Circular no.: MCX/CTCL/536/2024 August 14, 2024

Trading Binary Interface - MCX Enhanced Trading Interface (ETI) API v1.4.2

In terms of provisions of the Rules, Bye-Laws and Business Rules of the Exchange and in continuation to Exchange, MCX/CTCL/416/2021 dated July 20, 2021, Circular no.: MCX/CTCL/271/2023 dated April 25, 2023, Circular no.: MCX/CTCL/ 934/2023 dated December 27, 2023, Circular no.: MCX/CTCL/134/2024 dated March 11, 2024, Circular no.: MCX/CTCL/265/2024 dated April 29, 2024 and Circular no. MCX/CTCL/281/2024 dated April 30, 2024, Members of the Exchange are notified as under:

Trading Members and Vendors are requested to find Enhanced Trading Interface - ETI API 1.4.2, changes are provided in the document revision list.

Users are requested to make the changes in their application with respect to **IV Charset and Sequential Encryption/Decryption** which will be made available in Test environment shortly. Implementation in Live environment will be communicated separately.

For and on behalf of
Multi Commodity Exchange of India Ltd.

Abhay Angarkar
VP - Technology
Encl.: As below

Kindly contact Customer Service Team on 022 – 6649 4040 or send an email at customersupport@mcxindia.com for any clarification.



Multi Commodity Exchange of India Limited

Trading Binary Interface -

MCX Enhanced Trading Interface (ETI)

Version 1.4.2

14 Aug 2024

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Document details

Name	Version no.	Description
MCX_Trading_Interface_ETI_API	V 1.4.2	API documentation for Trading Binary Interface

Document Revision List

Revision No.	Revision Date	Revision Description
1	09-Jul-2021	• Creation of Base Version
2	02-May-2022(V1.1)	• Addition of new messages structure-11028,10311,10313,4100,10102,10108,10111. • New enum added in tag 28703. • New enum added in tag 18. • New enum added in tag 625. • New fields 717 and 39040 added in message structure-8030,8031,8033,8034,8036,8037. • New fields 378, 39040 added in message structure-8040. • New field 25009 added in message structure-10991. • New field 1300 added in message structure- 8005. • New enums added in tag 28721. • Updated length of tag 554. • Updated field ComplianceText with field UserReferenceText. • Removed tag 25019. • Updated tag 712 with tag 20655 in message structure 10100. • Updated tag 709,712,716 with tag 30737,30738,770 respectively -10117. • Removed tag 713 in message structure-10117. • Padding structure changed for message structure-8005. • Updation of tag 710 against field EncryptedDataMessageSize in message structure-10997, 10996. • Updated description of section 3 and 4.15. • Updated Template id to 10990 from 10043. • Updated description of section 4.24.2. • Updated description of section 4.22.2.4 •

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Revision No.	Revision Date	Revision Description
3	22-Nov-2022(V1.2)	• Addition of MarginChangeRptGrp in message structure-4025. • New enum added in tag 40 in message structure-10991. • Updated description of message structure-10125. • Updated description of message structure under section 5.4. • Updated description of message structure-8005. • Added enum in tag 28587 in message structure-10500. • Updated description of section 4.23.10.1 • Updated flow diagram of message structure- 10991. • Updated description of tag 25001. • Updated header of message structure- 4125. • Updated description of tag 50. • Updated field mLReferenceNumber with tag 709. • Updated description of section 4.22.2.4 • Updated sample C++ code in section 6. • Updated description of tag 11. • Updated flow diagram of message structure-10025. • Updated Required as Mandatory for tag 1300. • Updated sequence of message structure-8100,8101,10994. • Updated tag 18 in message structure- 10125,10126. • Updated tag 1227 of message structure- 10102. • Removed enums from tag 786. •
4	02-May-2023(V1.3)	• Addition of field tag 719 in message structure-10102,10108. • Updated description of section 4.22.2.4 • Updated description of section 4.5 • Updated description of enum value 215 in tag 378. • Updated description of tag 707.

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Revision No.	Revision Date	Revision Description
5	03-Nov-2023(V1.4)	• Updated description of section 4.14.1. • Addition of enums in tag 378 in message structure-10101,10103,10117,10993,10994,8040. • Updated description of section 4.10. • Updated description of tag 28782 in message structure-10121. • Update length of tag 28783 in message structure-10121. • Updated description of tag 718 and 1369. • Updated field name for tag 21002,7765. • Updated length and field name of tag 21003. • Updated description of section 4.22.2.4 • Updated description of message structure-10025 • Removed tag 39040 from message structure- 10121. • Removal of enum from tag 378 from message structure-10107,10101,10103,10117,1099310994,8040. • Removal of enum value from tag 39 in message structure-10101,10107,10110,10117,10104,10102,10108,10111 • Removal of enum value from tag 59 from message structure- 10125 •
6	11-Mar-2024(V1.4)	• Addition of Section 4.24.3 Encryption/Decryption for Interactive API • Addition of New Tag 307574, 307575, 39020 in message template id 10021 • Addition of Annexure for Encryption/Decryption with example code snippets in C++ and C#
7	29-April-2024(V1.4.1)	• In Session logon (template ID-10000) Tag 50 i.e. SenderSubID is mandatory for Encryption/Decryption.
8	14-Aug-2024(V1.4.2)	• Trading Session Event 10307 - 105=Service Resumed enum added in TradSesEvent 1368 field. • Header file updated with enum 105 Service Resumed • **4.24.3 Encryption/Decryption for Interactive API – Note added in example for Charset.** • Note added regarding OpenSSL version in section 4.24.3 • **4.24.3.1 Sequential Encryption/Decryption section added** • Retransmit 10008, Gap Fill 10032 - 13 = Trade Enhancement enum removed from RefApplID (1355) • Replace Order Response 10107 – 102 Modify Order Accepted enum added in field 378 ExecRestatementReason

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1.List of Abbreviations

Please find a list of all the abbreviations used.

UDF	User-defined field that is not part of the official FIX Specification
RRM	Risk Reducing Mode
IOC	Immediate or Cancel Order
HOVC	High Order Value Check
SMPF	Self-Match Prevention
T7	T7 trading system developed by Deutsche Börse Group

2. Introduction

The MCX Exchange's Trading Architecture is the trading platform of the Deutsche Börse Group, its affiliates, and partners.

The MCX Enhanced Trading Interface (MCX ETI) is the interface designed for participants who require the highest throughput and the lowest latency for their transactions.

All application messages between the client and the MCX ETI follow FIX V5.0 SP2 semantics including all officially approved extension packs.

A proprietary session layer with flat binary encoding is used in order to interface with the exchange

The ETI provides all trading functions of T7:

- Order Handling
- Execution Notifications
- Drop copy for complete order history of all standard orders of a session The following trading support information may be subscribed by each session:

General messages from MCX market supervision or OI and risk related messages Private risk control messages are automatically sent to each session of the corresponding trading and clearing business unit.

The MCX ETI does not provide any market data, reference data, or administrative functions.

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3.Technical Overview

3.1 Standard

The MCX ETI is predominantly derived from the industry standard FIX protocol. The best practices of FIX have been adopted.

3.2 Session Oriented

The MCX ETI is a session-oriented interface.

Participant applications connect to the trading system via the Exchange Application Gateways that host the client sessions. A session is established by opening a TCP/IP session to the gateway.

The exchange provides a unique session identifier that is used when logging on. A Session ID can only establish one session at any time. Each participant application requires its own session.

MCX ETI based applications receive information on orders which were entered in their own session.

3.3 Architecture Throttle

The number of transaction requests transmitted to the exchange in pre-defined time interval by each participant session is limited. This is to:

- Prevent single participant sessions generating excessively high transaction rates, which might adversely affect the exchange's trading as a whole
- Guaranteed fairness between participant sessions.

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4. Service Description

4.1 FIX Semantics

All application messages between the participant and the ETI follow FIX V5.0 SP2 semantics including all officially approved extension packs.

Additionally, user defined fields (UDF) and messages have been added to cover functional gaps in the FIX standard or to increase performance.

- All rejections and errors on an application and session level are communicated via the FIX standard Reject

(3) message

- All parties are identified by individual UDFs instead of repeating groups. UDF tags and names were chosen in a way that supports automated translation to standard FIX repeating groups for parties

The FIX messages are denoted in the following way:
- Message name (Message Type)

The FIX fields are denoted in the following way:
- Field name (FIX Tag)

FIX repeating groups and components are denoted in the following way:
- <Group name>

4.2 Party Identification

The participant is the market entity accessing the Exchange. The MCX concept of a member remains in place and will be represented by a “participant”’.

A participant may have several business units (Member Code) as independent entities taking part in trading at the exchange. Business units are identified by a business unit ID. A business unit belongs to a participant. The MCX ETI deals only with the concept of a business unit of a participant.

A user is a person, such as a trader who actually interacts with the Exchange. Users are identified by a user ID. A user belongs to one business unit. A user is a trader or administrator that logs on to the system and can perform various actions on the Exchange.

All requests that are received by the MCX Enhanced Trading Interface (MCX ETI), with the exception of session related requests, must carry the ID of a user that enters the request.

The details of the user of the business unit needs to be filled in the SenderSubID (50) tag of the request header. All orders and quotes must carry the identification of a physical person that is legally responsible for the order

The following roles and attributes are supported in MCX ETI: (The relevant ETI tags are given for clarity)

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Party	Description	Party Attributes	Relevant FIX Field
Participant	The participant is an entity accessing MCX Exchange's New Trading Architecture.	Participant Short Name	RootPartyExecutingFirm (22401)
Business Unit	Indicates the company or a part of a company that is set up as an independent entity taking part in trading at the exchange.	Business Unit ID	PartyIDExecutingUnit (20059), RootPartyIDExecutingUnit (20459), PartyDetailIDExecutingUnit (20259)
User	A business unit can have multiple users. A user can be a trading user and/or an administrator.	User ID	Username (553), SenderSubID (50)
Owning User	User who owns the transaction.	Owning User ID	PartyIDExecutingTrader (20012), RootPartyIDExecutingTrader (20412), TargetPartyIDExecutingTrader (20612)
		Owning User Short Name	RootPartyExecutingTrader (22412)
Entering User	User who initiates/submits the order transaction; could be the head trader or supervisor or a market supervision user.	Entering User ID	PartyIDEnteringTrader (20036)
Entering Entity	Identifies the entity that entered the transaction; might be market supervision, the participant, or the clearing member.	Entering Entity ID	PartyIDEnteringFirm (20007)
		Entering Entity Short Name	RequestingPartyEnteringFirm (22807)
Session	Identification of the session. A session belongs to a business unit.	Session ID	PartyIDSessionID (20055), TargetPartyIDSessionID (20655), RootPartyIDSessionID (20455)
System	Executing system	System ID	RequestingPartyIDExecutingSystem (20816)

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UDF tags for MCX ETI parties consist of an offset and the standard “enum” value of PartyRole (452):

- PartyID (448) has an offset of 20000
- RootPartyID (1117) has an offset of 20400
- TargetPartyID (1462) has an offset of 20600

UDF names for MCX ETI parties consist of the standard FIX field name (PartyID (448) RootPartyID (1117), TargetPartyID (1462)) concatenated with the symbolic name of the standard “enum” value of PartyRole (452) as defined in the FIX Repository.
For example, the MCX ETI tag and field name for the user is PartyIDExecutingTrader (2003)

4.3 Security Identification

Each MCX product is processed on exactly one partition; a partition is a grouping of products. To optimize the routing to the corresponding partition, the product identifier needs to be provided in each order by the participant. The exceptions to this rule are Short Order Message Layouts.

Both single and multi-leg instruments are uniquely identified by the unique instrument identifier.

Additionally, for multi leg instruments it is mandatory to specify the instrument type in all order requests.

