

# **LTSE**

**(v1.12) LTSE MEMO FIX**

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# 1 Overview

The MEMO FIX protocol is the application layer message standard used to facilitate the electronic exchange of information related to securities transactions placed on the LTSE exchange. MEMO FIX is a text key=value formatted protocol based on the FIX Trading Community FIX 5.0 SP2 specifications.

## 2 Transport Layer

The MEMO FIX protocol uses the Transmission Control Protocol (TCP) to provide reliable and ordered delivery of messages between clients and MEMO servers.

### 3 Session Layer

The MEMO FIX protocol uses the [FIXT 1.1 specification](#) session messages to establish and maintain a session.

## 4 Application Layer

MEMO FIX protocol application layer messages are based on the [Financial Information Exchange \(FIX\) Protocol version 5.0](#) and are key=value text encoded.

## 5 Headers and Trailers

All messages begin with a *Standard Header* and must end with a *Standard Trailer*.

### 5.1 Standard Header

The *Standard Header* must contain the required fields listed and can contain any of the non-required listed fields:

Tag	Field Name	Req'd	Meaning/Values
8	BeginString	Y	"FIXT.1.1" This must be the first field in the message.
9	BodyLength	Y	The length of the FIX message. This must be the second field in the message.
35	MsgType	Y	The type of message. This must be the third field in the message.
49	SenderCompID	Y	The sender's id, assigned by LTSE at on-boarding time.
56	TargetCompID	Y	"LTSE"
34	MsgSeqNum	Y	The message sequence number.
52	SendingTime	Y	The time of message transmission in Universal Time coordinated. See UTCTimestamp in FIX 5.0 SP2 specification.
43	PossDupFlag	N	Always required for retransmitted messages, whether prompted by the sending system or as the result of a resend request.
97	PossResend	N	Required when message may be duplicate of another message sent under a different sequence number.
122	OrigSendingTime	N	Required for message resent as a result of a ResendRequest. If data is not available set to same value as SendingTime.

### 5.2 Standard Trailer

The *Standard Trailer* must contain the CheckSum field.

Tag	Field Name	Req'd	Meaning/Values
10	Checksum	Y	The message checksum. This must be the last field in the message.

## 6 Messages

This section defines the messages that make up the protocol. For each message, it lists the fields in the message by tag id and name, whether the field is required and acceptable values or description of the field. LTSE will reject any messages that contain unspecified tags.

### 6.1 Session Messages

This section defines the session level messages supported.

### 6.2 Heartbeat (Sent by exchange and client)

The Heartbeat message confirms the status of the communication link.

Tag	Field Name	Req'd	Meaning/Values
	Standard Header	Y	With tag 35 (MsgType) = 0
112	TestReqID	N	Identifier included in Test Request message to be returned in resulting Heartbeat.
	<a href="#">Standard Trailer</a>	Y	

### 6.3 Logon

The logon message is sent by the client to establish a connection to the exchange. The logon message must be the first message sent by the application requesting to initiate a FIX session.

Tag	Field Name	Req'd	Meaning/Values
	Standard Header	Y	With tag 35 (MsgType) = A
98	EncryptMethod	Y	Required to be 0.
108	HeartBtInt	Y	Heartbeat interval, in seconds. An interval of 0 indicates there are no heartbeats. The maximum supported interval is 90 seconds.
141	ResetSeqNumFlag	N	LTSE will reject logon if this flag is 'Y'. LTSE operations can reset the inbound and outbound sequence numbers on request.
1137	DefaultAppVerID	Y	Required to be 9. ("FIX50SP2")
1408	DefaultCstmAppVerID	Y	The schema version, required as of version 1.9, is used to ensure consistency across message formats.
	<a href="#">Standard Trailer</a>	Y	

Note: In version 1.9 and beyond, if the DefaultCstmAppVerID (tag 1408) is invalid, the client connection is dropped.

### 6.4 Logout

The logout message initiates or confirms the termination of a FIX session. This may be sent by the exchange or the client.

Tag	Field Name	Req'd	Meaning/Values
	Standard Header	Y	With tag 35 (MsgType) = 5
58	Text	N	Text explaining reason for logout.
	<a href="#">Standard Trailer</a>	Y	

## 6.5 Reject

The reject message should be issued when a message is received but cannot be properly processed due to a session-level rule violation.

Tag	Field Name	Req'd	Meaning/Values
	Standard Header	Y	With tag 35 (MsgType) = 3
45	RefSeqNum	Y	Reference message sequence number.
371	RefTagID	N	The tag number of the FIX field that was rejected.
372	RefMsgType	N	The MsgType of the FIX message that was rejected.
58	Text	N	Explanatory reason.
	<a href="#">Standard Trailer</a>	Y	

## 6.6 ResendRequest

The resend request is sent by the receiving application to initiate the retransmission of messages.

Tag	Field Name	Req'd	Meaning/Values
	Standard Header	Y	With tag 35 (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.
	<a href="#">Standard Trailer</a>	Y	

## 6.7 SequenceReset

The sequence reset message is used to reset the incoming sequence number on the opposing side.

Tag	Field Name	Req'd	Meaning/Values
	<a href="#">Standard Header</a>	Y	With tag 35 (MsgType) = 4
123	GapFillFlag	N	Indicates that this message is replacing administrative or application messages which will not be resent.
36	NewSeqNo	Y	New sequence number
	<a href="#">Standard Trailer</a>	Y	

## 6.8 TestRequest

The test request message forces a heartbeat from the opposing application. The opposite application responds to the Test Request with a Heartbeat containing the TestReqID.

