123456 Mr. AAA
0891234567                   |
   10 | CheckSum          | 120                             |
```

- Cancel advertisement

```
8=FIXT.1.1|9=000294|35=B|49=SET|56=MSET|34=15425|57=FSE03|52=20210629-
02:34:13.997839759|30044=8|1472=2|1473=1|42=20210629-
02:34:13.996075847|61=0|148=Advertisement Member=0001 ID=457
(Cancelled)|146=1|55=CPALL|48=65790|22=M|33=1|58=457       CB1000000
65.123456 Mr. AAA   0891234567                  |10=221|
```

```
Tag   | Name              | Value                           | Enum description
-------------------------------------------------------------------------------
    8 | BeginString       | FIXT.1.1                        |
    9 | BodyLength        | 000294                          |
   35 | MsgType           | B                               | News
   49 | SenderCompID      | SET                             |
   56 | TargetCompID      | MSET                            |
   34 | MsgSeqNum         | 15425                           |
   57 | TargetSubID       | FSE03                           |
   52 | SendingTime       | 20210629-02:34:13.997839759     |
30044 | MessageInformationType | 8                          | Advertisement
 1472 | NewsID            | 2                               |
 1473 | NewsCategory      | 1                               | Marketplace News
   42 | OrigTime          | 20210629-02:34:13.996075847     |
   61 | Urgency           | 0                               | Normal
  148 | Headline          | Advertisement Member=0001 ID=457 (Cancelled)|
  146 | NoRelatedSym      | 1                               |
   55 | Symbol            | CPALL                           |
   48 | SecurityID        | 65790                           |
   22 | SecurityIDSource  | M                               | Marketplace-assigned
Identifier
   33 | NoLinesOfText     | 1                               |
   58 | Text              | 457       CB1000000             65.123456 Mr. AAA
0891234567                   |
   10 | CheckSum          | 221                             |
```

8.3 News (B, out) FinancialMarketNews

Each News announcement from companies, issuers or regulators message can be related to one or more of the following entities. Clients will receive News according to subscription rights by ReportType, MarketId and Language.

Currently SET sends news and reports from each markets at different time:

- SET and mai: 6:30 – 22:40
- TFEX: 6:30 – 3:05 (next day)

Since the system does not allow members to query news from the previous day, SET recommends that clients stay connected to the system at least until 22:40 to receive news. SET will resend TFEX news after 22:40 in next trading day. This means that all clients who given permission to receive TFEX news will receive it again in the following morning. Client can discard duplicated news by checking tag ClNewsID (30049).

Table 35: News (B, out).

Tag num.			FIX tag name	Req'd	UD	Description	NWS	FIN	ANN /F56
			Standard Header	Y		MsgType = B			
1473			NewsCategory	Y		Valid values: 2 = Financial Market News	✓	✓	✓
30003			ReportType	Y		Report Type Valid values: NWS = News FIN = Financial Status ANN = Annual Report F56 = Form56-1 ⓘ The valid values are available according to member permission	NWS	FIN	ANN/ F56
1301			MarketID	Y		The market the news applies to Valid values: A = SET S = MAI D = TFEX ⓘ The valid values are available according to member permission ⓘ MarketID=D is available only for NWS report type	✓	✓	✓
1474			Language	Y		The language the news is presented in	✓	✓	✓

Tag num.			FIX tag name	Req'd	UD	Description	NWS	FIN	ANN /F56
						Valid values: T = Thai E = English B = Both			
30033			Sender Name			The sender symbol including regulator, issuer and listed company	✓	✓	✓
30008			Publish Date			News publish date and time	✓	✓	✓
30004			News Type			The type of news Valid values for NWS: ' ' : Normal 41 : SET News Release 45 : TFEX News Release 51 : Form 45-1 / Form 45 52 : Form 45-2 53 : Form 45-3 59 : NAV 61 : Investor Alert News 62 : Reprimand News 71 : Contract Adjustments Valid values for F56: ' ' : Form 56-1 56, 58 : Form 56-1 One Report 57, 59 : Form 56-1 One Report (Change Business Type)	✓	55	✓
148			Headline			The headline for the news ⓘ Encoding is ISO8859-11 to support Thai language	✓	✓	✓