Identifier	Description	Relevant FIX Tags
Product Identifier	The product identifier uniquely identifies a MCX product.	MarketSegmentID (1300)
Instrument Identifier	The instrument identifier uniquely identifies an instrument in the core system.	SecurityID (48) SimpleSecurityID (30048)1
Instrument Type	Required for complex instruments, valid values are: 1 = Simple Instrument 5 = Futures Spread. Example of Simple Instruments (Futures and Options). FUTCOM GOLD 5AUG2021 OPTFUT GOLD 27JUL2021	ProductComplex (1227)

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4.4 Order Types

The following MCX order types are supported via the MCX ETI interface:

Order Type	Description	Relevant FIX Tags
Market	An order for buying or selling at the best price prevailing in the market at the time of submission of the order. Any unexecuted portion of the order remains as a pending order till it is matched, or its duration expires. The MaxPricePercentage provides protection to market orders from unfair execution prices. The protection percentage will be applied on the first trade price of the order and the worst price is arrived at. The subsequent execution of the order will happen till the worst price if opposite side available else will be converted to limit order at the last executed price.	OrdType (40) = 5 MaxPricePercentage(28740)
Limit	Limit orders include a specified price limit and may not be executed at a price worse than that limit. In case Exchange has enabled, negative and '0' limit price will be allowed for the instrument	OrdType (40) = 2 Price (44)
Stop (Market)	Stop market orders create market orders when the specified trigger price is reached. Similar to market orders, stop orders are not visible in the order book for any market participant. The stop loss(market) order will be available at the exchange will not be visible to the market till the stop loss trigger price is reached for that instrument identifier. Once it is triggered it will be converted to a normal market order and will be subject to the respective rules applicable. Trigger price could be negative, '0' as well'.	OrdType (40) = 3 StopPx (99)
Stop (Limit)	The stop loss (limit) order will be available at the exchange but will not be will not be visible to the market till the stop loss trigger price is reached for that asset. Once it is triggered it will be converted to a normal limit order and will be subject to the respective rules applicable. Both limit and trigger price can be specified	OrdType (40) = 4 Price (44) StopPx (99)

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	as negative and '0'	
Good-for-day (Day)	All orders are assumed to be day orders unless otherwise specified. The validity of a day order ends at the close of that trading period for the Business day.	TimeInForce (59) = 0
End-Of-session (Session)	All orders are assumed to be session orders unless otherwise specified. The validity of a session order ends at the close of that trading session for the business day.	TimeInForce (59) = 7
Immediate or Cancel (IOC)	An IOC order is to be filled immediately, either completely or to the extent possible; the portion that cannot be filled immediately is cancelled. DQ is not allowed for TimeInForce IOC orders.	TimeInForce (59) = 3
Persistent	A persistent order is an order that survives a trading interruption. A persistent order is an order that is reinstated at the beginning of the Business Day (if valid for that Business Day) or after a Market Reset.	ExecInst (18) = H (encoded as bit map with first bit being set)
Standard	The complete order history of an order having this flag set will be part of the listener broadcast and may be recovered via retransmission requests. Standard orders are persistent.	ApplSeqIndicator (28703) = 1 (Recovery_Required)
Non- Persistent or Lean	Non persistent orders are automatically cancelled at the end of the business day or after a market reset. For Lean orders, the execution notifications Can be recovered (via retransmission requests on the session data channel).All data on lean orders are visible only to the session that submitted the order.Lean Orders are always non-persistent. The valid combination is below one: ApplSeqIndicator=0 (No Recovery Required) ExecInst=2(Non Persistent Order, FIX value Q)	ExecInst (18) = Q (encoded as bit map with second bit being set.) ApplSeqIndicator(28703)=0(No_ Recovery_Required)

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4.5 Order Quantity

Participants need to specify two quantity in the order request. The field OrderQty (38) will determine the total order quantity desired by the user. The field DisclosedQty (MaxShow) (210) will determine the quantity desired by the user to be shown in the market data.

The user can request to show total quantity in the market data or part of the total quantity subject to applicable criteria for the MaxShow quantity. The MaxShow quantity is also called as revealed quantity. Minimum DQ percentage will be applicable as set by exchange.

4.6 Cancellation

The owner of an order is the entering business unit, session and user. The Exchange also supports order cancellation on a different session for the same business unit. Head traders of the same trader group and the supervisor (MAT Terminal) of the business unit may cancel on behalf of the owning user.

Cancelling an order will remove the remainder of a live order from the Exchange's order book. The participant should specify the OrderID (37) and instrument identifier to identify the corresponding order to cancel.

The Exchange will respond with an Execution Report (8) or Reject message for cancellation confirmation or cancellation rejection respectively.

4.7 Modification

- The participant should specify the combination of OrderID (37) and Instrument Identifier to identify the corresponding order to modify. The MCX ETI interface will respond with an Execution Report (8) or Reject message for modification confirmation or modification rejection respectively.
- Orders that have been completely filled cannot be modified.
- The following order attributes cannot be modified:
  - Security identification: MarketSegmentID (1300), SimpleSecurityID (30048), SecurityID (48), ProductComplex (1227)
  - Side (54)
  - TradingSessionSubID (625)
  - ExecInst (18)
  - ApplSeqIndicator (28703)
  - ExecInst (18): Persistent to non persistent and vice versa
- The following restrictions apply to the modification of the field *OrdType (40)*:

  A Limit Order (OrdType (40) = 2) may only be modified to a Market Order (OrdType (40) = 5).

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- A Stop (Market) Order (OrdType (40) = 3) may only be modified to a Stop (Limit) Order (OrdType (40) = 4) or Limit Order (OrdType(40)=2) or Market Order (OrdType(40)=1)

- A Stop (Limit) Order (OrdType (40) = 4) may only be modified to a Stop (Market) Order (OrdType = 3) or Limit Order (OrdType(40)=2) or Market Order (OrdType(40)=5).

- An order that is modified will lose its time priority, i.e. it will get a new priority timestamp, if

  Price(44) is modified in any way, or

  OrderQty (38) is increased, or

  OrdType (40) is changed, or

  ExecType(150) “L = Triggered by system”.

4.8 Disclosed Quantity (MaxShow) quantity modification

In modification request the user can modify the MaxShow(210) field to show either the full LeavesQty (151) or part of LeavesQty (151) in the market data.

The quantity to be sent in the MaxShow(210) field should be the desired visible quantity of the user. All orders where the user desires to show the full LeavesQty (151) in the market data, the MaxShow (210) field can be set as 0 in the entry / modification request.

There are certain business rules on visible quantity, and it will be validated for each request.

4.9 Total Order Quantity Modification

Participants need to specify the new total order quantity when modifying the field OrderQty (38). This approach leads, from a participant’s point of view, to a clear and deterministic behaviour by specifying a total execution limit. The previously executed quantity of an order is maintained and is used to calculate the new open quantity. If this is zero or less, then the order will be cancelled.

During the lifetime of an order, the total quantity of the order is always equal to the sum of the open order quantity and the accumulated traded quantity:

OrderQty (38) = CumQty (14) + LeavesQty (151)

After an order has been cancelled (OrdStatus (39) is “4 = Cancelled”), the total quantity of the order is equal to the sum of the cancelled order quantity and the accumulated traded quantity, while the open order quantity is zero.

OrderQty (38) = CumQty (14) + CxlQty (84)

4.10 SMPF Self-Match Prevention Functionality

Self-Match refers to trades where both buyer and seller clients are same. Such Self-Match does not server any economic purpose of Members/Clients instead Members have to incur additional expenses like Transaction charges, CTT, etc

Buy and Sell orders having the same PAN (belonging to member and/or UCC) are considered as self-match orders and will not be matched with each other.

Self-match prevention refers to a mechanism by which Exchange restricts execution of self-match trades whereby when an active order gets potentially matched with a passive order resulting in Self-Match Trade.

User needs to refer the Extended Order Information (10117) message for SMPF cancellation.

System cancels the active or passive order as per SMPF order identifier received with order instead of executing the self-match trade.

4.11 Order Mass Cancellation

Using the Order Mass Cancellation Request, a user can cancel all orders within a specified instrument, user or session scope using single request to exchange.

The instrument scope can be extended to an entire product.

4.12 Text Fields

The new trading architecture supports three free-format text fields for trader-specific comments to an order or trade.
The mapping of the MCX text fields to the FIX tags is as follows:

Text Field	Valid Characters (hex)	Relevant FIX Tags	Mapping to MCX Field
Free Text Field 1	\x20, \x22-\x7B,\x7D,\x7E	FreeText1 (58)	UCC Code/Client Code
Free Text Field 2	\x20, \x22-\x7B,\x7D,\x7E	FreeText2 (25008)	CP Code
Free Text Field 3	\x20, \x22-\x7B,\x7D,\x7E	FreeText3 (25009)	

4.13 Terminal Info

The Terminal Info of the end-user who is placing the orders should be registered with the Exchange.
It consists of 15 digits and break-up of this is given below:

Terminal Info - for 15-digit unique no Initial 12 digits

- CTCL - 6 - pin code of Terminal Location,
- 3 digits - Branch id of Terminal Location,
- 3 - Running serial number of the Terminal within the branch
- IBT - "111111111111"
- DMA - "222222222222"
- Wireless Technology - "333333333333" 13th Digit Not generated through program trading software - "0"
- Generated through program trading software - "1"
- Smart Order Routing Without Program trading software = "2"
- Smart Order Routing with Program trading software = "3" 14-15 digit - Valid vendor code / In-house CTCL code for member

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4.14 Order Status and Execution Report

The ExecutionReport (8) message is used to communicate events that affect an order.

The field ExecType (150) specifies the type of event. The field OrdStatus (39) specifies the new status of the order.

The different scenarios and their usage of the OrdStatus (39) and ExecType (150) are as follows:

Scenario	OrdStatus (39)	ExecType (150)
Order book replay: Transmission of all active orders	0 = New 1 = Partially filled	D = Restated
Successful submission of an order	0 = New	0 = New
Rejected submission of an order	4 = Cancelled	4 = Cancelled
Successful modification of an order	0 = New 1 = Partially filled 2 = Filled	5 = Replaced
Rejected modification of an order	4 = Cancelled	n/a
Successful cancellation of an order	4 = Cancelled	4 = Cancelled
Rejected cancellation of an order	4 = Cancelled	n/a
Partial fill	1 = Partially filled	F = Trade (in FIX 4.4)
Complete fill	2 = Filled	F = Trade (in FIX 4.4)
Triggered Stop Order	0 = New	L = Triggered by system
Modification of an order to Immediate or Cancel (IOC) triggered by the system	0 = New	5 = Replaced
Unsolicited modification triggered by third party	1= New 2= Partially filled 3 = Filled	5 = Replaced
Unsolicited cancellation triggered by third party	4 = Cancelled	4 = Cancelled
Unsolicited cancellation triggered by the trading system	4 = Cancelled	4 = Cancelled

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Cancellation of not (fully) executed Immediate or Cancel (IOC) Order	4 = Cancelled	4 = Cancelled
Cancellation due to Self-Match Prevention (SMP)	4 = Cancelled	4 = Cancelled
Cancellation of squareOff Order	4 = Cancelled	4 = Cancelled
Cancellation of RRM Order	4 = Cancelled	4 = Cancelled
Approval of RRM Order	7 = RRM Suspended	0 = New
Approval of SquareOff Order	8 = SquareOff Suspended	0 = New

4.14.1Square Off Suspended Orders

Member whose status is Square Off Suspended can place the Order and would be sent to Bancs for further action. Below are the action steps which would perform and ExecRestatementReason should be considered along with Ord Status and Exec Type in Suspended and Square off Suspended scenario.

Action	Ord Status	Exec Type	Exec Restatement Reason
Order Placed by User with Status SquareOff Suspended and accepted by T7	8=SquareOff Suspended	0=New	101= Order Add
Order pending with CnS- Case 1- No Response received at given time	4=Cancelled	4=Cancelled	215=Risk Reduction Timer Expired
Order pending with CnS- Case 2- Order Accepted	0=New	0=New	101= Order Add
Order pending with CnS- Case 2- Order Rejected	4=Cancelled	4=Cancelled	197= Pending Order Deletion

4.15 Order Book Restatement

Order status inquiries are not supported by the Exchange Participants must maintain the state of orders based on the Execution Report (8) messages.

During the start-of-day phase and after a market reset event, all active orders of a session will be transmitted to the market participant via the respective session.

Initially a Trading Session Event message is sent informing the participant about start-of-day or a market reset event per partition respectively, optionally followed by Extended Order Information messages for each restated order of the corresponding session and finally a Trading Session Event message is sent indicating the end of the restatement per product.

In case a session is cancelled by the member (disconnected from the ETI- Gateway) all open non-persistent orders and quotes which were entered via this session will be deleted and will not be restated.

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Note: Order book restatement messages are recoverable. The owning session can request a retransmission in the event it was not logged on at the time. Order book restatement messages are also sent on the listener broadcast.

4.16 Trade Notifications

4.16.1 Trade Characteristics

If subscribed to the Trade broadcast, a session will receive Trade Notification messages that confirm each trade for the entire business unit.

Notifications about trades are only provided on Exchange via Trade Capture Report (AE) messages. Information provided via Execution Reports (8, U8) is indicative only and needs to be confirmed via a Trade Capture Report (AE). For further details see chapter Best Practices for order handling.

The Exchange will send out the Trade Notification message for each order and quote execution to the trading and clearing business units involved. The receiving clearing business unit may belong to a different participant. For trades in complex instruments (Multi Leg), the Trade Notification message will be generated for each instrument leg executions.

4.16.2 Trade Reconciliation

There are several identifiers that can be used to associate an Execution Report (8) with Trade Capture Reports (AE) and public trades on the market data interface. Please find an example message flow in the appendix, Trade Reconciliation and Identifiers Trade reconciliation and identifiers.

Every match event with one or more executions (match steps) in a simple or complex instrument result in only one Execution Report (8) for each order respectively. A Trade Notification will then be sent to confirm each trade at each price level. For complex instruments, there is a Trade Notification for each leg execution of the instrument.

Every match step occurring at the exchange has an identifier that is provided in the field FillMatchID (28708) in the Execution Report (8) and TrdMatchID (880) in the Trade Notification. This identifier allows participants to link trade capture reports and the corresponding execution report.

The TradeID (1003) field in the Trade Notification in MCX ETI uniquely identifies all order leg allocations referring to the same matching event, simple instrument, and price.
The field SideTradeID (1506), which is unique for a product and business day, in the Trade Notification provides the private identifier of an order or quote match step event, which can be reconciled with the corresponding Execution Report (8) for orders and Execution Report (U8) for quotes the following way:

For order match events in simple instruments, the Execution Report (8) message provides the order execution ID on each price level, FillExecID (1363).