Tag	Field Name	Req'd	Meaning/Values
	Standard Header	Y	With tag 35 (MsgType) = 1
112	TestReqID	Y	Identifier included in Test Request message to be returned in resulting Heartbeat.
	<a href="#">Standard Trailer</a>	Y	

## 6.9 BusinessMessageReject

LTSE will not send any BusinessMessageReject messages. Instead LTSE will send either a Reject for session level issues or the appropriate application reject message. LTSE does support receiving BusinessMessageReject messages from the client.

Tag	Field Name	Req'd	Meaning/Values
	Standard Header	Y	With tag 35 (MsgType) = j
45	RefSeqNum	N	Reference message sequence number.
380	BusinessRejectReason	Y	Code to identify reason for a Business Message Reject message.
372	RefMsgType	N	The MsgType of the FIX message that was rejected.
58	Text	N	Explanatory reason.
	<a href="#">Standard Trailer</a>	Y	

## 7 Session Management

The client establishes a session by opening a TCP connection to an exchange Memo FIX port, (server) and sending a FIX logon message with the appropriate credentials and MsgSeqNum set. Values for SenderCompID and TargetCompID will be provisioned by the exchange and will be verified by the server upon receipt of the Logon message. If the Logon message is accepted, the server will send a Logon response. If the MsgSeqNum on the inbound logon is less than expected by the server, the logon will be rejected.

If the MsgSeqNum on the inbound logon is greater than expected, the server will reply with a Logon and shall send a ResendRequest for the missing messages. The client application should gap fill any session level messages and may opt to resend any business level messages with the PossDup flag set (see [FIXT 1.1 specification](#) Message Recovery). For example, if a client opts to resend a stale NewOrderSingle during a gap fill, the server will process the message, and that order may become eligible for execution.

When the client application receives the Logon response it should compare the MsgSeqNum to the expected server sequence number. If a gap is detected, it should send a ResendRequest message to the server. The server will resend any missing business level messages with the PossDup flag set. Instead of resending session-level messages, the server will issue sequence reset messages with the GapFillFlag set.

If the session gets interrupted intra-day and cancel on disconnect is enabled for the port, the server will cancel all orders associated with that session. The Canceled execution reports generated by the cancel on disconnect shall be stored by the server, and will be available for resending when the client re-establishes the session. If cancel on disconnect is not provisioned, then any orders that were active when the connection was closed shall be eligible for execution. By default cancel on disconnect is enabled.

When the client terminates a session it should send a Logout message and wait for the Logout response from the server before closing the connection. This procedure facilitates gap detection and processing before the connection is closed.

At the end of the trading day, the FIX inbound and outbound sequence numbers are set to 1. All inbound FIX messages shall be rejected if a FIX session has not been established. The server will send a Logout if it receives a message without PossDup flag set, and with a MsgSeqNum less than the expected client sequence number. In the event of a failover to a backup port, the backup port will maintain the sequence numbers of the primary, and it will have the ability to replay any messages that the primary port sent.

The server will process any business level messages with the PossResend flag set. The server will reject any messages that it has already seen-- for example, NewOrderSingle or CancelReplace messages with duplicate ClOrdID.

## 8 Application Messages From Exchange to Client

### 8.1 OrderCancelReject

The order cancel reject message is used by the exchange to indicate a cancel or a cancel/replace request cannot be honored.

Tag	Field Name	Req'd	Meaning/Values
	Standard Header	Y	With tag 35 (MsgType) = 9
37	OrderID	Y	Unique identifier for an Order as assigned by the exchange. Uniqueness must be guaranteed within a single trading day. If the ClOrdID on the CancelRequest is unknown this field will contain "Unknown".
11	ClOrdID	Y	Unique identifier from the cancel or cancel/replace message.
41	OrigClOrdID	Y	As specified on cancel/replace request.
39	OrdStatus	Y	The status of the order after this reject was applied. 0 - New 1 - PartialFilled 2 - Filled 4 - Canceled 6 - PendingCancel 8 - Rejected A - PendingNew C - Expired E - PendingReplace
434	CxlRejResponseTo	Y	Identifies the type of request that a Cancel Reject is in response to. 1 - OrderCancelRequest 2 - OrderCancelReplaceRequest
102	CxlRejReason	Y	Code to identify reason for cancel rejection. 1 - UnknownOrder 3 - OrderAlreadyPendingCancelOrReplace 6 - DuplicateClOrdID 18 - InvalidPriceIncrement 99 - Other LTSE Custom codes 100 - MissingSymbol 101 - MissingLocate 102 - MissingClOrdID 103 - InvalidOrderQuantity 104 - InvalidSymbol 105 - InvalidLimitPrice 107 - SymbolHaltedOrPaused 108 - OrderSizeExceedsLimit 109 - ExceededMaxOrderNotionalAmt 110 - MissingOrigOrderIdentifiers 111 - AmbiguousOrigOrderIdentifiers 112 - OrigOrderSymbolNotMatchingRequestSymbol 113 - UnsupportedDisplayQuantityChange 114 - UnsupportedOrdTypeChange 115 - UnsupportedSideChange 116 - UnsupportedQuantityChange 117 - InvalidLocate 118 - ExchangeClosed

Tag	Field Name	Req'd	Meaning/Values
			119 - BlockSessionRiskRuleViolated 120 - BlockSellShortRiskRuleViolated 121 - MaxSharesPerOrderRiskRuleBreach 122 - NoNBBOAvailable 123 - MaxNotionalValuePerOrderRiskRuleBreach 124 - MaxADVPercentPerOrderRiskRuleBreach 125 - PricePercentCollarRiskRuleViolated 126 - PriceValueCollarRiskRuleViolated 127 - HardToBorrowSecurityRiskRuleViolate 128 - InvalidSide 129 - InvalidOrdType 130 - InvalidCIOrdID 131 - InvalidLnkID 132 - MissingLocateBroker 133 - InvalidLocateBroker
583	LnkID	N	As stated in the order as long as the order is a live order.
	<a href="#">Standard Trailer</a>	Y	

## 8.2 ExecutionReport

The ExecutionReport message is used to communicate order events and the current state of an order.