30005			ReportFileName			The News or report file name. It can be plain text or zip file	✓	✓	✓
30006			PDFFileName			PDF File Name	✓		
30007			XMLFileName			XML File Name			
30034			Period			Report period (year)		✓	✓
30035			DateAsOf			Report as of date		✓	✓
30036			Quarter			The quarter the financial statements represent Valid values:		✓	

Tag num.			FIX tag name	Req'd	UD	Description	NWS	FIN	ANN /F56
						1=Q1 2=Q2 3=Q3 4=Q4 6=Half Year 9=Annual			
30037			FinStmtType			The financial account type Valid values: U = Separate C = Consolidated and Separate B = Equity method and Separate		✓	
30038			FinStmtStatus			The financial statements status Valid values: U = Unreviewed R = Reviewed A = Audited		✓	
30043			Status			The status of News and reports Valid values: N=New D=Delete	✓	✓	✓
1472			NewsID			Unique identifier of news message, used for News recovery	✓	✓	✓
30049			ClNewsID			Client assigned identifier, News ID which is used for checking duplicated and deleted News	✓	✓	✓
30039			NewsGroup			News announcement group	✓	✓	✓
30040			NoTemplateCodes			Number of News template codes	✓	✓	
→	30041		TemplateCodes			Array of News template codes	✓	✓	
146			InstrmtGrp/NoRelatedSym			Number of Instrument symbols which this news message applies	✓	✓	✓
→	55		Symbol			Array of Instrument symbols which this news message applies ⓘ Symbols may not be available in SecurityList message e.g. News of new listed stocks	✓	✓	✓

Tag num.			FIX tag name	Req'd	UD	Description	NWS	FIN	ANN /F56
			Standard Trailer	Y					

Example Message

- News (NWS)

```
8=FIXT.1.1|9=000565|35=B|49=SET|56=MSET|34=10852|57=FSE01|52=20210907-
23:30:08.183570303|30033=AAA|30003=NWS|30036=0|
30005=nws/en/txt/0842NWS070920211235590507E.txt|30037=
|30006=nws/en/pdf/0842NWS070920211235590507E.pdf|30039=683662|
30008=20210908-05:35:59.000000000|30043=N|1472=1894100010|30049=683662E|1473=2|
1474=E|148=Notification of Trading Suspension of 7 DWs issued by AAA|1301=A|
146=3|55=BCH06C2109A|55=CPN06C2109A|55=GLOB06C2109A|30040=1|30041=90|10=223|
```

Tag	Name	Value	Enum description
8	BeginString	FIXT.1.1	
9	BodyLength	000565	
35	MsgType	B	News
49	SenderCompID	SET	
56	TargetCompID	MSET	
34	MsgSeqNum	10852	
57	TargetSubID	FSE01	
52	SendingTime	20210907-23:30:08.183570303	
30033	Sender Name	AAA	
30003	ReportType	NWS	
30036	Quarter	0	
30005	ReportFileName	nws/en/txt/0842NWS070920211235590507E.txt	
30037	FinStmtType		
30006	PDFFileName	nws/en/pdf/0842NWS070920211235590507E.pdf	
30039	NewsGroup	683662	
30008	Publish Date	20210908-05:35:59.000000000	
30043	Status	N	New
1472	NewsID	1894100010	
30049	ClNewsID	683662E	
1473	NewsCategory	2	Financial Market News
1474	LanguageCode	E	
148	Headline	Notification of Trading Suspension of 7 DWs issued by AAA	
1301	MarketID	A	
146	NoRelatedSym	3	
55	Symbol	BCH06C2109A	
55	Symbol	CPN06C2109A	
55	Symbol	GLOB06C2109A	
30040	NoTemplateCodes	1	
30041	TemplateCodes	90	
10	CheckSum	223	

- Deleted News (NWS)

```
8=FIXT.1.1|9=000320|35=B|49=SET|56=MSET|34=10831|57=FSE01|52=20210907-
23:30:07.531051646|30033=MAI|30003=NWS|30036=0|30037= |
30038= |30039=683642|30008=20210908-01:28:27.000000000|30043=D|1472=1894100022|
30049=683642E|1473=2|1474=E|148=SET adds new listed securities : BC-W1|
1301=S|146=2|55=BC|55=MAI|30040=1|30041=18|10=232|
```

Tag	Name	Value	Enum description
8	BeginString	FIXT.1.1	
9	BodyLength	000320	
35	MsgType	B	News
49	SenderCompID	SET	
56	TargetCompID	MSET	
34	MsgSeqNum	10831	
57	TargetSubID	FSE01	
52	SendingTime	20210907-23:30:07.531051646	
30033	Sender Name	MAI	
30003	ReportType	NWS	
30036	Quarter	0	
30037	FinStmtType		
30038	FinStmtStatus		
30039	NewsGroup	683642	
30008	Publish Date	20210908-01:28:27.000000000	
30043	Status	D	Delete
1472	NewsID	1894100022	
30049	ClNewsID	683642E	
1473	NewsCategory	2	Financial Market News
1474	LanguageCode	E	
148	Headline	SET adds new listed securities : BC-W1	
1301	MarketID	S	
146	NoRelatedSym	2	
55	Symbol	BC	
55	Symbol	MAI	
30040	NoTemplateCodes	1	
30041	TemplateCodes	18	
10	CheckSum	232	

- Financial Statements (FIN)

```
8=FIXT.1.1|9=000357|35=B|49=SET|56=MSET|34=91|57=FSE01|52=20210907-
23:15:07.256645294|30033=ABC|30034=2022|30003=FIN|30035=20210731|30004=55
|30036=6|30005=fin/en/1121FIN060920211458230897E.zip|30037=C|30038=U|
30039=683600|30008=20210907-11:21:09.000000000|30043=N|1472=18941000224|
30049=683600E|1473=2|1474=E|148=Financial Statement Half Year 2022