For order match events in complex instruments the Execution Report (8) message provides the order execution ID on each price level and additionally the order leg execution ID, LegExecID (28725)

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Match Reporting	Execution Report (8)	Trade Notification
Trade event on instrument level: public trade volume reporting	FillMatchID (28708),	TrdMatchID (880)
Identifier for all leg allocations referring to the same simple instrument		TradeID (1003), OrigTradeID (1126)
Order in simple instrument	FillExecID (1363)	SideTradeID (1506)
Order in complex instruments	LegExecID (28725)	SideTradeID (1506)

- For order match events in complex instruments the Execution Report (8) message provides the order execution ID on each price level and additionally the order leg execution ID, LegExecID (28725).

4.17 Trade Enhancement Notification

If subscribed to the Trade Enhancement notification broadcast, a session will receive Trade Enhancement Notification messages that confirms the acceptance or rejection of trade by the respective custodian.
The Exchange will send out the Trade Enhancement Notification message for each accepted/ rejected trade by the custodian. This message will be sent to the owing session and the admin session of the business unit.

4.18 Listener Broadcast

The new trading architecture offers 'drop copies' for standard orders to sessions within the same business unit. This service is provided on session level; for example, each listener session may subscribe to listener broadcast data of one specified session.

The listener broadcast provides information of the complete order history of standard orders of a session and can be retransmitted. Complete order history means here: all changes to an order happening on the current business day. Drop copies for standard orders are sent once it is entered into the persistent store.

4.19 News

The News message provides public information from the MCX market supervision.

This public stream provides a unique sequence number to support retransmission, i.e. news messages are recoverable

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4.20 Timestamps

All ETI timestamps will provide date and time, in UTC, represented as nanoseconds past the UNIX epoch (00:00:00 UTC on 1 January 1970). ETI provides the following timestamp information:

Timestamp	FIX field	Description
Transaction timestamp	ExecID (17), MassActionReportID (1369), SecurityResponseID (322),	Taken when a transaction is functionally processed and used as a unique message identifier per product for messages sent by the MCX ETI.
Entry timestamp	TrdRegTSEntryTime (21009)	Time of the creation of the order. It will be set when an order is received and processed by the Matching Engine. This timestamp is only provided for Standard Orders.
Request in	RequestTime (5979)	Time when request is considered for processing

4.21 Strategy ID and STSN

The Strategy that a member wants to implement through Algorithm Trading shall be approved by the exchange. Post Approval Exchange will allocate particular Strategy ID to specific User ID (ATS User) for the approved strategy.

The Strategy that a member wants to implement through Algorithm Trading shall be approved by the exchange. Post Approval Exchange will allocate particular Strategy ID to specific User ID (ATS User) for the approved strategy.

All Order Entry/ Modification / Cancellation requests coming through third party application should contain the Strategy ID. If Order Entry/ Modification / Cancellation requests contains the Strategy ID other than assigned to the user, the respective Order Entry/ Modification / Cancellation requests shall be rejected by the system.

The users can be assigned product specific strategies with different parameters and definition. For Strategy approved by exchange, Strategy ID may be assigned as 'NNNNN'. All parameters of the user defined strategies should be stored by the third-party applications.

Apart from the strategy Id, the third-party application is expected to send 'Strategy Trigger Sequence Number (STSN)' with each of the entry / modification / cancellation request.

The format of STSN should be dddNNNNNnnnnnnnnn; where

ddd denotes the Day of Year. In case if day of year is 1 then, '001' needs to be entered

NNNNN - Number stored by 3rd party applications for product specific strategy, Max range is 99999

Small N's- sequence running number, should be incremented with every request. Thus, the first part dddNNNNN - represent user defined strategies for a particular day of the year.

Each time there is need of sending entry or modification or cancellation request to exchange, third party application is expected to generate new STSN.

STSN should also be stored with relevant values of trigger / Opportunity.

Third-party applications should have provision for complete audit trail of values defined by user against a strategy. As part of exchange inspection / system audit, this data will be verified with actual orders and values sent.

4.22 Connectivity and Session Parameters

4.22.1.1 Session Concept

The Exchange implementation is a session-oriented interface whereby the session is the basic scope of the interaction with the new trading architecture. Every session may only be instantiated once. Each TCP/IP connection may only support one session instance.

The receiver of the direct response to a request sent to the gateway is always the submitting session. Additionally, the session is informed about system events and all unsolicited messages referring to status changes of orders belonging to that session.

4.22.1.2 User Authentication

The User Logon message identifies and authenticates a qualified user establishing access to the new trading architecture.

The participant must provide the binary User ID in the Username (553) field, and the corresponding password in the Password (554) field.

A successful user logon will grant the user access to the trading system.

All further transactions that require a user scope from the session are validated in the gateway against an authenticated User ID, i.e. SenderSubID (50) in the message header.

Users may logon to the new trading architecture via all sessions of their business unit. Multiple User Logon messages for a user via the same session are rejected.

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4.22.1.3 Identification and Authentication

The MCX ETI has a three-step logon procedure, with a Connection Gateway Request message to retrieve the assigned application gateway from the connection gateway, followed by a Session Logon at the assigned gateway and followed by a User Logon message.

4.22.1.4 IP Addresses and Ports

At first, the participant must establish a TCP/IP session to the Connection Gateway — the IP/port numbers are provided by the exchange. Participants will be provided with a "Primary" and "Secondary"

Connection Gateway address. If the connection to the primary Connection Gateway fails, participants should connect to the secondary Connection Gateway.

Once that connection is established, the participant sends a Connection Gateway Request message. The Connection Gateway will validate PartyIDSessionID (20055) (CTCL User ID) and Password (554), which are parameters provided by the exchange. The Connection Gateway cannot be used for any other purpose.

The Connection Gateway Response contains the IP/ports of the primary and secondary application gateway where the member application can establish an active MCX ETI session. Once the Connection Gateway Response message is received, the Connection Gateway connection is closed.

The participant must now try to connect to one of the provided application gateways within 120 seconds. If the connection is not made within this time, the slots are released, and the participant must start again from scratch.

4.22.1.5 Session Authentication

The participant must first open a TCP/IP connection to the specified gateway. The Session Logon /Session Password change message must be the first message sent by the participant authenticating the MCX ETI session. Any other messages other than Session Logon will be rejected and the TCP connection will be disconnected by the Exchange.

The gateway will validate PartyIDSessionID (20055) and Password (554), which are parameters provided by the exchange. A successful logon will initiate a MCX ETI session.
Note: The Session Logon message is not used to log on and authenticate a user on the new MCX trading architecture.

Participants needs to specify existing user id and password in PartyIDSessionID and Password field respectively.

The following messages may be sent on a session without any authenticated trader:

Session logon/logout

Heartbeat messages

Subscription and un-subscription of broadcasts

Retransmission of recoverable data

Trader authentication

All other requests must be submitted with an authenticated trader name in the SenderSubID (50) of the message header.

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4.22.1.6 Password Management

Participants needs to use same password during session login and user login request.

Password Policy

- It should be Minimum of 8 characters in length and maximum 12 characters.
- It must be composed of following three-character sets:

  o Upper / Lower 26 letters of English Alphabet A-Za-z o Ten digits 0-9

  o Special characters (32 characters) - (‘~!@#$%%^&*()_+-={}|[]\:;’<>?,./)

  o Password should be case sensitive I.e. ABC is not as abc.

  o If wrong password is attempted 5 times then session will get locked. In Login page error will come “Session locked out”

  o Space is not a valid password character.

  o Reset password- last 5 passwords cannot be used.

  - The password cannot contain the user account name or parts of the user full name that exceed three consecutive characters.

- Password has to be encrypted as per RSA token.
- When password expires , user can send any one password change message for renewal.
- Connnection Gateway Request will succeed with existing password even if password is expired.
- Code Snippets are provided in section 6 – Appendix.
- In case of password expiry

  o Connection and session logon would be successful

  o In case of user login, user would receive error message “password has been expired”.

  o After this using user password change , new password is required to be put and accordingly in response “password change successful” message would be received.

  o After this, user need to re-login again with new password.

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4.22.3 Throughput Limits

A participant application may send multiple messages without waiting for a response. However, the number of messages allowed within a given timeframe is limited by the use of throttles.

The limits are configured by the new trading architecture for each session type and are provided to the participant application in the Session Logon Response message. The limit parameters are upper limits and do not guarantee throughput rates. As loads fluctuate in the exchange system, actual throughput rates can vary.

A participant application may send multiple messages without waiting for a response. However, the number of messages allowed within a given timeframe is limited by the use of throttles.

The mechanism uses two components:

Transaction limit.

Reject/disconnect limit.

4.22.3.1 Transaction limit

The transaction limit is the maximum number of messages that a participant application may send within a configured time interval without getting rejected (sliding window approach).

If a participant application exceeds the threshold “number of transactions per time interval”, the exceeding request will be rejected and not queued. The unit of the time interval is milliseconds.

Required heartbeats do not count against the transaction limit.

For example,

A transaction limit of 200 messages per second could berepresented in the Logon (A) response message as:

ThrottleNoMsgs (1613) = 200 ThrottleTimeInterval (1614) = 1000

4.22.3.2 Reject/Disconnect Limit

The purpose of the Reject/Disconnect Limit is to protect the gateway from large amounts of invalid data. It defines the maximum number of sequential message rejects due to the violation of the transaction limit allowed by the MCX ETI.

Once an acknowledgement has been sent, the reject/disconnect limit counter is reset to zero. If the participant application continues to send messages which are rejected for exceeding the transaction limit and the reject/disconnect limit is exceeded, the MCX ETI will disconnect the session.

For example, a disconnect limit of 500 rejects is represented in the Logon (A) response message as:

ThrottleRejectNoMsg (25002) = 500

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4.23 Session Layer

The MCX ETI follows standard FIX 5.0 semantics, however, the header and trailers have been suitable modified.

Each message in the MCX ETI has a unique numeric TemplateID (28500) assigned to it in addition to the standard FIX MsgType (35) information provided in the header

The MCX ETI will echo the participant's MsgSeqNum (34) of the request header in the corresponding response header.

Retransmission is not supported on the session layer; it is available on the application layer for a subset of messages. It is not possible to retransmit all messages received on a session. It is possible to retransmit some message types using application message sequencing.

4.23.1 Flat Binary Encoding

ETI messages have a defined order of fixed-length fields and arrays of fixed-length elements. MCX ETI avoids string fields wherever possible.

The arrays (repeating groups) consist of a counter (FIX NoXXX fields, indicating the number of array elements) and their fixed-length elements. In general, repeating groups are at the end of the ETI messages.

Binary values are presented in little endian byte order.

The length of ETI messages (BodyLen (9)) sent by the ETI gateway is always set to a multiple of 8. If there is a variable size string at the end of a message, it is "filled up" with binary zeroes.

Padding bytes required for proper alignment do not need to be initialized.

4.23.2 Logon

The participant application needs to open a TCP/IP connection to the new trading architecture during start-up.

The first message to be sent on the connection must be the Session Logon message. If the Session Logon message is not sent within a certain time interval, the connection will be closed by the new trading architecture

If the session logon fails, no further logon attempts will be accepted on that TCP connection. The application must drop the TCP session and restart the logon to the Connection Gateway

4.23.3 Logout

The participant may log out the session using the Session Logout message

The MCX ETI will automatically drop a session if:The TCP/IP session is disconnected., If three consecutive heartbeats are missed,If reject/disconnect limit is exceeded.

After a successful session logout, the participant should shut down the connection and close the socket.

Participant applications must disconnect from the MCX ETI each day after trading and should close the TCP/IP socket after logging off the session.

The system will perform a forced logout overnight after which time the participant may log back in.

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4.23.4 Heartbeat

The HeartBtInt (108) must be specified by the participant in the Session Logon message. This parameter specifies the period in which the MCX ETI sends heartbeats to the participant and the interval the MCX ETI checks for request messages from the application.

The Heartbeat message should be sent by the participant if no other message has been processed during the defined HeartBtInt (108) interval. It is used by the MCX ETI gateway to monitor the status of the communication link to the ETI client during periods of inactivity.

A heartbeat interval of zero indicates that MCX ETI will not take any action for missed heartbeats. This setting can only be used on test systems. If the heartbeat value is sent as zero in the request, then the MCX ETI will use a default value.

The minimum value is 100 milliseconds in the production system. The upper limit is 60 seconds.
If the field is not supplied or set as zero, then the MCX ETI will use a default value. The applied heartbeat interval is provided in the Session Logon Response.

Note: Heartbeats do not count against, nor do they reduce, any of the throttle counters. The Heartbeat Notification is sent by MCX ETI based on the heartbeat interval, regardless if the participant application sends Heartbeat messages or not. It may be used by the ETI client to monitor the status of the communication link to the MCX ETI gateway during periods of inactivity.

4.23.5 Reject

All rejections and errors on the application and session level are communicated via the FIX standard Reject (3) message, i.e. none of the fields in the request message other than MsgSeqNum (34) will be echoed.

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4.23.6 Message Sequence Number

The MsgSeqNum (34) in the request header must increment with each message sent by the participant to the gateway, starting with the Session Logon message as sequence number 1.

The MCX ETI will echo the participant's MsgSeqNum (34) of the request header in the corresponding response header.

In case of any unexpected sequence numbers, sequence number gaps, or duplicate sequence numbers, the request message will be rejected with a sequence number error, and the session will be disconnected.

Note: There is no recovery mechanism for message sequence numbers in the MCX ETI. All participant connections (including a reconnection after a disconnection) are considered "new" and all Session Logon requests are expected to contain the message sequence number 1.

4.23.7 Application Message Sequencing

4.23.7.1 Application Message Identifier

All recoverable session data sent by MCX ETI will provide an application message identifier, ApplMsgID (28704), to uniquely identify order data sent by the gateway. With the help of the application message identifier, the participant is able to ask for a retransmission of recoverable order data.