### 8.2.1 Pending New

The Pending New execution report is a response to NewOrderSingle message indicating the request has been received by the exchange and is in the process of being handled. This message is sent by default and may be disabled upon request.

Tag	Field Name	Req'd	Meaning/Values
	Standard Header	Y	With tag 35 (MsgType) = 8
37	OrderID	Y	Unique identifier for an Order assigned by the exchange. This is guaranteed to be unique for a trading day.
11	CIOrdID	Y	As stated in the order.
17	ExecID	Y	Unique identifier of execution message as assigned by the exchange. Uniqueness is guaranteed within a single trading day.
150	ExecType	Y	A - Pending New
39	OrdStatus	Y	A - Pending New
55	Symbol	Y	As stated in the order.
65	SymbolSfx	N	As stated in the order.
54	Side	Y	As stated in the order.
151	LeavesQty	Y	Quantity open for further execution.
14	CumQty	Y	0
6	AvgPrice	Y	0
44	Price	N	As stated in the order.
38	OrderQty	Y	As stated in the order.
40	OrdType	Y	As stated in the order.
59	TimeInForce	Y	As stated in the order.
528	OrderCapacity	Y	As stated in the order.

Tag	Field Name	Req'd	Meaning/Values
18	ExecInst	Y	As stated in the order.
211	PegOffsetValue	N	As stated in the order
1094	PegPriceType	N	As stated in the order.
126	ExpireTime	N	As stated in the order.
110	MinQty	N	As stated in the order.
1138	DisplayQty	N	As stated in the order.
1084	DisplayMethod	N	As stated in the order.
1087	DisplayMinInc	N	As stated in the order.
21006	ReserveReplenishTimeType	N	As stated in the order. This is a custom LTSE tag.
114	LocateReqd	N	Must always be 'N' if present in the order.
21001	SelfTradePrevention	N	As stated in the order. This is a custom LTSE tag.
2362	StpGroupID	N	As stated in the order.
21005	RiskGroupID	N	As stated in the order. This is a custom LTSE tag.
21020	RepriceFrequencyType	N	As stated in the order. This is a custom LTSE tag.
21021	RepriceBehaviorType	N	As stated in the order. This is a custom LTSE tag.
582	CustOrderCapacity	Y	As stated in the order.
60	TransactTime	Y	The time at which the transaction occurred. UTC timestamp since epoch with millisecond precision.
21007	MPID	Y	As stated in the order, or the default MPID for the Account if not specified in the order. This is a custom LTSE tag.
583	LnkID	N	As stated in the order.
5700	LocateBroker	N	As stated on the order.
	<a href="#">Standard Trailer</a>	Y	

## 8.2.2 New Order Acknowledge

The New Order Acknowledge execution report is a response to the NewOrderSingle message in the event the order was accepted by the exchange. This message echos back to the requester the accepted state of the order.

Tag	Field Name	Req'd	Meaning/Values
	Standard Header	Y	With tag 35 (MsgType) = 8
37	OrderID	Y	Unique identifier for an Order assigned by the exchange. This is guaranteed to be unique for a trading day.
11	ClOrdID	Y	As stated in the order.
17	ExecID	Y	Unique identifier of execution message as assigned by the exchange. Uniqueness is guaranteed within a single trading day.
150	ExecType	Y	0 - New
39	OrdStatus	Y	0 - New
55	Symbol	Y	As stated in the order.
65	SymbolSfx	N	As stated in the order.
54	Side	Y	As stated in the order.
151	LeavesQty	Y	Quantity open for further execution.

Tag	Field Name	Req'd	Meaning/Values
14	CumQty	Y	0
6	AvgPrice	Y	0
44	Price	N	As stated in the order.
38	OrderQty	Y	As stated in the order.
40	OrdType	Y	As stated in the order.
59	TimelnForce	Y	As stated in the order.
528	OrderCapacity	Y	As stated in the order.
18	ExecInst	Y	As stated in the order.
211	PegOffsetValue	N	As stated in the order
1094	PegPriceType	N	As stated in the order.
126	ExpireTime	N	As stated in the order.
110	MinQty	N	As stated in the order.
1138	DisplayQty	N	As stated in the order.
1084	DisplayMethod	N	As stated in the order.
1087	DisplayMinInc	N	As stated in the order.
21006	ReserveReplenishTimeType	N	As stated in the order. This is a custom LTSE tag.
114	LocateReqd	N	Must always be 'N' if present in the order.
21001	SelfTradePrevention	N	As stated in the order. This is a custom LTSE tag.
2362	StpGroupID	N	As stated in the order.
21005	RiskGroupID	N	As stated in the order. This is a custom LTSE tag.
21020	RepriceFrequencyType	N	As stated in the order. This is a custom LTSE tag.
21021	RepriceBehaviorType	N	As stated in the order. This is a custom LTSE tag.
582	CustOrderCapacity	Y	As Stated in the order.
60	TransactTime	Y	The time at which the transaction occurred. UTC timestamp since epoch with millisecond precision.
21007	MPID	Y	As stated in the order, or the default MPID for the Account if not specified in the order. This is a custom LTSE tag.
583	LnkID	N	As stated in the order.
5700	LocateBroker	N	As stated on the order.
	<a href="#">Standard Trailer</a>	Y	

### 8.2.3 Rejected Order

The Rejected Order execution report is sent in response to a NewOrderSingle message that was rejected by the exchange.