(Unreviewed/Unaudited)|1301=A|146=1|55=ABC|10=009|
```

Tag	Name	Value	Enum description
8	BeginString	FIXT.1.1	
9	BodyLength	000357	
35	MsgType	B	News
49	SenderCompID	SET	
56	TargetCompID	MSET	
34	MsgSeqNum	91	
57	TargetSubID	FSE01	
52	SendingTime	20210907-23:15:07.256645294	
30033	Sender Name	ABC	

```
30034 | Period        | 2022                                  |
30003 | ReportType    | FIN                                   |
30035 | DateAsOf      | 20210731                              |
30004 | News Type     | 55                                    |
30036 | Quarter       | 6                                     |
30005 | UNKNOWN       | fin/en/1121FIN060920211458230897E.zip|
30037 | FinStmtType   | C                                     |
30038 | FinStmtStatus | U                                     |
30039 | NewsGroup     | 683600                                |
30008 | Publish Date  | 20210907-11:21:09.000000000           |
30043 | Status        | N                                     |
 1472 | NewsID        | 18941000224                            |
30049 | ClNewsID      | 683600E                               |
 1473 | NewsCategory  | 2                                     |Financial Market News
 1474 | LanguageCode  | E                                     |
  148 | Headline      | Financial Statement Half Year 2022 (Unreviewed/Unaudited) |
 1301 | MarketID      | A                                     |
  146 | NoRelatedSym  | 1                                     |
   55 | Symbol        | ABC                                   |
   10 | CheckSum      | 009                                   |
```

- Annual Report (ANN)

```
8=FIXT.1.1|9=000291|35=B|49=SET|56=MSET|34=77183|57=FSE01|52=20210810-
05:30:04.875008151|30033=ABC|30034=2020|30003=ANN|30036=0|30005=ann/0042ANN06082
0211610480477E.zip|30037= |30038= |30039=674639|30008=20210810-
07:22:49.000000000|30043=N|1472=18941000226|30049=674639E|1473=2|1474=E|
148=Annual Report/ 2020|1301=A|146=1|55=ABC|10=076|
```

```
Tag   | Name          | Value                              | Enum description
-------------------------------------------------------------------------------
    8 | BeginString   | FIXT.1.1                           |
    9 | BodyLength    | 000291                             |
   35 | MsgType       | B                                  | News
   49 | SenderCompID  | SET                                |
   56 | TargetCompID  | MSET                               |
   34 | MsgSeqNum     | 77183                              |
   57 | TargetSubID   | FSE01                              |
   52 | SendingTime   | 20210810-05:30:04.875008151        |
30033 | Sender Name   | ABC                                |
30034 | UNKNOWN       | 2020                               |
30003 | ReportType    | ANN                                |
30036 | Quarter       | 0                                  |
30005 | ReportFileName| ann/0042ANN060820211610480477E.zip |
30037 | FinStmtType   |                                    |
30038 | FinStmtStatus |                                    |
30039 | NewsGroup     | 674639                             |
30008 | Publish Date  | 20210810-07:22:49.000000000        |
30043 | Status        | N                                  | New
 1472 | NewsID        | 18941000226                        |
30049 | ClNewsID      | 674639E                            |
 1473 | NewsCategory  | 2                                  | Financial Market News
 1474 | LanguageCode  | E                                  |
  148 | Headline      | Annual Report/ 2020                |
 1301 | MarketID      | A                                  |
  146 | NoRelatedSym  | 1                                  |
   55 | Symbol        | ABC                                |
   10 | CheckSum      | 076                                |
```

8.4 BusinessMessageReject (j, out) - News

Direction	Out from Marketplace
Message code (FIX and FIXML standard) introduced	j Added FIX.4.2
Purpose (FIX standard), only part of it may apply to the addressed scope	The Business Message Reject message can reject an application-level message which fulfills session-level rules and cannot be rejected via any other means. Note if the message fails a session-level rule (e.g. body length is incorrect), a session-level Reject message should be issued.