The ApplMsgID (28704) has the following characteristics:

- It is unique per partition and business day.
- It is ascending during a business day until end-of-stream.
- Gap detection is not possible
- It does not start at any particular number
- Consists of 16 bytes, ordered with the highest significant byte first (as in big endian).

Memory comparison functions such as memcmp() can be used to compare two Application Message Identifiers.

Two Application Message Identifiers ApplMsgID1 and ApplMsgID2 are equal, if the character array of size

16 of ApplMsgID1 and ApplMsgID2 are equal at all positions

The ApplMsgID1 is greater than ApplMsgID2, if at the first differing position i, the corresponding character ApplMsgID1[i] is greater than ApplMsgID2[i].

The ApplMsgID1 is less than ApplMsgID2, if at the first differing position i, the corresponding character ApplMsgID1[i] is less than ApplMsgID2[i].

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4.23.7.2 Application Message Sequence Number

MCX ETI will assign an application message sequence number, the ApplSeqNum (1181), to messages related to Trade Notification, News and Risk Control (Risk Notification).

The ApplSeqNum (1181) has the following characteristics:

- The first message will be the message sequence number 1.
- It is ascending during a business day until end-of-stream (Trade Notification).
- The message sequence will be gapless and allows gap detection.
- Trade notification: unique per business day, partition, and business unit.
- News: unique per market.
- Risk Control: unique per business unit.

4.23.8 Session Data

Each session receives information on orders and quotes which were entered in their own session automatically without any subscription.

The Session Data include Trading Session Event messages: start of service, market reset, and end of service.

For standard orders the complete order history may be recovered. Session Data are recoverable, if and only if they have an ApplMsgId (28704).

Session Data are recoverable, if and only if they have an *ApplMsgId (28704)*.
Should be populated with Session ID.

Note: The retransmission message template used for order events may differ from the session data response template. For more details, please refer Retransmit Response (Order Event).

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Broadcast	FIX Message Type	Application Identifier	Broadcast Message Identifier
Listener: complete order history of standard orders of a session	Execution Report (8), Trading Session Status (h), Order Mass Action Report (BZ)	5	ApplMsgID (28704)
Trades: Trade data on session level	Trade Capture Report (AE)	1	ApplSeqNum (1181)
General messages from MCX market supervision	General Messages (B)	2	ApplSeqNum (1181)
Service Availability: Provides information on the availability of a partition .	User Notification (CB)	3	N/A
Trade Enhancement: Provides information on acceptance or rejection of trades by custodian	Trade Enhancement Notification (U31)	1	ApplSeqNum (1181)
Ex/DEx	Ex/DEx notification	12	ApplSeqNum (1181)

4.23.9 Broadcast

A broadcast is an application message that is available to multiple sessions, such as Trades or News messages.
Sessions may receive the following broadcast types:

After a session is established, it is not subscribed to any broadcast, but the risk control broadcast; nevertheless, unsolicited session data is received.

For broadcast subscription, the Subscribe message is used. Per request only one broadcast type, via RefApplID (1355), may be subscribed. The response provides a unique subscription identifier in ApplSubID (28727).

For broadcast un-subscription, the Unsubscribe message is used. Per request, only one subscription, via RefApplSubID (28728), may be un-subscribed.

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For EX-DEX , RefApplID(1355) is used.

The following tables shows the results of different subscriptions:

RefApplID (1355)	SubscriptionScope (25001)	Result
Trade (1)	0xFFFFFFFF (no value)	All trade data of the own session.
General Message	0xFFFFFFFF (no value)	All public general messages from the market supervision of the specified market.
Service Availability (3)	Partition ID	Availability of the services provided by the specified partition.
Service Availability (3)	0xFFFFFFFF (no value)	Availability of the services provided by all known partitions.
Ex/Dex	RefApplID(1335)	Complete history of EX/Dex Requests (of the current business day) submitted via the specified session

RefApplID (1355)	SubscriptionScope (25001)	Result
Listener Data (5)	Session ID	Complete history of standard orders (of the current business day) submitted via the specified session.

The receipt of the risk control broadcast is required by the regulator for all sessions; therefore, no subscription is needed. The FIX Application Sequencing concept2 is used for broadcasts on MCX ETI:

Each broadcast type is assigned a unique ApplID (1180).

Application-level messages are uniquely identified using a combination of ApplID (1180) and ApplSeqNum (1181) or ApplID (1180) and ApplMsgID (28704) respectively.

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RefApplID	Drop Copy at member level	Drop Copy at user group	Drop copy at self
5(Listener Data)	Subscription Scope=0 Member Level Details	Not Provided	Subscription Scope=Session ID User Level
1(Trade)	Subscription Scope=0 Member Level Details	Subscription Scope=0 Wild card/List of Users	Subscription Scope=Session ID User Level
2(News/Gen Msg)	Market	Market	Market
12(Ex/Dex)	Subscription Scope=0 Member Level Details	Subscription Scope=0 Wild card/List of users	Subscription Scope=Session ID User Level

4.23.10.1 Retransmission

Re-transmission is supported for recoverable session data and the broadcast types, trades, news, and risk control.

Since application message identifiers and sequence numbers are unique per partition, the PartitionID (5948) is a mandatory parameter for all retransmission requests.

RefApplID	Drop Copy at member level (Trading group not assigned)	Drop Copy at user group (Trading Group assigned)	Drop copy at self
5(Listener Data)	Not Provided	Not Provided	Subscription Scope=Session ID User Level
1(Trade)	Subscription Scope=0 Member Level Details	Subscription Scope=Session ID User Level	Subscription Scope=Session ID User Level
2(News/Gen Msg)	Market	Market	Market
12(Ex/Dex)	Subscription Scope=0 Member Level Details	Subscription Scope=Session ID User Level	Subscription Scope=Session ID User Level

For retransmission, the Retransmit and Retransmit (Order) message respectively is used. With a re-transmission request, only data in the scope of one broadcast type and partition can be requested via RefApplID (1355) and PartitionID (5948).

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The FIX application level recovery concept can be used by the participant for selective recovery and late start restatements:

Optionally, the application message identifiers and respectively the application message sequence numbers provide the retransmission sequencing range. If no start value is specified, it is assumed to be "1". If ending range is absent, it is assumed to be infinity ("all available messages").

The re-transmission response, Retransmit Response and Retransmit Response (Order) message respectively, will provide the range of recovered order data in the fields ApplBegMsgID (28718) and ApplEndMsgID (28719) and for all other broadcasts respectively in the fields ApplBegSeqNum (1182) and ApplEndSeqNum (1183).

Recoverable Data	Scope	Application Message Sequencing	Application Identifier RefApplID (1355)	Retransmission Sequencing
Recoverable session data	session	ApplMsgID (28704)	4	ApplBegMsgID (28718), ApplEndMsgID (28719)
Listener broadcast (standard order drop copy)	session[2]	ApplMsgID (28704)	5	ApplBegMsgID (28718), ApplEndMsgID (28719)
Trades	business unit	ApplSeqNum (1181)	1	ApplBegSeqNum (1182), ApplEndSeqNum (1183)
General Messages	market	ApplSeqNum (1181)	2	ApplBegSeqNum (1182), ApplEndSeqNum (1183)
Trade Enhancement	Session	ApplSeqNum (1181)	1	ApplBegSeqNum (1182), ApplEndSeqNum(1183)
Ex/DEx	Session	ApplSeqNum (1181)	12	ApplBegSeqNum (1182), ApplEndSeqNum(1183)

The FIX application level recovery concept can be used by the participant for selective recovery and late start restatements:

This range may differ from the requested range, i.e. further retransmission requests may need to be submitted.

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4.23.10.2 Best Practices for Order Handling

All order response information in the MCX ETI is sent out immediately after the order has been processed by the core matching process.

All order response information in the MCX ETI is preliminary; this includes Execution Reports (8) sent out for non-persistent orders. This is also true for the standard order drop copy information published via the Listener broadcast

A participant application always needs to confirm the preliminary execution information with the corresponding legally binding Trade Notification message (Trade Capture Report (AE)).

In case of an exchange system failure, the participant is informed of a market reset event via the Trading Session Event message including the last persisted application message identifier. This message is followed by an order book restatement of all active orders.

In this event it is highly recommended to reconcile all Execution Reports (8) with higher application message identifiers with the corresponding Trade Capture Reports (AE). If there is no Trade Capture Report (AE) for a given Execution Report (8) then this Execution Report (8) has to be considered invalid and should be discarded. Please find detailed information regarding trade reconciliation in corresponding chapter.

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4.24 Message Formats

This chapter provides details on the administrative and application messages used by the MCX ETI. Information on data types and the most important error codes are provided.

Messages sent by participants not listed in this section are rejected by the server via a Reject (3) message.

Each ETI message format has a unique binary message type identifier (Template ID (28500)) and is based on a standard FIX message.

The Interface version used by the participant needs to be provided during Session Logon in DefaultCstmApplVerID (1408); the Session Logon Response will return the Interface Version, which the MCX ETI Gateway currently uses, in the same field.

In production, the Interface Version will allow the participant to recognize that the MCX ETI has changed. The Build Number shows to which ETI XML file, ETI XSD file, canned data, exchange software the ETI Manual belongs to.

4.24.1 Message Fragmentation

In case the complete data of a transaction does not fit into a single message, MCX ETI automatically sends a sequence of messages to the participant.

The field LastFragment (893) in the corresponding header structure indicates whether the current message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction or if the application should wait for further messages in order to retrieve the full data set.

Another mechanism for message fragmentation that is used for inquiring reference data (session) basis on the LastEntityProcess (25035) field that is part of the requests and the responses.

In the first inquiry (request), LastEntityProcess (25035) must not be set. The application should continue sending the inquiries using the LastEntityProcess (25035) from the recent response. A response with LastEntityProcess (25035) not set indicates that no more data is available.

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4.24.2 Data Types

MCX ETI supports following data types:

Datatype	Description	No Value
signed int	• little endian byte order - supported are 1, 2, 4 and 8-byte, signed integers - two's complement representation	1 byte signed int: 0x80 2 byte signed int: 0x8000 4 byte signed int: 0x80000000 8 byte signed int: 0x8000000000000000
unsigned int	• little endian byte order - supported are 1, 2, 4 and 8-byte, unsigned integers	1 byte unsigned int: 0xFF 2 byte unsigned int: 0xFFFF 4 byte unsigned int: 0xFFFFFFFF 8-byte unsigned int: 0xFFFFFFFFFFFFFFFF
Float	• encoded as 8-byte signed integer 8 implicit decimals	0x8000000000000000
Fixed String	• length information specifies the fixed size - encoded as character array - completely filled with valid characters (space padding if required)	0x00 at the first position
Fixed String (0-terminable)	• -length information specifies the fixed size - encoded as character array optionally 0-terminable (minimum string size of 1) - XML file: attribute "isTerminable" is set to true - padding after 0-terminator required up to fixed size	0x00 at the first position
Variable String	• length information specifies the maximum possible size - separate counter field specifies the transmitted string size - XML file: attribute "variableSize" set to true - the message is filled up to a multiple of 8 bytes and truncated	0x00 at the first position (if the field is not the last one of a certain message)

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Counter	This data type represents an unsigned integer as a counter for arrays of variable size.	see 1-byte unsigned int and 2 byte unsigned int respectively
LocalMktDate	Date of Local Market (as opposed to UTC) in YYYYMMDD 4-byte unsigned binary format.	see 4-byte unsigned int
PriceType	Price in integer format including 8 decimals. For certain asset classes, prices may have negative values. Price needs to be multiply by 100000000.Ex-For 5 in price then user need to send 5*100000000.	see 8 bytes signed int
Amount	Amount in integer format including 2 decimals.	see 8 bytes signed int
Qty	Quantity in integer format including 4 decimals. Qty needs to be multiply by 10000.Ex-For 1 lot-send Qty as 10000.	see 8 bytes signed int
SeqNum	Message sequence number in 8-byte unsigned binary format.	see 8-byte unsigned int
UTCTimestamp	Date and time, in UTC, represented as nanoseconds past the UNIX epoch (00:00:00 UTC on 1 January 1970).	see 8-byte unsigned int
char	String of length 1.	0x00
Data	Byte array where each byte has a value from 0 to 255: • -the length information specifies the fixed size - encoded as byte array - byte array is always filled completely	Each byte filled with 0x00.
chartext	• length information specifies the fixed size - encoded as character array optionally 0-terminable (minimum string size of 1) - XML file: attribute “isTerminable” is set to true - padding after 0-terminator required up to fixed size	0x00 at the first position

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4.24.3 Encryption/Decryption for Interactive API

Background

Based on regulatory requirement, the exchange is introducing encryption of messages for ETI API, for encryption the exchange is introducing, GCM encryption mode with 256 bytes will be utilized for all transaction messages. The Key and IV (Initialization Vector) are provided in the Connection Gateway Response Message. Session logon connections use the 256 bytes GCM encryption mode with a standard 32-byte key and a 12-byte IV, without the use of an Authenticator.

Overview

Member applications will now establish connections to the designated Exchange Gateway server via TCP, and each message will undergo encryption/decryption using the same session key (symmetric cryptography AES 256 bits GCM mode) at both the member and Exchange ends. The symmetric session key remains valid for the duration of a session. Members need to ensure encryption of messages within member environment towards their clients. While encryption of messages within member environment towards their client may need to be done by respective members.