Tag	Field Name	Req'd	Meaning/Values
	Standard Header	Y	With tag 35 (MsgType) = 8
11	CIOrdID	Y	As stated in the order.
37	OrderID	Y	This will be the same value as ExecID.
17	ExecID	Y	Unique identifier of execution message as assigned by the exchange. Uniqueness is guaranteed within a single trading day.
150	ExecType	Y	8 - Rejected
39	OrdStatus	Y	8 - Rejected

Tag	Field Name	Req'd	Meaning/Values
55	Symbol	Y	As stated in the order.
65	SymbolSfx	N	As stated in the order.
54	Side	Y	As stated in the order.
151	LeavesQty	Y	0
14	CumQty	Y	0
6	AvgPx	Y	0
44	Price	N	As stated in the order.
38	OrderQty	Y	As stated in the order.
40	OrdType	Y	As stated in the order.
60	TransactTime	Y	UTC timestamp since epoch with millisecond precision.
103	RejectReason	Y	Reason code for order rejection. 1 - InvalidSymbol 2 - ExchangeClosed 3 - OrderExceedsLimit 6 - DuplicateOrder 18 - InvalidPriceIncrement 19 - NoNBBOAvailable 20 - NotionalValueExceedsThreshold 22 - BlockSellShortRiskRuleViolated 23 - HardToBorrowSecurityRiskRuleViolated 27 - MaxNotionalValuePerOrderRiskRuleViolated 99 - Other LTSE specific reject codes 100 - MissingSymbol 101 - MissingLocateReqd 102 - InvalidLocateReqd 103 - MissingCLOrdId 104 - InvalidCLOrdId 105 - MissingSide 106 - InvalidSide 107 - MissingOrderQty 108 - InvalidOrderQty 109 - MissingOrderType 110 - InvalidOrderType 111 - MissingTimeInForce 112 - InvalidTimeInForce 113 - MissingOrderCapacity 114 - InvalidCapacity 116 - MissingLimitPrice 117 - InvalidLimitPrice 118 - MissingMaxFloor 119 - InvalidMaxFloor 120 - MissingReserveReplenishAmountType 121 - InvalidReserveReplenishAmountType 122 - MissingReserveReplenishTimeType 123 - InvalidReserveReplenishTimeType 124 - MissingRandomReplenishmentValue 125 - InvalidRandomReplenishmentValue 126 - InvalidRandomReplenishmentValueForReserveType 127 - MissingRepriceFrequencyType 128 - InvalidRepriceFrequencyType 129 - MissingRepriceBehaviorType 130 - InvalidRepriceBehaviorType 131 - InvalidRepriceBehaviorForRepriceFrequency

Tag	Field Name	Req'd	Meaning/Values
			132 - MissingCustomerCapacityType 133 - InvalidCustomerCapacityType 134 - MissingExpireTime 135 - InvalidExpireTime 136 - MissingPegType 137 - InvalidPegType 138 - InvalidModifierForOrderType 139 - InvalidModifiersCombination 140 - InvalidTradingSessionForOrderType 141 - InvalidTimeInForceForOrderType 142 - InvalidModifierForPegType 143 - InvalidMinQty 144 - InvalidExecInst 145 - InvalidMpid 146 - SymbolHaltedOrPaused 147 - BlockISORiskRuleViolated 148 - BlockSessionRiskRuleViolated 149 - BlockNonTestSymbolsRiskRuleViolated 150 - MaxSharesPerOrderRiskRuleBreach 151 - PricePercentCollarRiskRuleViolated 152 - PriceValueCollarRiskRuleViolated 153 - MaxADVPercentPerOrderRiskRuleBreach 154 - DailyGrossNotionalExposureRiskRuleBreach 155 - DailyNetNotionalExposureRiskRuleBreach 156 - MaxNumDuplicateOrdersRiskRuleBreach 157 - MaxOrderRateRiskRuleBreach 158 - RestrictedSecurityRiskRuleViolated 159 - InvalidSelfTradePreventionConfiguration 160 - InvalidSelfTradePreventionType 161 - InvalidRiskGroupId 162 - FirmDisabled 163 - MPIDDisabled 164 - AccountDisabled 165 - CannotTradeNonTestSymbol 166 - MissingFirm 167 - MissingAccount 168 - MissingMPID 169 - MissingRiskGroup 170 - DailyMarketOrderGrossNotionalExposureRiskRuleBreach 171 - DailyMarketOrderNetNotionalExposureRiskRuleBreach 172 - MissingDispMethodType 173 - MissingFirmRiskSetting 174 - InvalidAccountMPIDToFirm 175 - InvalidPegOffsetValue 179 - MissingSTPGroupId 180 - InvalidSTPGroupId 181 - InvalidLnkId 182 - MissingLocateBroker 183 - InvalidLocateBroker
583	LnkID	N	As stated in the order.
	<a href="#">Standard Trailer</a>	Y	

## 8.2.4 Trade

The Trade execution report is sent when a trade occurs.