FIX Session	Market Data (MD)
Available to	Participants
Usage and Conditions	The Business Message Reject message is used when the Marketplace cannot honor the following requests: - News(B, in) - SecurityMassStatusRequest(CN, in)
Limitations	
Response/Acknowledgment	--

Table 36: BusinessMessageReject (j, out) - News.

Tag num.			FIX tag name	Req'd	UD	Description
			Standard Header	Y		MsgType = j
45			RefSeqNum			MsgSeqNum of rejected message
372			RefMsgType	Y		The MsgType of the FIX message being referenced. Valid values: B = News
380			BusinessRejectReason	Y		Code to identify reason for a Business Message Reject message. Valid values: 0 = Other 6 = Not Authorized

Tag num.			FIX tag name	Req'd	UD	Description
58			Text			Where possible, message to explain reason for rejection.
			Standard Trailer	Y		

9 Appendices

9.1 Field Definition Changed

Tag	FIX tag name	In message	Comment
625	TradingSessionSubID	TradingSessionStatus	Actual identifier of Trading Session ID used instead of enums such as 2 = Opening or opening auction etc. Typical values for TradingSessionSubID (625) could be OPEN, CLOSE etc. The actual values are configured in the system for the Trading Session (Session State ID), and is decided by the exchange.

9.2 Reference Data and Corporate Action

The corporate action process, e.g. new list, delist, change symbol, split par, XD, XR and etc. is run after market closed and the related order books information will be updated (as below tables). Please note that Equity market and Derivatives market might have some different behaviors.

Equity Market

Corporate Action	Updated Data	After market closed	On next day morning
1. New list	New order book is created and Other sign in CorporateAction(292) is set as "D" (New-list)	✓	
2. Delist	Other sign in CorporateAction(292) is set as "x" (Delisted)	✓	
3. Change symbol	SecurityStatus(965) of old order book is set to PendingDeletion/Issued	✓	
	Old order book will be deleted		✓
	New security ID of new symbol is created with SecurityStatus(965)=Active Originated from field refers to old symbol	✓	
	Previous closing price, Closing price and IPO price (if any) are carried to new security ID	✓	
4. Split par	Other sign in CorporateAction(292) is set as "J" (Split)	✓	
	Previous closing price and Closing price are adjusted	✓	
5. Beneficial CA e.g. XD, XR	Corporate Action Code is set	✓	
	Other sign in CorporateAction(292) is set as "l" *(L in small letter)* and related long orders are cancelled		✓

Derivatives Market

Corporate Action	Updated Data	After market closed (SETTLEMENT session)	On next day morning
1. Generate new series of market without night session	New outrights and combination series (if any) are created		✓
2. Generate new series of market with night session	New outrights and combination series (if any) are created	✓	
3. Change symbol and Beneficial CA e.g. XD, XR	SecurityStatus(965) of old series is updated - Outright series status=Pending Deletion/Issued - Combination series status=Delist	✓	
	Old series will be deleted		✓
	New order book ID of new outright series symbol is created with SecurityStatus(965)=Active	✓	
	Information of the new underlying security ID		✓
	New order book ID of new combination series is created with SecurityStatus(965)=Active - For markets with night session (if any) - For markets without night session	✓	✓
	Reference prices - Reference price is updated through MDEntryType=6 - In case of changing symbol, Previous closing price and Closing price are carried to new order book ID	✓	
	Open interest is updated		✓

9.3 How to maintain the local order book view

This section describes how to interpret the Incremental Price Depth flow. The FIX model for market data is to optimize bandwidth consumption by only sending delta information when a change occurs. It requires the receivers to keep a real-time database of the whole orderbook and apply the deltas in order. Keep in mind that a new session always starts with a MD Snapshot Full Refresh message to give an initial orderbook state that the following incremental refresh messages will be applied to.