Proposed Methodology

Exchange proposes AES-256 GCM symmetric encryption approach. Following is an overview.

Step 1: Connection Gateway Request

In the new login process with encryption, users will submit a connection gateway request (10020) with an encrypted password using PKCS#1. In this first message, request is non encrypted with only encrypted password.

Step 2: Connection Gateway Response

At the application-level encryption, the encrypted password from the connection gateway request will be utilized, and Gateway will create a Key & IV specific to each session login. These two new fields, key & IV, will be transmitted by the trading platform in the connection gateway response. The connection gateway response will be encrypted using the password (sent from connection gateway request) as the key & IV, with the remaining bytes being padded with '0' on the right for both key and IV.

Example: -

Password: - abc@12345 (Received in Connection Gateway Request)

Correct approach: -
IV: - abc@12345000
Key: - abc@12345000000000000000000000000

Incorrect approach: -
IV: - 000abc@12345
Key: - 000000000000000000000000abc@12345

Note: The Key and IV generated in the connection gateway response are character array of 32 and 12 bytes respectively, where each byte is in the range of 0-255.

Step 3: Session Logon Request / User Login Request / Other Order requests

For subsequent requests after receiving connection gateway response, user must encrypt the request (Body fields) using the AES 256 GCM encryption mode using Key and IV shared in connection gateway response.

Step 4: Session Logon Response / User Login Response / Other Order response

Gateway will decrypt the request and send an encrypted response. Users are required to utilize the defined fields (Key & IV received in connection gateway response) to decrypt the responses.

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Message	Fields Encrypted	Mode	Key Size	IV Size	Key and IV
ConnectionGatewayRequest (10020)	Password	PKCS#1			Encrypted using PKCS#1 256 Bytes Gateway Public Key
ConnectionGatewayResponse (10021)	Entire Msg body Encrypted except for headers (which is of 8 bytes)	AES_GCM_256 bytes encryption without authenticator	32	12	Use Password as Key and IV Appended with '0's for rest of the bytes
All Request messages after Connection Gateway	Entire Msg body Encrypted except for headers (which is of 24 bytes)	AES_GCM_256 bytes encryption without authenticator	32	12	Use key and IV which is shared in Connection Gateway Response(10021)
All Response messages after ConnectionGateway	Entire Msg body Encrypted except for headers (which is of 8 bytes)	AES_GCM_256 bytes encryption without authenticator	32	12	Use key and IV which is shared in Connection Gateway Response(10021)

Note: OpenSSL version to be used 1.1.1 and above for encryption/decryption.

4.24.3.1 Sequential Encryption/Decryption

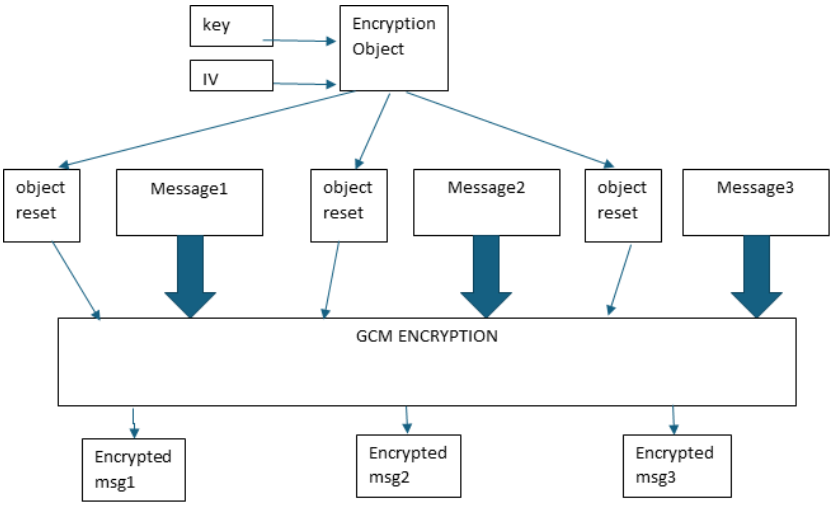
To avoid encryption object reset before sending every request, exchange have implemented sequential encryption/decryption methodology.
In Sequential encryption/decryption user should always follow same sequence for decryption in which sequence they are receiving messages at TCP level.

For Example:
If messages encrypted in following sequence message1 message2 message3
Members needs to decrypt in same sequence i.e. message1 message2 message3
If member decrypt in wrong sequence i.e. (message2 message3 message1) then user will receive wrong data.

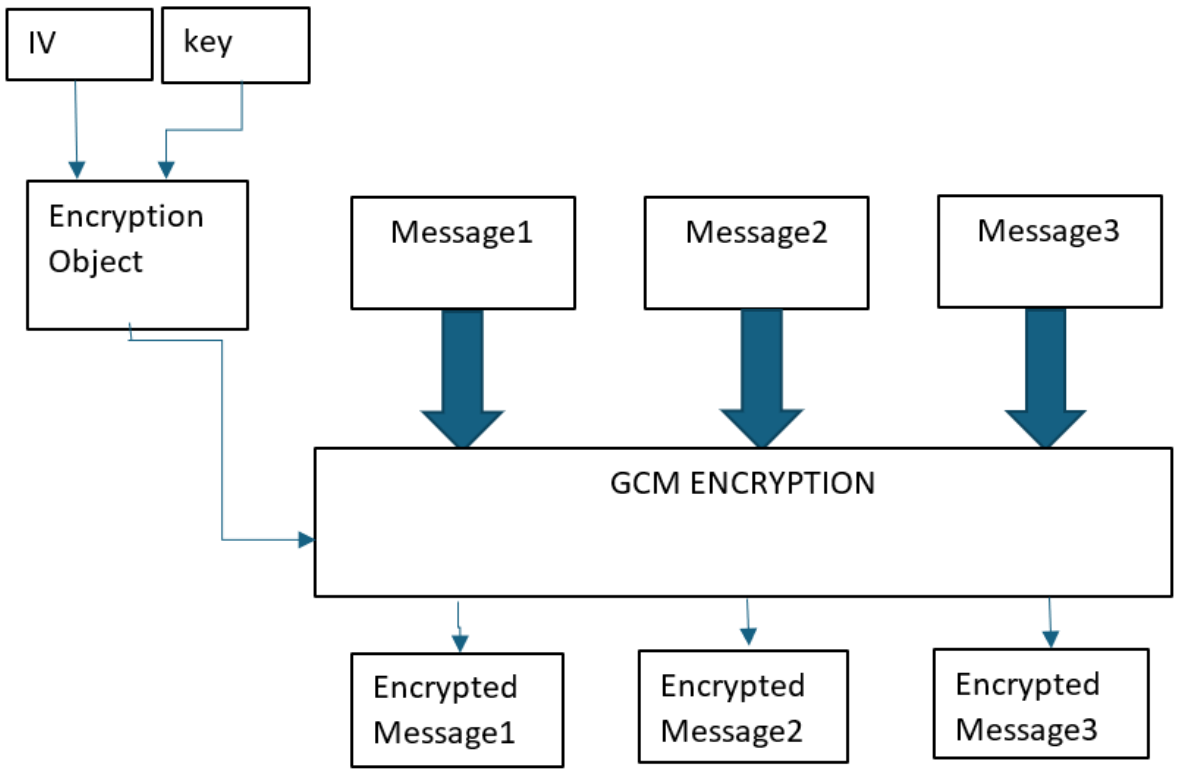
Note: user should not encrypt/decrypt heartbeat messages otherwise sequence will mismatch and there will be inconsistent behaviour.

For the proper illustration, member should follow below flow chart for existing version of non-sequential flow and upcoming release version of sequential flow.

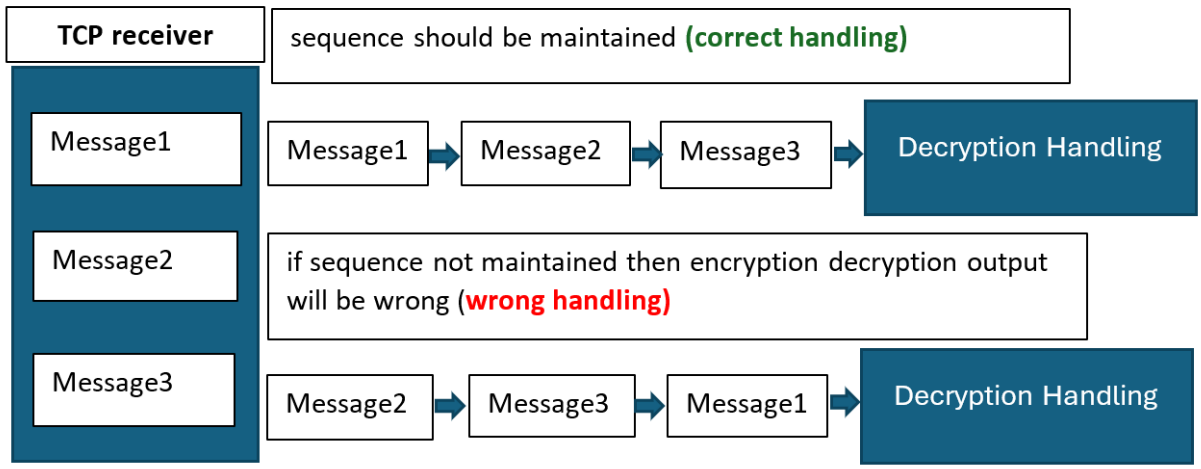
Non sequential encryption/decryption flow (existing production version)



Sequential encryption/decryption flow (no need to reset encryption object for each request)



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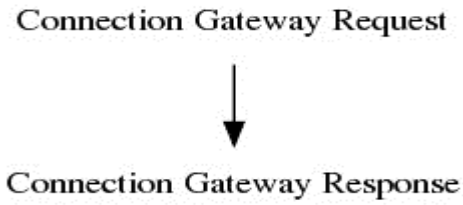


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5. Message Formats

5.1 Session Layer

5.1.1 Connection Gateway Request-10020



This message is used to retrieve the assigned gateway from the connection gateway.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderIn>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10020 (Logon, MsgType = A)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used
39020	Pad2	U	2	14	Fixed String	not used
<RequestHeader>						
34	MsgSeqNum	Y	4	16	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
50	SenderSubID	U	4	20	unsigned int	User ID / Session ID
<MessageBody>						
20055	PartyIDSessionID	Y	4	24	unsigned int	Session ID. / Logon ID
1408	DefaultCstmApplVerID	Y	30	28	Fixed String (0-terminable)	Indicates the MCX ETI interface version the ETI gateway software uses.Must be set as 2.3 Valid characters: \x20, \x22-\x7B, \x7D, \x7E Valid characters: \x01-\x7E
39020	Pad2	N	2	58	Fixed String	Not used
701	EncryptedDataMessageSize	Y	4	60	unsigned int	Specifies the length of the encrypted message
30744	Filler7	N	32	64	Fixed String (0-terminable)	
554	Password	Y	344	96	Fixed String (0-terminable)	Password. Refer Password policy, Password should be encrypted with RSA and provided.

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5.1.2 Connection Gateway Response-10021

This message confirms the Connection Gateway request.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10021 (Logon, MsgType = B)
39020	Pad2	U	2	6	Fixed String	not used
<ResponseHeader>						
5979	RequestTime	Y	8	8	UTCTimestamp	Time when request was considered for processing
52	SendingTime	Y	8	16	UTCTimestamp	Gateway response out timestamp.
34	MsgSeqNum	Y	4	24	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
39040	Pad4	N	4	28	Fixed String	Not Used.
<MessageBody>						
28644	GatewayID	Y	4	32	unsigned int	IP address of the Primary Application Gateway where the member application can establish an active MCX ETI session. Note: Binary values are presented in little endian byte order.
28645	GatewaySubID	Y	4	36	unsigned int	Port number to be used for the assigned Primary Application Gateway. Note: Binary values are presented in little endian byte order.
28725	SecondaryGatewayID	Y	4	40	unsigned int	IP address of the Secondary Application Gateway where the member application can establish an active MCX ETI session.Note: Binary values are presented in little endian byte order.
28726	SecondaryGateway-SubID	Y	4	44	unsigned int	Port number to be used for the assigned Secondary Application Gateway. Note: Binary values are presented in little endian byte order.

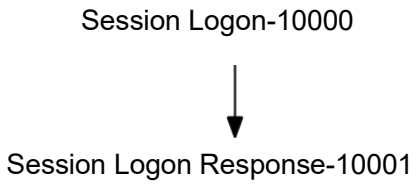
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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
28730	SessionMode	Y	1	48	unsigned int	Session type. Value: 2 – LF
339	TradSesMode	Y	1	49	unsigned int	Trading session mode. Value: 2 – Simulation/Test; 3 – Production
39060	Pad6	N	6	50	Fixed String	
307574	Key	Y	33	56	Fixed String (0-terminable)	Cryptographic key for both the encryption and decryption of all messages between member application and allocated Gateway Server.
307575	IVVector	Y	13	89	Fixed String (0-terminable)	Cryptographic IV (Initialization Vector) for both the encryption and decryption of all messages between member application and allocated Gateway Server.
39020	Pad2	N	2	102	Fixed String	Not Used.

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5.1.3 Session Logon-10000

This message must be the first message sent by the participant to the assigned gateway authenticating the MCX ETI session.



Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderIn>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10000 (Logon, MsgType = A)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used
39020	Pad2	U	2	14	Fixed String	not used
<RequestHeader>						
34	MsgSeqNum	Y	4	16	unsigned int	Must be set to 1.
50	SenderSubID	Y	4	20	unsigned int	User ID.
<MessageBody>						
108	HeartBtInt	N	4	24	unsigned int	heartbeat interval 0 = gateway will not take any action for skipped heartbeats (only allowed for non-production environments) not set: gateway will define interval
20055	PartyIDSessionID	Y	4	28	unsigned int	Session ID
701	EncryptedData-MessageSize	N	4	32	unsigned int	Size of Encrypted Message
1408	DefaultCstmApplVer-ID	Y	30	36	Fixed String (0-terminable)	Indicates the ETI interface version the participant application uses.The interface version can be found in XML and C-Header files. Valid characters: \x01-\x7E
30744	Filler7	N	32	66	Fixed String (0-terminable)	

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>25012</td><td>ApplUsageOrders</td><td>Y</td><td>1</td><td>98</td><td>char</td><td>Participant application: type of order processing.<table><tr><td>Value</td><td>Description</td></tr><tr><td>A</td><td>Automated</td></tr><tr><td>M</td><td>Manual</td></tr><tr><td>B</td><td>Both (Automated and Manual)</td></tr><tr><td>N</td><td>None</td></tr></table></td></tr>
<tr><td>25013</td><td>ApplUsageQuotes</td><td>Y</td><td>1</td><td>99</td><td>char</td><td>Participant application: type of quote processing.<table><tr><td>Value</td><td>Description</td></tr><tr><td>A</td><td>Automated</td></tr><tr><td>M</td><td>Manual</td></tr><tr><td>B</td><td>Both (Automated and Manual)</td></tr><tr><td>N</td><td>None</td></tr></table></td></tr>
<tr><td>25014</td><td>OrderRoutingIndicator</td><td>Y</td><td>1</td><td>100</td><td>char</td><td>Indicates if the participant application is an order routing system.<table><tr><td>Value</td><td>Description</td></tr><tr><td>Y</td><td>Yes</td></tr><tr><td>N</td><td>No</td></tr></table></td></tr>
<tr><td>1600</td><td>FIXEngineName</td><td>N</td><td>30</td><td>101</td><td>Fixed String (0-terminable)</td><td>Provides the name of the infrastructure component being used for session level communication.Normally this would be the FIX Engine or FIX Gateway product name.
Valid characters: \x20, \x22-\x7B, \x7D, \x7E</td></tr>
<tr><td>1601</td><td>FIXEngineVersion</td><td>N</td><td>30</td><td>131</td><td>Fixed String (0-terminable)</td><td>Provides the version of the FIX infrastructure component.
Valid characters: \x20, \x22-\x7B, \x7D, \x7E</td></tr>
<tr><td>1602</td><td>FIXEngineVendor</td><td>N</td><td>30</td><td>161</td><td>Fixed String (0-terminable)</td><td>Provides the name of the vendor providing the FIX infrastructure component.
Valid characters: \x20, \x22-\x7B, \x7D, \x7E</td></tr>
</table>

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
1603	ApplicationSystem-Name	Y	30	191	Fixed String (0-terminable)	Provides the name of the application system being used to generate MCX ETI application messages.This normally be a trading system, OMS, or EMS. Valid characters: \x20, \x22-\x7B, \x7D, \x7E
1604	ApplicationSystem-Version	Y	30	221	Fixed String (0-terminable)	Provides the version of the application system being used to initiate ETI application messages. Valid characters: \x20, \x22-\x7B, \x7D, \x7E
1605	ApplicationSystem-Vendor	Y	30	251	Fixed String (0-terminable)	Provides the vendor of the application system. Valid characters: \x20, \x22-\x7B, \x7D, \x7E
554	Password	Y	344	281	Fixed String (0-terminable)	Password. Should be encrypted with RSA and provided.
39070	Pad7	N	7	625	Fixed String	Not used.

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5.1.4 Session Logon Response-10001

This message confirms the Session Logon request.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10001 (Logon, MsgType = A)
39020	Pad2	U	2	6	Fixed String	not used
<ResponseHeader>						
5979	RequestTime	Y	8	8	UTCTimestamp	Time when request was considered for processing
52	SendingTime	Y	8	16	UTCTimestamp	Gateway response out timestamp.
34	MsgSeqNum	Y	4	24	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
39040	Pad4	U	4	28	Fixed String	not used
<MessageBody>						
1614	ThrottleTimeInterval	Y	8	32	signed int	Throttle time interval in number of milliseconds; applicable for transaction limit.
820	LastLoginTime	N	8	40	UTCTimestamp	The time when last successful login was performed.
703	LastLoginIP	N	4	48	unsigned int	The IP address of the machine from where last successful login was made.
1613	ThrottleNoMsgs	Y	4	52	unsigned int	Transaction limit per ThrottleTimeInterval (1614). If set to 0, throttling will be switched off.
25002	ThrottleDisconnectLimit	Y	4	56	unsigned int	Disconnect limit: maximum number of sequential message rejects due to throttle violation allowed by the MCX ETI.
108	HeartBtInt	Y	4	60	unsigned int	Actual heartbeat interval, gateway overrides out of range value or sets to default if logon omits the field
25004	SessionInstanceID	Y	4	64	unsigned int	Unique ID for the session instance assigned by the MCX system during session logon; to be communicated to helpdesk for troubleshooting.

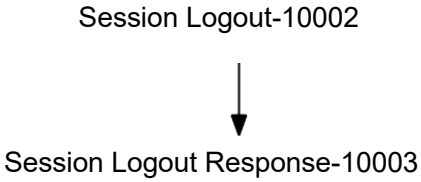
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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
339	TradSesMode	Y	1	68	unsigned int	Environment Type Value: 2 = Simulation/Test; 3 = Production
704	NoOfPartition	N	1	69	unsigned int	Total number of Partitions in the segment.
705	DaysLeftForPassword-Expiry	N	1	70	unsigned int	Number of days remaining for the expiry of password. The field will be populated 3 days prior to the expiry else it will contain "no value"data.
706	GraceLoginsLeft	N	1	71	unsigned int	Number of successful logins allowed with expired password. The field will have value set , once the password is expired else it would contain no value data. The value 0 indicates no new login with expired password will be allowed.
1408	DefaultCstmApplVer-ID	Y	30	72	Fixed String (0-terminable)	Indicates the MCX ETI interface version the ETI gateway software uses.Must be set as 2.3 Valid characters: \x20, \x22-\x7B, \x7D, \x7E Valid characters: \x01-\x7E
39020	Pad2	U	2	102	Fixed String	not used

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5.1.5 Session Logout-10002

Session Logout request to terminate a MCX ETI session.



Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderIn>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10002 (Logout, MsgType = 5)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used
39020	Pad2	U	2	14	Fixed String	not used
<RequestHeader>						
34	MsgSeqNum	Y	4	16	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
50	SenderSubID	U	4	20	unsigned int	Should be populated with session ID.

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5.1.6 Session Logout Response-10003

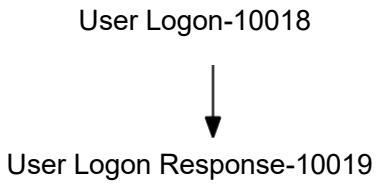
This message confirms the Session Logout request.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10003 (Logout, MsgType = 5)
39020	Pad2	U	2	6	Fixed String	not used
<ResponseHeader>						
5979	RequestTime	Y	8	8	UTCTimestamp	Time when request was considered for processing
52	SendingTime	Y	8	16	UTCTimestamp	Gateway response out timestamp.
34	MsgSeqNum	Y	4	24	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
39040	Pad4	N	4	28	Fixed String	Not Used.

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5.1.7 User Logon-10018

Each user needs to logon to MCX via the User Logon message.



Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderIn>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a ETI message layout. Value: 10018 (UserRequest, MsgType = BE)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used
39020	Pad2	U	2	14	Fixed String	not used
<RequestHeader>						
34	MsgSeqNum	Y	4	16	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
50	SenderSubID	U	4	20	unsigned int	not used
<MessageBody>						
553	Username	Y	4	24	unsigned int	The trader ID
701	EncryptedData-MessageSize	N	4	28	unsigned int	Size of Encrypted Message
30744	Filler7	N	32	32	Fixed String (0-terminable)	Valid characters: \x01-\x7E
554	Password	Y	344	64	Fixed String (0-terminable)	Password. Password should be encrypted with RSA and provided.

5.1.8 User Logon Response-10019

The User Logon Response message is used to confirm a user logon.

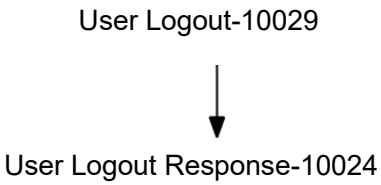
Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI mes-

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						sage layout. Value: 10019 (User-Response, MsgType = BF)
39020	Pad2	U	2	6	Fixed String	not used
<ResponseHeader>						
5979	RequestTime	Y	8	8	UTCTimestamp	Time when request was considered for processing
52	SendingTime	Y	8	16	UTCTimestamp	Gateway response out timestamp.
34	MsgSeqNum	Y	4	24	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
39040	Pad4	U	4	28	Fixed String	not used
<MessageBody>						
820	LastLoginTime	N	8	32	UTCTimestamp	The time when last successful login was performed.
705	DaysLeftForPassword-Expiry	N	1	40	unsigned int	Number of days remaining for the expiry of password. The field will be populated 3 days prior to the expiry else it will contain "no value"data.
706	GraceLoginsLeft	N	1	41	unsigned int	Number of successful logins allowed with expired password. The field will have value set , once the password is expired else it would contain no value data. The value 0 indicates no new login with expired password will be allowed.
39060	Pad6	N	6	42	Fixed String	Not Used.

5.1.9 User Logout-10029

Each user may logout from MCX via the User Logout message.



Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderIn>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10029 (User-Request, MsgType = BE)

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25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used
39020	Pad2	U	2	14	Fixed String	not used
<RequestHeader>						
34	MsgSeqNum	Y	4	16	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
50	SenderSubID	U	4	20	unsigned int	not used
<MessageBody>						
553	Username	Y	4	24	unsigned int	The trader ID
39040	Pad4	N	4	28	Fixed String	Not Used.

5.1.10 User Logout Response-10024

The User Logout Response message is used to confirm a user logout.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10024 (UserResponse, MsgType = BF)
39020	Pad2	U	2	6	Fixed String	not used
<ResponseHeader>						
5979	RequestTime	Y	8	8	UTCTimestamp	Time when request was considered for processing
52	SendingTime	Y	8	16	UTCTimestamp	Gateway response out timestamp.
34	MsgSeqNum	Y	4	24	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
39040	Pad4	N	4	28	Fixed String	Not Used.

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5.1.11 Throttle Update Notification-10028

This message informs about throttle parameters that have been updated intraday.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10028 (UserNotification, MsgType = CB)
39020	Pad2	U	2	6	Fixed String	not used
<NotifHeader>						
52	SendingTime	Y	8	8	UTCTimestamp	Outgoing timestamp; filled always by the gateway
<MessageBody>						
1614	ThrottleTimeInterval	Y	8	16	signed int	Throttle time interval in number of milliseconds; applicable for transaction limit.
1613	ThrottleNoMsgs	Y	4	24	unsigned int	Transaction limit per ThrottleTimeInterval (1614). If set to 0, throttling will be switched off.
25002	ThrottleDisconnectLimit	Y	4	28	unsigned int	Disconnect limit: maximum number of sequential message rejects due to throttle violation allowed by the MCX ETI.

5.1.12 Heartbeat-10011

The Heartbeat message is used by the MCX ETI gateway to monitor the status of the communication link to the ETI client during periods of inactivity.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderIn>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10011 (Heartbeat, MsgType = 0)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used
39020	Pad2	U	2	14	Fixed String	not used

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5.1.13 Heartbeat Notification-10023

The Heartbeat notification may be used by the ETI client to monitor the status of the communication link to the MCX ETI gateway during periods of inactivity.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10023 (Heartbeat, MsgType = 0)
39020	Pad2	U	2	6	Fixed String	not used
<NotifHeader>						
52	SendingTime	Y	8	8	UTCTimestamp	Gateway response out timestamp.

5.1.14 Session password change-10997

This message is for Session Password Change

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderIn>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a ETI message layout. Value: 10997 (SessionPasswordChange, MsgType = U84)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used
39020	Pad2	U	2	14	Fixed String	not used
<RequestHeader>						
34	MsgSeqNum	Y	4	16	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
50	SenderSubID	Y	4	20	unsigned int	User ID.
<MessageBody>						
20055	PartyIDSessionID	Y	4	24	unsigned int	Session ID.
710	Filler 2	N	4	28	unsigned int	Not used.
554	Password	Y	344	32	Fixed String (0-terminable)	Password. Should be encrypted with RSA and provided.
735	NewPassword	Y	344	376	Fixed String (0-terminable)	Should be encrypted with RSA and provided.

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5.1.15 Session password change Response-10995

This Message confirms session password change.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10995 (SessionPasswordChangeResponse, MsgType = U82)
39020	Pad2	U	2	6	Fixed String	not used
<ResponseHeader>						
5979	RequestTime	Y	8	8	UTCTimestamp	Time when request was considered for processing
52	SendingTime	Y	8	16	UTCTimestamp	Gateway response out timestamp.
34	MsgSeqNum	Y	4	24	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
39040	Pad4	N	4	28	Fixed String	Not Used.