Tag	Field Name	Req'd	Meaning/Values
	Standard Header	Y	With tag 35 (MsgType) = 8
37	OrderID	Y	Unique identifier for an Order assigned by the exchange. This is guaranteed to be unique for a trading day.
11	ClOrdID	Y	Unique identifier for an Order as assigned by the client. Uniqueness must be guaranteed within a single trading day.
17	ExecID	Y	Unique identifier of execution message as assigned by the exchange. Uniqueness is guaranteed within a single trading day.
150	ExecType	Y	F - Trade (partial fill or fill).
39	OrdStatus	Y	1 - Partially filled 2 - Filled
55	Symbol	Y	As stated in the order.
65	SymbolSfx	N	As stated in the order.
54	Side	Y	As stated in the order.
32	LastQty	Y	Quantity (e.g. shares) bought/sold on this (last) fill.
31	LastPx	Y	Price of this (last) fill.
151	LeavesQty	Y	Quantity open for execution.
14	CumQty	Y	Total quantity filled on the order.
6	AvgPx	Y	The calculated average price of all fills for the executed order.
44	Price	N	As stated in the order.
38	OrderQty	Y	As stated in the order.
40	OrdType	Y	As stated on the previous order.
60	TransactTime	Y	The time at which the transaction occurred.
880	TrdMatchID	Y	Identifier assigned to the Trade by the matching system.
851	LastLiquidityInd	Y	Indicator denoting whether the referenced order removed liquidity from or added liquidity to the LTSE book. 1 - AddDisplayedLiquidity 2 - RemovedLiquidity 3 - LiquidityRoutedOut* 4 - Cross (currently not used) 51 - AddHidden 52 - AddMidpoint 53 - AddNbbolImprove 54 - AddNbboJoin 55 - (reserved) 56 - (reserved) 57 - (reserved) 58 - (reserved) 59 - (reserved) 60 - RemovedOnEntry (currently not used) 61 - ImmediateMidpointRemoveOnEntry 62 - AddDisplayedPriceImprovement 63 - AddHiddenPriceImprovement 101 - RetailAddDisplayedLiquidity* 102 - RetailRemovedLiquidity* 103 - RetailLiquidityRoutedOut* 104 - RetailCross (currently not used)* 151 - RetailAddHidden* 152 - RetailAddMidpoint* 153 - RetailAddNbbolImprove*

Tag	Field Name	Req'd	Meaning/Values
			154 - RetailAddNbboJoin* 155 - (reserved) 156 - (reserved) 157 - (reserved) 158 - (reserved) 159 - (reserved) 160 - RetailRemovedOnEntry* 161 - RetailImmediateMidpointRemoveOnEntry* 162 - RetailAddDisplayedPriceImprovement* 163 - RetailAddHiddenPriceImprovement* Note: values 51 .. 160 are custom LTSE values.
30	LastMkt	Y	Market of execution for last fill. Uses ISO 10383 (MIC).
583	LnkID	N	As stated in the order.
1151	SecurityGroup	Y	Security ListingTape indicator ("A", "B", "C").
	<a href="#">Standard Trailer</a>	Y	

\* Not currently supported by LTSE.

## 8.2.5 Pending Replace

The Pending Replace execution report is sent in response to a replace request.

Tag	Field Name	Req'd	Meaning/Values
	Standard Header	Y	With tag 35 (MsgType) = 8
37	OrderID	Y	Unique identifier for an Order assigned by the exchange. This is guaranteed to be unique for a trading day.
11	ClOrdID	Y	As stated in the replace request.
41	OrigClOrdID	Y	As stated in the replace request.
17	ExecID	Y	Unique identifier of execution message as assigned by the exchange. Uniqueness is guaranteed within a single trading day.
150	ExecType	Y	E - PendingReplace
39	OrdStatus	Y	E - PendingReplace
55	Symbol	Y	As stated on the previous order.
65	SymbolSfx	N	As stated on the previous order.
54	Side	Y	As stated on the previous order.
151	LeavesQty	Y	Quantity open for further execution.
14	CumQty	Y	Quantity filled on the order.
6	AvgPx	Y	The calculated average price of all fills for the executed portion of the order.
44	Price	N	Limit price of the previous order if applicable.
38	OrderQty	Y	As stated on the previous order.
40	OrdType	Y	As stated on the previous order.
59	TimeInForce	N	As stated on the previous order.
1138	DisplayQty	N	As stated on the previous order.
114	LocateReqd	N	As stated on the previous order.
60	TransactTime	Y	The time at which the transaction occurred. UTC timestamp since epoch with millisecond precision.
583	LnkID	N	As stated on the replace request, or the original order if not supplied on the replace request.
5700	LocateBroker	N	As stated on the previous order.
	<a href="#">Standard Trailer</a>	Y	

## 8.2.6 Replaced

The Replaced execution report is sent when an order has been replaced.

Tag	Field Name	Req'd	Meaning/Values
	Standard Header	Y	With tag 35 (MsgType) = 8
37	OrderID	Y	Unique identifier for an Order assigned by the exchange. This is guaranteed to be unique for a trading day.
11	ClOrdID	Y	As stated in the replace request.
41	OrigClOrdID	Y	The ClOrdID associated with the replaced order.
17	ExecID	Y	Unique identifier of execution message as assigned by the exchange. Uniqueness is guaranteed within a single trading day.
150	ExecType	Y	5 - Replaced
39	OrdStatus	Y	0 - New 1 - PartiallyFilled
55	Symbol	Y	As stated in the replace request.
65	SymbolSfx	N	As stated in the replace request.
54	Side	Y	As stated in the replace request.
151	LeavesQty	Y	Quantity open for execution.
14	CumQty	Y	Total quantity filled on the order
6	AvgPx	Y	The calculated average price of all fills for the executed order.
44	Price	N	As stated in the replace request.
38	OrderQty	Y	As stated in the replace request.
40	OrdType	Y	As stated in the replace request.
59	TimeInForce	Y	As stated in the replace request.
1138	DisplayQty	N	As stated in the replace request.
114	LocateReqd	N	As stated in the replace request.
60	TransactTime	Y	UTC timestamp since epoch with millisecond precision.
583	LnkID	N	As stated on the replace request, or the original order if not supplied on the replace request.
5700	LocateBroker	N	As stated in the replace request.
	<a href="#">Standard Trailer</a>	Y	

## 8.2.7 Pending Cancel

The Pending Cancel execution report is sent in response to a cancel request.