A snapshot message will also be used in case the orderbook is flushed (MDEntryType = J – Empty book).

Below are a couple of examples to illustrate how it works. The examples are taken from the Price Depth examples section in [2], to simplify comparison to best practices. In the message examples some tags have been removed from messages to reduce the clutter when illustrating the examples.

9.3.1 Example 1 – Initial Market

This example shows the initial market (with 2 levels bid/ask) for the following examples.

BID	ASK
2 @9740	5 @9760
5 @9730	3@9770

9.3.1.1 An order is added to the book

An order is added creating a new best price level: **Buy 3 @ 9750**

Tag num.			FIX tag name	Value	Description
			Standard Header	X	MsgType = X
1021			MDBookType	2	Price-Depth
268			NoMDEntries	1	
279			MDUpdateAction	0	New
1023			MDPriceLevel	1	Price Level
269			MDEntryType	0	Bid
55			Symbol	AAA	Instrument
271			MDEntrySize	3	Quantity
270			MDEntryPx	9750	Price

Note: The receiver is responsible for shifting the levels below the newly inserted one down. And price level, Bid **5 @9730,** which is out of range has to be removed from client bid queue.

Result:

BID	ASK
3@9750	5@9760
2 @9740	3@9770

9.3.1.2 Change an order

An order is changed to increase its size: **Bid order @9750 is increased by 2**.

Tag num.			FIX tag name	Value	Description
			Standard Header	X	MsgType = X
1021			MDBookType	2	Price-Depth
268			NoMDEntries	1	
279			MDUpdateAction	1	Change
1023			MDPriceLevel	1	Price Level
269			MDEntryType	0	Bid
55			Symbol	AAA	Instrument
271			MDEntrySize	5	Quantity
270			MDEntryPx	9750	Price

Result:

BID	ASK
5@9750	5@9760
2@9740	3@9770

9.3.1.3 Delete an order which deletes the price level

An order is deleted at a lower price level and it is the only order at that price level: **Delete Bid @9740**. And **Bid 5@9730** will be added instead.

Tag num.			FIX tag name	Value	Description
			Standard Header	X	MsgType = X
1021			MDBookType	2	Price-Depth
268			NoMDEntries	2	
279			MDUpdateAction	2	Delete
1023			MDPriceLevel	2	Price Level
269			MDEntryType	0	Bid
55			Symbol	AAA	Instrument
279			MDUpdateAction	0	New
1023			MDPriceLevel	2	Price Level
269			MDEntryType	0	Bid
55			Symbol	AAA	Instrument
271			MDEntrySize	5	Quantity
270			MDEntryPx	9730	Price

Result:

BID	ASK
5@9750	5 @9760
5@9730	3@9770

9.3.2 Example 2 – A level can temporarily be beyond the maximum level during processing multiple updates in one MBP message

Initial market (with 3 levels bid/ask).

BID	ASK
	100 @11.0
	200 @11.5
	300 @12.0

The price of the order 200 @11.5 is change to 200 @10.5. This results in adding Ask 200 @10.5 and deleting 200 @11.5. However, during processing these items of update, the 3rd price level can temporarily be beyond the maximum level.