5.1.16 User password change-10996

This message is used to change the password of the user.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderIn>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a ETI message layout. Value: 10996 (UserPasswordChangeRequest, MsgType = U83)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used
39020	Pad2	U	2	14	Fixed String	not used
<RequestHeader>						
34	MsgSeqNum	Y	4	16	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
50	SenderSubID	Y	4	20	unsigned int	User ID.
<MessageBody>						
553	Username	Y	4	24	unsigned int	User ID.

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701	Filler2	N	4	28	unsigned int	Not used.
554	Password	Y	344	32	Fixed String (0-terminable)	Password. Should be encrypted with RSA and provided.
735	NewPassword	Y	344	376	Fixed String (0-terminable)	Password. Should be encrypted with RSA and provided.

5.1.17 User Password Change Response - 10990

This message confirms the User Password Change request.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10990 (UserPasswordChangeResponse, MsgType = U85)
39020	Pad2	U	2	6	Fixed String	not used
<ResponseHeader>						
5979	RequestTime	Y	8	8	UTCTimestamp	Time when request was considered for processing
52	SendingTime	Y	8	16	UTCTimestamp	Gateway response out timestamp.
34	MsgSeqNum	Y	4	24	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
39040	Pad4	N	4	28	Fixed String	Not Used.

5.1.18 Session Logout Notification-10012

The Session Logout Notification message is used to inform about an unsolicited session logout triggered by the operator of the MCX system or by the MCX system itself.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10012 (Logout, MsgType = 5)
39020	Pad2	U	2	6	Fixed String	not used
<NotifHeader>						
52	SendingTime	Y	8	8	UTCTimestamp	Gateway response out timestamp.
<MessageBody>						
30354	VarTextLen	Y	2	16	Counter	Number of used bytes for field VarText

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						(30355).
39060	Pad6	N	6	18	Fixed String	Not Used.
30355	VarText	Y	2000	24	Variable String	News text. Actual violation/Alert text Valid characters: \x09, \x0A, \x0D, \x20-\x7B, \x7D, \x7E

5.1.19 User Logout Notification-10043

The User Logout Notification message is used to confirm the forced logout of a user from the session that receives the message

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a ETI message layout. Value: 10043 (Logout, MsgType = 5)
39020	Pad2	U	2	6	Fixed String	not used
<ResponseHeader>						
5979	RequestTime	Y	8	8	UTCTimestamp	Gateway request in timestamp.
52	SendingTime	Y	8	16	UTCTimestamp	Outgoing timestamp; filled always by the gateway
34	MsgSeqNum	Y	4	24	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
39040	Pad4	N	4	28	Fixed String	Not used.

5.2 Order Handling

5.2.1 New Order Single-10100

The New Order Single message is used by the participant to submit an order for single leg securities. This message is sent to the service "Order and Quote Management".

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderIn>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10100 (NewOrderSingle, MsgType = D)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used

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39020	Pad2	U	2	14	Fixed String	not used
	<RequestHeader>					
34	MsgSeqNum	Y	4	16	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
50	SenderSubID	Y	4	20	unsigned int	User ID.
	<MessageBody>					
44	Price	N	8	24	PriceType	Limit price. Required if OrdType (40) is Limit (2) or Stop Limit (4).
99	StopPx	N	8	32	PriceType	Stop price. Required if OrdType (40) is Stop (3) or used as the trigger price for an One-cancels-the-other order.
707	MarketProtection-Percentage	N	8	40	PriceType	Price per unit of quantity (e.g. per share) In Case of Limit Price, No Value is required to be send.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
708	TerminalInfo	Y	8	48	unsigned int	Total 15 Characters For 1st- 12 characters value(11111111111-33333333333), For 13th character value(0-3) 14th - 15th digit should be valid vendor code / in House CTCL code for member
11	ClOrdID	N	8	56	unsigned int	Client Order ID: Unique participant defined order request identifier; used for client order id chaining.
727	StrategyID	Y	8	64	unsigned int	Strategy Approved by the exchange should be used.Range being from 0 to 99999

Value	Description
11111111111	IBT
22222222222	DMA
33333333333	Wireless Technology
0	Order not generated through Program trading software
1	Order generated through Program trading software
2	Smart Order Rout-ing without Program trading software
3	Smart Order Routing with program trading software

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734	StrategyTriggerSeqNo	Y	8	72	unsigned int	Strategy Sequence numbers
709	Filler1	N	8	80	unsigned int	Not Used.
20655	TargetPartyIDSession-ID	Y	4	88	unsigned int	Session ID
711	Echo	Y	4	92	signed int	Vendors can use this as a reference in response from exchange
38	OrderQty	Y	8	96	Qty	Total Order Quantity.
732	DisclosedQty	N	8	104	Qty	The quantity to be made visible in the market data.DisclosedQty is set to 0 in case full qty needs to be disclosed.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
432	ExpireDate	N	4	112	LocalMktDate	Date of order expiry. Required if TimeInForce (59) = 6 then Expire-Date should be YYYYMMDD format, if TimeInForce(59)=0 then Expire-Date should be No value
1300	MarketSegmentID	Y	4	116	signed int	Product identifier.
30048	SimpleSecurityID	Y	4	120	unsigned int	Instrument identifier for simple instru-ments
712	RegulatoryID	N	4	124	unsigned int	Not Used
713	Filler4	N	2	128	unsigned int	Not Used.
20096	PartyIDTakeUp-TradingFirm	N	5	130	Fixed String	Not Used.
20013	PartyIDOrder-OriginationFirm	N	7	135	Fixed String	Not used.
20032	PartyIDBeneficiary	N	9	142	Fixed String	Not Used.
714	AccountType	Y	1	151	unsigned int	Value: 1 = Own; 3 = Client; 5 = Institution
28703	ApplSeqIndicator	Y	1	152	unsigned int	Value: 0 = No recovery required; 1 = Standard Order
54	Side	Y	1	153	unsigned int	Side of the order. Value: 1 = Buy; 2 = Sell
40	OrdType	Y	1	154	unsigned int	Order type. Value: Description

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						2 Limit 3 Stop Market 4 Stop Limit 5 Market To Limit 6 Auction Buy IN 7 Auction_Sell_Out

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
28710	PriceValidityCheck-Type	Y	1	139	unsigned int	Not Used. Value: 0 – None
59	TimeInForce	Y	1	140	unsigned int	Execution and trading restriction parameters supported by MCX. Value: 0 – Day (DAY); 1 – Good Till Cancelled (GTC) - Standard Orders only; 3 – Immediate or Cancel (IOC); 6 – Good Till Date (GTD) - Standard Orders only; 7 – Session (EOS)
18	ExecInst	Y	1	141	unsigned int	Instructions for order handling on exchange trading floor. If more than one instruction is applicable to an order, this field can contain multiple instructions separated by space. Value: 1 – Persistent Order(FIX value-H); 2 – Non-Persistent Order(FIX value-Q)
715	SMPFOrderIdentifier	Y	1	142	unsigned int	Value: 0 – Passive; 1 – Active
716	Filler5	N	1	143	unsigned int	Not Used.

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
625	TradingSessionSubID	N	1	160	unsigned int	Used.Valid values are defined after the table.
1815	TradingCapacity	Y	1	161	unsigned int	Not used.Set it to 1 by default.
1	Account	Y	2	162	Fixed String (0-terminable)	Not used. Must be sent as A1 Valid characters: 1-9, \x41, \x47, \x49, \x4D, \x50, \x52
77	PositionEffect	Y	1	164	char	Must be set to C, Valid characters: \x01-\x7E
20075	PartyIDLocationID	N	2	165	Fixed String (0-terminable)	Not Used.
1031	CustOrderHandling-Inst	N	1	167	Fixed String	Not used Valid characters: \x20, \x22-\x7B, \x7D, \x7E Valid characters: \x20, \x22-\x7B, \x7D, \x7E
718	UserReferenceText	N	20	168	Fixed String (0-terminable)	Upto 15 Char allowed.This field is used to provide additional regulatory information(according to respective rules andregs, circulars and/or bilateral coordination between participantand Trading Surveillance Office). Valid characters: \x20, \x22-\x7B, \x7D, \x7E.

Valid Values for TradingSessionSubID are given below:

Value	Description
1	Start of day
2	Pre-Trading
3	Trading
4	Closing Auction
5	Post trading
6	End of day
7	Post end of day
8	Halt

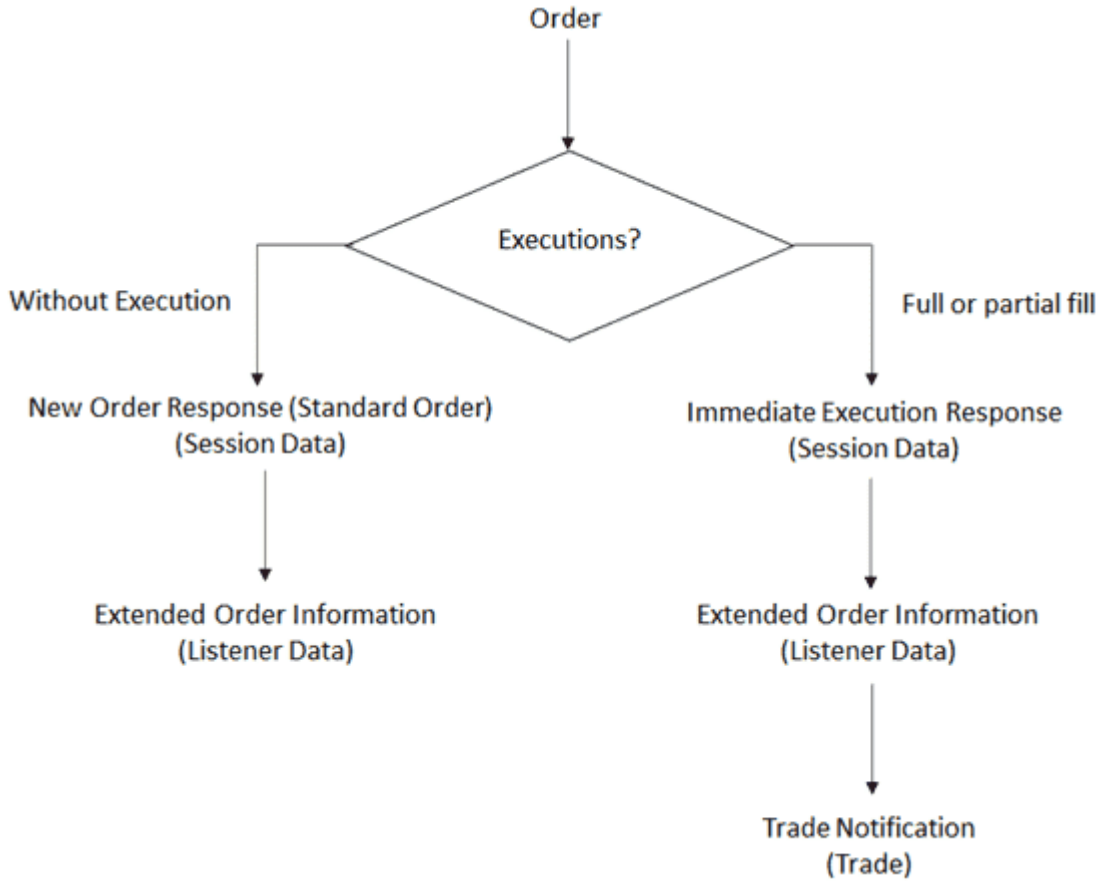
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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
25007	FreeText1	Y	12	188	Fixed String (0-terminable)	The Unique Client Code (UCC) of the person for whom the order is entered. Valid characters: \x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D
717	CPCode	N	12	200	Fixed String (0-terminable)	The Participant code. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D.
25009	FreeText3	N	12	212	Fixed String	Free-format text field for traderspecific or customer-related comments. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D

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5.2.2 New Order Single (short layout)-10125

This short order message layout is used by the participant to submit an order in a simple instrument. Selected order attributes are implicitly set. Using short layout only Limit orders, other than GTD orders can be placed. This message is sent to the service “Order and Quote Management”.
Order placed through short layout messages are implicitly non persistent.



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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
	<MessageHeaderIn>					
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10125 (NewOrderSingle, MsgType = D)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used
39020	Pad2	U	2	14	Fixed String	not used
	<RequestHeader>					
34	MsgSeqNum	Y	4	16	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
50	SenderSubID	Y	4	20	unsigned int	User ID.
	<MessageBody>					
44	Price	Y	8	24	PriceType	Limit price.