Tag	Field Name	Req'd	Meaning/Values
	Standard Header	Y	With tag 35 (MsgType) = 8
37	OrderID	Y	Unique identifier for an Order assigned by the exchange. This is guaranteed to be unique for a trading day.
11	ClOrdID	Y	Unique identifier for an Order as assigned by the client. Uniqueness must be guaranteed within a single trading day.
41	OrigClOrdID	Y	The ClOrdID associated with the order being canceled.
17	ExecID	Y	Unique identifier of execution message as assigned by the exchange. Uniqueness is guaranteed within a single trading day.
150	ExecType	Y	6 - PendingCancel
39	OrdStatus	Y	6 - PendingCancel

Tag	Field Name	Req'd	Meaning/Values
55	Symbol	Y	As stated on the order.
65	SymbolSfx	N	As stated on the order.
54	Side	Y	As stated on the order.
151	LeavesQty	Y	The quantity open for execution on the order.
14	CumQty	Y	Total quantity filled on the order
6	AvgPx	Y	The calculated average price of all fills for the executed order.
44	Price	N	As stated on the order.
38	OrderQty	Y	As stated on the order.
60	TransactTime	Y	UTC timestamp since epoch with millisecond precision.
583	LnkID	N	As stated on the order.
	<a href="#">Standard Trailer</a>	Y	

## 8.2.8 Canceled

The Canceled execution report is sent when an order has been canceled. This may be because of a client requested cancel, a replace, or a cancel initiated by the exchange. Orders that are canceled by the exchange because of Time in Force instructions shall have an ExecType and OrdStatus as Expired. All other cases shall have ExecType and OrdStatus as Canceled.

Tag	Field Name	Req'd	Meaning/Values
	Standard Header	Y	With tag 35 (MsgType) = 8
37	OrderID	Y	Unique identifier for an Order assigned by the exchange. This is guaranteed to be unique for a trading day.
11	ClOrdID	Y	As stated in the cancel request or the ClOrdID of the order if an unsolicited cancel.
41	OrigClOrdID	Y	The ClOrdID associated with the canceled order.
17	ExecID	Y	Unique identifier of execution message as assigned by the exchange. Uniqueness is guaranteed within a single trading day.
150	ExecType	Y	4 - Canceled C - Expired
39	OrdStatus	Y	4 - Canceled C - Expired
55	Symbol	Y	As stated in the cancel request.
65	SymbolSfx	N	As stated in the cancel request.
54	Side	Y	As stated in the cancel request.
151	LeavesQty	Y	0
14	CumQty	Y	Total quantity filled on the order
6	AvgPx	Y	The calculated average price of all fills for the executed order.
44	Price	N	As stated on the order.
38	OrderQty	Y	As stated on the order.
21004	CancelReason	Y	Reason code for order cancellation. This is a custom LTSE FIX tag. 0 - Other 1 - UserRequestedCancel 4 - EndOfTrading 5 - LimitUpLimitDown 6 - Halted 7 - ExchangeSupervisory 8 - OrderExpired 9 - LockOrCrossBook 10 - SelfTradePrevention

Tag	Field Name	Req'd	Meaning/Values
			11 - InsufficientQuotes 12 - NonCompliantPrice 13 - ParticipantDisconnect 14 - OrderNotBookable 15 - TradeProtectionLimits 16 - UnableToRoute* 17 - FirmDisabled 18 - MPIIDisabled 19 - AccountDisabled 20 - NotionalExposureRiskBreached 21 - InvalidCIOrdId
60	TransactTime	Y	UTC timestamp since epoch with millisecond precision.
583	LnkID	N	As stated in the order.
	<a href="#">Standard Trailer</a>	Y	

\* Not currently supported by LTSE.

## 8.2.9 Restatement

The Restatement execution report is an unsolicited event to notify the client that an open order has been updated by the LTSE system. This message may be sent for orders configured for automatic repricing via the RepriceFrequency instruction. A restatement message will be sent if the order quantity is partially or fully cancelled because of Self Trade Prevention. This message will not be sent for Pegged Orders. In version 1.9 and beyond, clients can elect to receive an optional Restatement execution report when an order is booked and it either sets a new NBBO, or joins the existing NBBO.

NOTE: This message will be sent in the case of an order entered with the SingleReprice instruction, when the system is able to display the order at the booking price, if the order was repriced and displayed away from its booking price upon entry. In this case, the lastPx field will be the same as the previous Restatement, to indicate that the position on order book has not changed, but the message still will be sent to allow for correlation with the displayed orders on the LTSE MEMOIR Depth feed.

Tag	Field Name	Req'd	Meaning/Values
	Standard Header	Y	With tag 35 (MsgType) = 8
37	OrderID	Y	Unique identifier for an Order assigned by the exchange. This is guaranteed to be unique for a trading day.
11	CIOrdID	Y	The CIOrdID associated with the order.
17	ExecID	Y	Unique identifier of execution message as assigned by the exchange. Uniqueness is guaranteed within a single trading day.
150	ExecType	Y	D - Restated
39	OrdStatus	Y	0 - New 1 - Partially filled 4 - Canceled
55	Symbol	Y	As stated in the order.
65	SymbolSfx	N	As stated in the order.
54	Side	Y	As stated in the order.
151	LeavesQty	Y	Quantity open for execution.
14	CumQty	Y	Total quantity filled on the order.