Tag num.			FIX tag name	Value	Description
			Standard Header	X	MsgType = X
1021			MDBookType	2	Price-Depth
268			NoMDEntries	2	
279			MDUpdateAction	0	New
1023			MDPriceLevel	1	Price Level
269			MDEntryType	1	Ask
55			Symbol	BBB	Instrument
271			MDEntrySize	200	Quantity
270			MDEntryPx	10.5	Price
279			MDUpdateAction	2	Delete
1023			MDPriceLevel	3	Price Level
269			MDEntryType	1	Ask
55			Symbol	BBB	Instrument

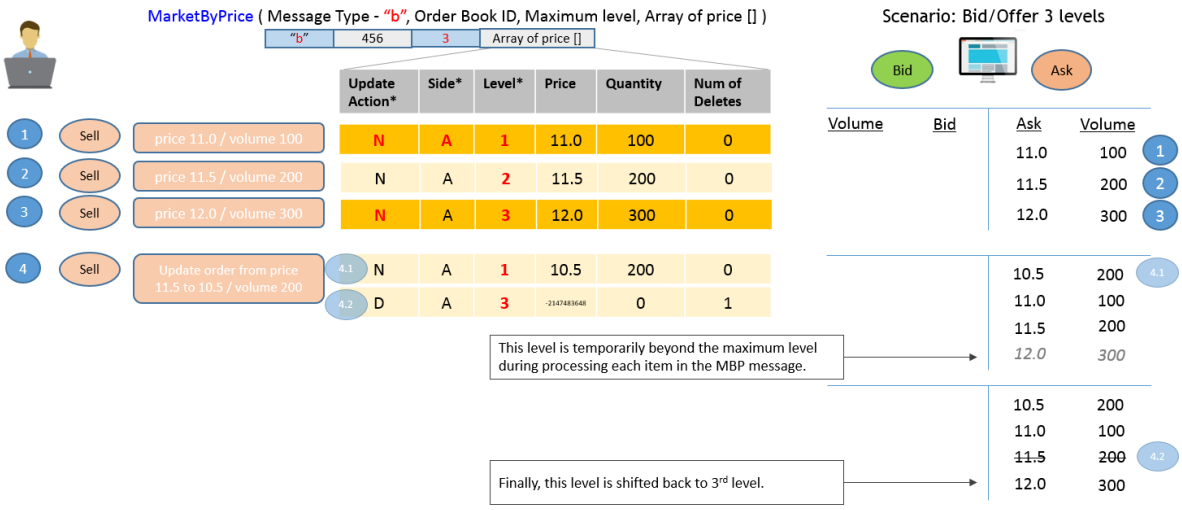
During processing the MDEntry #1

BID	ASK
	200 @10.5

	100 @11.0
	200 @11.5
	300 @12.0

Finally after processing all MDEntries.

BID	ASK
	200 @10.5
	100 @11.0
	300 @12.0



Revision History

Date	Effective Date	Version	Change Summary
30-Nov-2020	TBD	0.1	Initial document
22-Jan-2021	TBD	0.2	• Add News (B) message • MarketDataSnapshotFullRefresh – Index: Add MDEntryType 4=Opening Price, 5=Closing Price and e=Previous Closing Price • MarketDataSnapshotFullRefresh – TradeStatistics: Add MDEntryType 5=Closing Price and cancel s = Closing Auction Price • SecurityList (y) and SecurityListUpdateReport (BK) : Add LowLimitPrice, HighLimitPrice and Underlying ID
8-Mar-2021	TBD	0.3	• MarketDataIncrementalRefresh – Trade - Add TradeSeqNo (7554) which is used for trade recovery and add example request - AggressorSide (2446): Add 0 for None (no aggressor side) - MDUpdateAction (279): Remove inapplicable value 1 (Change) • Trade Statistics: Add s = Last auction price • Index – Update to not support replay • News (B): - Add more tags for sending News (in) - Add tag ClNewsID (30049) for News (out) - NewsID is used for News recovery
2-Apr-2021	TBD	0.4	• SecurityList (y) and SecurityListUpdateReport (BK) - Add Activation date in EventType (865) - Add possible value Suspended in SecurityStatus (965) - Add more descriptions - Cancel SecurityClassification section in SecurityListUpdateReport due to not applicable for BK message • Trade (MDEntrType=2) – Aggressor side – Cancel 0 and update to No value sent out if no aggressor side • SecurityMassStatus (CO) - Add Text (58) used for instrument halt state information - Add example of message transmission flow

Date	Effective Date	Version	Change Summary
			• New (B, in) : Remove LinesOfTextGrp (33) and Text (58) due to unused for market data
28-May-2021	TBD	0.5	• Add FIX Market Data Overview section • Rearrange FIX Infrastructure and Session Handling section • SecurityList: cancel AlowTTF flag • SecurityMassStatus: - Add possible values for trading sessions - Other Sign: add L flag for Long order cancellation due to CA - update CA code and split flag to be sent out after CA process (same as current system) - Add more description • MarketDataFullRefresh: Add MDEntryType A for Imbalance • Add more description for SecurityList, SecurityMassStatus, MarketData e.g. Bid/Offer, Trade Statistics, Market Statistics and others as per highlighted
2-Jul-2021	TBD	1.0	• FIX supports sending Time in nanosecond – update related example messages • SecurityList (y) and SecurityListUpdateReport (BK) - Add possible values Delisted and Pending Deletion/Issued in SecurityStatus (965) - Add possible values for SecurityType (167) to support new products • MarketDataFullRefresh - Equilibrium price is ready - Add more description for Equilibrium price and Trade Statistics - Trade: update possible values of Equity trade report type in TrdType (828) - Separate Reference Price from Trade Statistics - Index: Update Open index to be open of the day - Add Currency field in MDEntryType =t (Market Statistics) • SecurityMassStatus (CO) - Add STARTUP_E session - Add possible value of Text(58) - Add more example messages - Add more cases in Example of Message Flow • News (MarketPlaceNews): - Add 30044 to specify MessageInformationType - Add example messages