Tag	Field Name	Req'd	Meaning/Values
6	AvgPx	Y	The calculated average price of all fills for the executed order.
44	Price	N	As stated in the order.
38	OrderQty	Y	The quantity after the restatement.
31	LastPx	Y	For ExecRestatementReason (3): The updated booked price. For ExecRestatementReason (5): The match price if this order had not been prevented from executing due to STP restrictions.
32	LastShares	N	For ExecRestatementReason (5): The number of shares that would have matched if this order had not been prevented from executing due to STP restrictions.
378	ExecRestatementReason	Y	3 - RepricingOrder 5 - Partial decline of OrderQty (38) 99 - Other (When value is 99 (Other), see the ExtendedRestatementReason for more information.)
60	TransactTime	Y	UTC timestamp since epoch with millisecond precision.
21022	ExtendedRestatementReason	N	This is a custom LTSE FIX tag. 0 - None 1 - SetNBBO 2 - JoinedNBBO 3 - SelfTradeCancelNewest 4 - SelfTradeCancelOldest 5 - SelfTradeDecrementAndCancel 6 - SelfTradeCancelBoth 7 - SelfTradeCancelSmallest If the Restatement is being sent because of Self Trade Prevention, this field contains the TYPE of Self Trade Prevention that caused the order to be reduced/canceled.
583	LnkID	N	As stated in the order.
	<a href="#">Standard Trailer</a>	Y	

## 8.2.10 Trade Cancel/Correct

The Trade Cancel/Correct execution report is sent to indicate that the price or quantity of a trade has been corrected. A trade cancel execution report is sent to bust a previous trade.

Tag	Field Name	Req'd	Meaning/Values
	Standard Header	Y	With tag 35 (MsgType) = 8
37	OrderID	Y	Unique identifier for an Order assigned by the exchange. This is guaranteed to be unique for a trading day.
11	ClOrdID	Y	The ClOrdID associated with the order.
17	ExecID	Y	Unique identifier of execution message as assigned by the exchange. Uniqueness is guaranteed within a single trading day.
19	ExecRefID	Y	The execID of the trade been referenced.
150	ExecType	Y	G - TradeCorrect H - TradeCancel

Tag	Field Name	Req'd	Meaning/Values
39	OrdStatus	Y	1 - Partially filled 2 - Filled
55	Symbol	Y	As stated in the order.
65	SymbolSfx	N	As stated in the order.
54	Side	Y	As stated in the order.
151	LeavesQty	Y	Quantity open for execution.
14	CumQty	Y	Total quantity filled on the order.
44	Price	N	As stated on the order
38	OrderQty	Y	As stated in the order.
31	LastPx	N	The corrected price. Required if Trade Correct.
32	LastQty	N	The corrected quantity. Required if Trade Correct.
6	AvgPx	Y	The calculated average price of all fills for the executed order.
60	TransactTime	Y	UTC timestamp since epoch with millisecond precision.
583	LnkID	N	As stated in the order.
1151	SecurityGroup	Y	Security ListingTape indicator ("A", "B", "C").
	<a href="#">Standard Trailer</a>	Y	

## 9 Application Messages from Client to Exchange

### 9.1 NewOrderSingle

The new order message type is used by institutions wishing to electronically submit securities orders to the exchange for execution.

Tag	Field Name	Req'd	Meaning/Values
	Standard Header	Y	With tag 35 (MsgType) = D
11	ClOrdID	Y	Unique identifier of the order as assigned by the client. The ClOrdID length must be <= 16.
55	Symbol	Y	CMS symbol tradable instrument.
65	SymbolSfx	N	Additional information about the security (e.g. preferred, warrants, etc.).
54	Side	Y	Side of order. 1 - Buy 2 - Sell 5 - SellShort 6 - SellShortExempt
38	OrderQty	Y	Quantity ordered. This represents the number of shares. The maximum order size permitted is 1,000,000 shares. The maximum notional value permitted is \$30,000,000
40	OrdType	Y	Type of the order. 1 - Market 2 - Limit P - Pegged
44	Price	N	Price per unit of quantity (e.g. per share).
59	TimeInForce	Y	Defines the time during which an order is eligible for execution. 0 - Day 3 - ImmediateOrCancel 4 - FillOrKill A - GoodForTime F - RegularHoursOnly. This is a custom LTSE value.
528	OrderCapacity	Y	Designates the capacity of the firm placing the order. A - Agency P - Principal R - RisklessPrincipal
18	ExecInst	N	Instructions for order handling on the exchange. If more than one instruction is required then separate each character by a space. 6 - ParticipateDoNotInitiate (Post only) f - IntermarketSweep h - ExternalRoutingNotAllowed
211	PegOffsetValue	N	Amount (signed) added to the peg for a pegged order.
1094	PegPriceType	N	Defines the type of peg. 2 - MidPricePeg 5 - PrimaryPeg
126	ExpireTime	N	Time/Date of order expiration, this is the expiration time of a GoodForTime TimeInForce.

Tag	Field Name	Req'd	Meaning/Values
			If omitted, expiration time will be set to the end of the LTSE post-market trading session. This is in FIX UTCTimestamp format.
110	MinQty	N	Minimum quantity of an order to be executed.
1138	DisplayQty	N	Quantity of the order to be displayed.
1084	DisplayMethod	N	Defines the replenishment size behavior for a reserve order. Selecting 'Undisclosed' will result in a fully hidden order. This tag should be specified for Pegged and Market orders. This tag should not be specified for fully displayed Limit orders. Currently if this tag is not specified for a Pegged or Market order the default value shall be Undisclosed. This is not recommended as this behavior may change in a future revision of the specification. 1 - Initial 3 - RandomizeBySize 4 - Undisclosed (hidden)
21006	ReserveReplenishTimeType	N	Defines the replenishment timing behavior for a reserve order. This is a custom LTSE tag. 1 - Immediate 2 - Random
1087	DisplayMinIncr	N	Defines the minimum increment to be used when calculating a random refresh of DisplayQty.
60	TransactTime	Y	UTCTimestamp since epoch with millisecond precision.
114	LocateReqd	N	Required on Short Sell and Short Sell Exempt orders only. Only acceptable value is 'N' which indicates the member has secured the required locate.
21001	SelfTradePreventionType	N	Defines the desired behavior in the event of a wash. This is a custom LTSE tag. 0 - CancelNewest 1 - CancelOldest 2 - DecrementAndCancel 3 - CancelBoth 4 - CancelSmallest
2362	StpGroupID	N	Unique identifier of self trade prevention group. 0 - Prevents orders from the same firm trading with each other. 1 - Prevents orders from the same MPID trading with each other. 2 - Prevents orders from same SenderCompIDtrading with each other. 3 to 65534 Prevents orders with the same StpGroupID across a firm from trading with each other.
21005	RiskGroupID	N	Unique identifier of a custom risk control set to be applied to this order. This is a custom LTSE tag.
21020	RepriceFrequencyType	N	Defines the frequency of a reprice. If this tag is not sent then the order will not be repriced. This is a custom LTSE tag. 0 - SingleReprice. The order will only be repriced

Tag	Field Name	Req'd	Meaning/Values
			upon entry for regulatory compliance. 1 - ContinuousReprice. The order will continuously be repriced for regulatory compliance. 2 - None. The order will not be repriced.
21021	RepriceBehaviorType	N	Reprice behavior when market is locked or crossed. This is a custom LTSE tag. 1 - RepriceLockCancelCross. Reprice if the market is locked, cancel if market is crossed. 2 - RepriceLockRepriceCross. Reprice if the market is locked or crossed.
21007	MPID	N	The MPID associated with the new order, if it is not supplied, the MPID assigned as the default MPID for the Port/Account is associated with the new order. This is a custom LTSE tag.
582	CustOrderCapacity	Y	Capacity of the customer placing the order. 1 - Member trading for their own account 5 - Retail Customer*
583	LnkID	N	Permits clients to assign a link identifier used for their own order tracking.
5700	LocateBroker	N	For a short sell order, the broker (MPID) that the member shall borrow shares from. Customer ports can be configured to require this field to be set on short sale orders, otherwise it is optional.
	<a href="#">Standard Trailer</a>	Y	

\* Not currently supported by LTSE. Orders with 582=5 will be rejected by the system.

## 9.2 OrderCancelReplaceRequest

The order cancel/replace request is used to change the parameters of an existing order.

Tag	Field Name	Req'd	Meaning/Values
	Standard Header	Y	With tag 35 (MsgType) = G
41	OrigClOrdID	Y	ClOrdID (11) of the previous order (NOT the initial order of the day) as assigned by the client, used to identify the previous order in cancel and cancel/replace requests.
11	ClOrdID	Y	Unique identifier for an Order as assigned by the client. Uniqueness must be guaranteed within a single trading day. The ClOrdID length must be <= 16.
55	Symbol	Y	This field may not change from the value stated in the original order.
65	SymbolSfx	N	This field may not change from the value stated in the original order.
54	Side	Y	Side may only change between Sell and SellShort. 1 - Buy 2 - Sell 5 - SellShort 6 - SellShortExempt
38	OrderQty	Y	Quantity ordered. This represents the number of shares. Increasing the size will cause the order to lose its priority in the book.

Tag	Field Name	Req'd	Meaning/Values
40	OrdType	Y	OrderType may only change from Limit order to Market order. 1 - Market 2 - Limit P - Pegged
44	Price	N	Price per share of the order. Changing the price will cause the order to lose its priority in the book.
1138	DisplayQty	N	Quantity of the order to be displayed.
114	LocateReqd	N	Required on Short Sell and Short Sell Exempt orders only. Only acceptable value is 'N' which indicates the member has secured the required locate.
60	TransactTime	Y	FIX UTCTimestamp since epoch with millisecond precision.
583	LnkID	N	Permits clients to assign a link identifier used for their own order tracking.
5700	LocateBroker	N	For a short sell order, the broker (MPID) that the member shall borrow shares from. Customer ports can be configured to require this field to be set on short sale orders, otherwise it is optional.
	<a href="#">Standard Trailer</a>	Y	

### 9.3 OrderCancelRequest

The order cancel request message requests the cancellation of all remaining size on an order.

Tag	Field Name	Req'd	Meaning/Values
	Standard Header	Y	With tag 35 (MsgType) = F
41	OrigClOrdID	Y	ClOrdID (11) of the previous order (NOT the initial order of the day) as assigned by the customer, used to identify the previous order in cancel and cancel/replace requests.
11	ClOrdID	Y	A Unique identifier for the cancel request. The ClOrdID length must be <= 16.
37	OrderID	N	Unique identifier for an Order previously assigned by the exchange.
55	Symbol	Y	Must be the same as the original order.
65	SymbolSfx	N	Additional information about the security (e.g. preferred, warrants, etc.).
54	Side	Y	Side of order. 1 - Buy 2 - Sell 5 - SellShort 6 - SellShortExempt
60	TransactTime	Y	UTC timestamp since epoch with millisecond precision.
	<a href="#">Standard Trailer</a>	Y	