Date	Effective Date	Version	Change Summary
			• Appendices: Add Reference Data and Corporate Action
13-Sep-2021	TBD	1.1	• Logon (A): support Change password • Add sending IPO price of Equity instruments via MDEntryType=6 (Settlement price) • SecurityList (y) and SecurityListUpdateReport (BK) - Remove security types CBC and CBP - Add more descriptions • MarketDataSnapshotFullRefresh - Trade (MDEntryType=2): Classify Derivatives trade report code in TrdType (828) - ReferencePrice: update description for IPO price - Index: add example messages - Market Statistics: update description • News (B) - Add example messages of News (in) and News (out) for Financial Market News - Update more descriptions
15-Nov-2021	TBD	1.2	• System Architecture: add Redundant Connection picture • MarketDataSnapshotFullRefresh: Add more description and example messages for resetting prices of - Trade statistics - Equilibrium price - Reference price • Update meaning of MDEntryType=e to be Ever last price and update description • Revise description of bid/offer • SecurityMassStatus: Add possible value, DAYCLOSE_D, for TFEX market • News (B) - Replay news is ready - Add more description and example for News request
4-Mar-2022	TBD	1.3	• SecurityList (y) and SecurityListUpdateReport (BK): InstrAttribType (871)=104 is for Par value • MarketDataSnapshotFullRefresh: - Price Depth (MBP): Add more examples - Equilibrium price: Add more descriptions - Trade: Update TrdType possible values for Derivatives market - Index: Add more descriptions

Date	Effective Date	Version	Change Summary
			• SecurityMassStatus (CO) - Add possible values, TRANSITION1_D, TRANSITION1_2 and TRANSITION3_D; and PAUSE_E and PAUSE_D - Add missing possible values, CIRCUIT_BREAKER_E and CIRCUIT_BREAKER_D - Correct EXPIRED_E code - Update Example of Message Flow • News (B): Add possible values of NewsType (30004) for F56 report type • Appendice - Reference Data and Corporate Action: update some CA cases
23-May-2022	TBD	1.4	• SecurityList (y) and SecurityListUpdateReport (BK): Update unuse value on tag InstrAttribType (871)
6-Jun-2022	TBD	1.4.1	• Clarify MBP processing with multiple updates at 6.4 and 9.3.2
13-Jun-2022	TBD	1.4.2	• SecurityList (y) and SecurityListUpdateReport (BK): Add possible value on tag InstrAttribValue (872) • Correct MBP processing with multiple updates at 9.3.2
18-Jul-2022	TBD	1.4.3	• SecurityList (y) and SecurityListUpdateReport (BK) - Add a group of fields UnderlyingSecurityAltID/Source for the underlying code. • MarketDataSnapshotFullRefresh – Reference Prices (W, out): Add more description
15-Aug-2022	TBD	1.4.4	• Add more description about information of new underlying security ID at 5.7 and 9.2
19-Sep-2022	TBD	1.4.5	• SecurityList (y): Update usage of maturity date field for equity market
4-Nov-2022	TBD	1.4.6	• SecurityList (y): Add guildline for SecurityClassificationReason (1583)
6-Dec-2022	TBD	1.5	• SecurityListRequest (x) and MarketDataRequest (V): Not allow using Symbol
27-Feb-2023	TBD	1.6	• Clarify the state of index orderbooks