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>708</td><td>TerminalInfo</td><td>Y</td><td>8</td><td>32</td><td>unsigned int</td><td>Total 15 Characters
For 1st- 12 characters value(11111111111-33333333333),
For 13th character value(0-3)
14th - 15th digit should be valid vendor code / in House CTCL code for member
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>11111111111</td><td>IBT</td></tr>
<tr><td>22222222222</td><td>DMA</td></tr>
<tr><td>33333333333</td><td>Wireless Technology</td></tr>
<tr><td>0</td><td>Order not generated through Program trading software</td></tr>
<tr><td>1</td><td>Order generated through Program trading software</td></tr>
<tr><td>2</td><td>Smart Order Rout-ing without Program trading software</td></tr>
<tr><td>3</td><td>Smart Order Routing with program trading software</td></tr>
</table></td></tr>
<tr><td>11</td><td>ClOrdID</td><td>N</td><td>8</td><td>40</td><td>unsigned int</td><td>Client Order ID: Unique participant defined order request identifier; used for client order id chaining.</td></tr>
<tr><td>38</td><td>OrderQty</td><td>Y</td><td>8</td><td>48</td><td>Qty</td><td>Total Order Quantity.</td></tr>
<tr><td>732</td><td>DisclosedQty</td><td>N</td><td>8</td><td>56</td><td>Qty</td><td>The quantity to be made visible in the market data.DisclosedQty is set to 0 in case full qty needs to be disclosed.</td></tr>
<tr><td>727</td><td>StrategyID</td><td>Y</td><td>8</td><td>64</td><td>unsigned int</td><td>Strategy Approved by the exchange should be used.Range being from 0 to 99999</td></tr>
<tr><td>728</td><td>StrategySequence-Number</td><td>Y</td><td>8</td><td>72</td><td>unsigned int</td><td>Strategy Sequence numbers</td></tr>
<tr><td>30048</td><td>SimpleSecurityID</td><td>Y</td><td>4</td><td>80</td><td>unsigned int</td><td>Instrument identifier for simple instru-ments.</td></tr>
<tr><td>710</td><td>Filler2</td><td>N</td><td>4</td><td>84</td><td>unsigned int</td><td>Not Used.</td></tr>
<tr><td>713</td><td>Filler4</td><td>N</td><td>2</td><td>88</td><td>unsigned int</td><td>Not Used.</td></tr>
</table>

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>714</td><td>AccountType</td><td>Y</td><td>1</td><td>90</td><td>unsigned int</td><td><table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Own</td></tr><tr><td>3</td><td>Client</td></tr><tr><td>5</td><td>Institution</td></tr></table></td></tr>
<tr><td>54</td><td>Side</td><td>Y</td><td>1</td><td>91</td><td>unsigned int</td><td>Side of the order.<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Buy</td></tr><tr><td>2</td><td>Sell</td></tr></table></td></tr>
<tr><td>28710</td><td>PriceValidityCheck-Type</td><td>Y</td><td>1</td><td>92</td><td>unsigned int</td><td>Not Used.<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>None</td></tr></table></td></tr>
<tr><td>59</td><td>TimeInForce</td><td>Y</td><td>1</td><td>93</td><td>unsigned int</td><td>Execution and trading restriction parameters supported by MCX.<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>Day (DAY)</td></tr><tr><td>3</td><td>Immediate or Cancel (IOC)</td></tr></table></td></tr>
<tr><td>715</td><td>SMPFOrderIdentifier</td><td>Y</td><td>1</td><td>94</td><td>unsigned int</td><td>Indicates the preference of order to be cancelled if self-trade is encountered.Preference not applicable in a modification requests.<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>Passive</td></tr><tr><td>1</td><td>Active</td></tr></table></td></tr>
</table>

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<table>
<tr><td>18</td><td>ExecInst</td><td>Y</td><td>1</td><td>95</td><td>unsigned int</td><td>Instructions for order handling on exchange trading floor. If more than one instruction is applicable to an order, this field can contain multiple instructions separated by space.<table><tr><th>Value</th><th>Description</th></tr><tr><td>2</td><td>Non-Persistent Order(FIX value-Q)</td></tr></table></td></tr>
<tr><td>25007</td><td>FreeText1</td><td>Y</td><td>12</td><td>96</td><td>Fixed String (0-terminable)</td><td>The Unique Client Code (UCC) of the person
for whom the order is entered. Valid characters: \x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D</td></tr>
<tr><td>717</td><td>CPCode</td><td>N</td><td>12</td><td>108</td><td>Fixed String (0-terminable)</td><td>The Participant code.
Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D.</td></tr>
</table>

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5.2.3 New Order Response (Standard Order)-10101

This message confirms a New Order request for a Standard Order.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10101 (ExecutionReport, MsgType = 8)
39020	Pad2	U	2	6	Fixed String	not used
<ResponseHeaderME>						
5979	RequestTime	Y	8	8	UTCTimestamp	Time when request was considered for processing
745	Reserve0	U	8	16	UTCTimestamp	not used
21002	Reserve1	Y	8	24	UTCTimestamp	Not Used.
21003	Reserve2	Y	8	32	UTCTimestamp	Not Used.
7765	Reserve3	Y	8	40	UTCTimestamp	Not Used.
52	SendingTime	Y	8	48	UTCTimestamp	Gateway response out timestamp.
34	MsgSeqNum	Y	4	56	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
5948	PartitionID	Y	2	60	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.
1180	ApplID	Y	1	62	unsigned int	Identifier for an ETI data stream. Value: 4 – Description: Session Data
28704	ApplMsgID	N	16	63	data	Application message identifier assigned to an order or quote event.
893	LastFragment	Y	1	79	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 1 – Description: Last Message
<Message Body>						
37	OrderID	Y	8	80	unsigned int	Exchange Order ID generated by the MCX System; it remains constant over the lifetime of an order.

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
11	ClOrdID	N	8	88	unsigned int	Client Order ID: Unique participant defined order request identifier; used for client order id chaining.
719	PriceMkToLimitPx	N	8	96	PriceType	The price at which the market order got converted into regular limit order.Applicable for OrdType (40) = 5.
720	Reserved1	N	8	104	unsigned int	Reserved Field
721	Reserved2	N	8	112	unsigned int	Reserved Field
17	ExecID	Y	8	120	UTCTimestamp	Transaction timestamp.
21009	TrdRegTSEntryTime	Y	8	128	UTCTimestamp	The entry timestamp is the time of the creation of the order.
722	Reserve14	Y	8	136	UTCTimestamp	Not Used.
723	LstUpdtTime	Y	8	144	UTCTimestamp	last updated time.
709	Filler1	N	8	152	unsigned int	the creation of the order.
30048	SimpleSecurityID	Y	4	160	unsigned int	Instrument Identifier.
710	Filler2	N	4	164	unsigned int	Not Used.
713	Filler4	N	2	168	unsigned int	Not Used.
39	OrdStatus	Y	1	170	char	Conveys the current status of an order. Value: Description 0: New 1: Partially filled 2: Filled 4: Cancelled 7: RRM Suspended 8: SquareOff Suspended
150	ExecType	Y	1	171	char	The reason why this message was generated. Value: Description 0: New 4: Cancelled L: Triggered 5: Replaced
378	ExecRestatement-Reason	Y	2	172	unsigned int	Code to further qualify the field ExecType (150) of the Execution Report (8) message. Valid values are listed after this table.

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
1227	ProductComplex	Y	1	174	unsigned int	This field qualifies an instrument type on MCX. Value: Description 1: Simple instrument 5: Futures Spread
716	Filler5	N	1	175	unsigned int	Not Used.

Valid Values of ExecRestatementReason (datatype ExecRestatementReason)

Valid Value	Description
1	Order book restatement
101	Order add accepted
102	Order modify accepted
103	Order delete accepted
105	IOC Order Cancelled
108	Book Order executed
114	Order has been changed to IOC
135	Market Order triggered and executed
145	Start Of Day Processing
146	End Of Day Processing
155	Order Refreshed
172	Stop Order has been triggered
215	Risk Reduction Timer Expired
248	Active order deletion due to SMPF
250	Active order modification due to SMPF
252	Passive order deletion due to SMPF
254	Passive oder modification due to SMPF
261	Panic Cancel
302	RRMIN
303	SQUAREOFFIN
357	Base Price Update
358	Order Deleted As Price Moved Out Of DPL Range

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5.2.4 Replace Order Single-10106

This message is used to replace an existing order in a simple instrument. This message is sent to the service “Order and Quote Management”

Tag	Field Name	Req’d	Len	Ofs	Data Type	Description
<MessageHeaderIn>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a ETI message layout. Value: 10106 (OrderCancelReplaceRequest, MsgType = G)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used
39020	Pad2	U	2	14	Fixed String	not used
<RequestHeader>						
34	MsgSeqNum	Y	4	16	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
50	SenderSubID	Y	4	20	unsigned int	User ID.
<Message Body>						
37	OrderID	Y	8	24	unsigned int	Exchange Order ID generated by the T7 System; it remains constant over the lifetime of an order.
11	ClOrdID	N	8	32	unsigned int	Client Order ID: Unique participant defined order request identifier; used for client order id chaining. ClOrdID should be mention in NewOrderSingle and same value can be passed in ClOrdID as well as OrigClOrdID.
41	OrigClOrdID	N	8	40	unsigned int	ClOrdID (11) of the last successfully processed task (request) referring to the specific order.
44	Price	N	8	48	PriceType	Limit price. Required if OrdType (40) is Limit (2) or Stop Limit (4).
99	StopPx	N	8	56	PriceType	Stop price. Required if OrdType (40) is Stop (3) or used as the trigger price for an One-cancels-the-other order.
731	MaxPricePercentage	N	8	64	PriceType	Price per unit of quantity (e.g. per share) In Case of Limit Price, No Value is required to be send.

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>708</td><td>TerminalInfo</td><td>Y</td><td>8</td><td>72</td><td>unsigned int</td><td>Total 15 Characters
For 1st- 12 characters value(11111111111-33333333333),
For 13th character value(0-3)
14th - 15th digit should be valid vendor code / in House CTCL code for member
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>11111111111</td><td>IBT</td></tr>
<tr><td>22222222222</td><td>DMA</td></tr>
<tr><td>33333333333</td><td>Wireless Technology</td></tr>
<tr><td>0</td><td>Order not generated through Program trading software</td></tr>
<tr><td>1</td><td>Order generated through Program trading software</td></tr>
<tr><td>2</td><td>Smart Order Rout-ing without Program trading software</td></tr>
<tr><td>3</td><td>Smart Order Routing with program trading software</td></tr>
</table></td></tr>
<tr><td>723</td><td>LstUpdtTime</td><td>Y</td><td>8</td><td>80</td><td>UTCTimestamp</td><td>LstUpdtTime received in the order no-tification</td></tr>
<tr><td>709</td><td>Filler1</td><td>N</td><td>8</td><td>88</td><td>unsigned int</td><td>Not Used.</td></tr>
<tr><td>710</td><td>Filler2</td><td>N</td><td>4</td><td>96</td><td>unsigned int</td><td>Not Used.</td></tr>
<tr><td>711</td><td>Echo</td><td>Y</td><td>4</td><td>100</td><td>signed int</td><td>Vendors can use this as a reference in response from exchange</td></tr>
<tr><td>38</td><td>OrderQty</td><td>Y</td><td>8</td><td>104</td><td>Qty</td><td>Total Order Quantity.</td></tr>
<tr><td>732</td><td>DisclosedQty</td><td>N</td><td>8</td><td>112</td><td>Qty</td><td>The quantity to be made visible in the market data.DisclosedQty is set to 0 in case full qty needs to be disclosed.</td></tr>
<tr><td>727</td><td>StrategyID</td><td>Y</td><td>8</td><td>120</td><td>unsigned int</td><td>Strategy Approved by the exchange should be used.Range being from 0 to 99999</td></tr>
<tr><td>734</td><td>StrategyTriggerSeqNo</td><td>Y</td><td>8</td><td>128</td><td>unsigned int</td><td>Strategy Sequence numbers</td></tr>
<tr><td>432</td><td>ExpireDate</td><td>N</td><td>4</td><td>136</td><td>LocalMktDate</td><td>Not used.</td></tr>
<tr><td>1300</td><td>MarketSegmentID</td><td>Y</td><td>4</td><td>140</td><td>signed int</td><td>Product identifier.</td></tr>
<tr><td>30048</td><td>SimpleSecurityID</td><td>Y</td><td>4</td><td>144</td><td>unsigned int</td><td>Instrument identifier for simple instru-ments.</td></tr>
</table>

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
20655	TargetPartyIDSession-ID	N	4	148	unsigned int	Session ID.
712	RegulatoryID	N	4	152	unsigned int	For participants to uniquely identify trading startegies
713	Filler4	N	2	156	unsigned int	Not Used.
20096	PartyIDTakeUp-TradingFirm	N	5	158	Fixed String	Not Used.
20013	PartyIDOrder-OriginationFirm	N	7	163	Fixed String	Not used.
20032	PartyIDBeneficiary	N	9	170	Fixed String	Not Used.
714	AccountType	Y	1	179	unsigned int	Value: Description 1: Own 3: Client 5: Institution
28703	ApplSeqIndicator	Y	1	180	unsigned int	Value: Description 0: No recovery Required 1: Standard Order
54	Side	Y	1	181	unsigned int	Side of the order. Value: Description 1: Buy 2: Sell
40	OrdType	Y	1	182	unsigned int	Order type. Value: Description 2: Limit 3: Stop Market 4: Stop Limit 5: Market To Limit 6: Auction Buy IN 7: Auction_Sell_Out
28710	PriceValidityCheck-Type	Y	1	183	unsigned int	Not Used. Value: Description 0: None

Confidential

<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>59</td><td>TimeInForce</td><td>Y</td><td>1</td><td>184</td><td>unsigned int</td><td>Execution and trading restriction parameters supported by MCX.<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>Day (DAY)</td></tr><tr><td>1</td><td>Good Till Cancelled (GTC) - Standard Orders only</td></tr><tr><td>3</td><td>Immediate or Cancel (IOC)</td></tr><tr><td>6</td><td>Good Till Date (GTD) - Standard Orders only</td></tr><tr><td>7</td><td>Session (EOS)</td></tr></table></td></tr>
<tr><td>18</td><td>ExecInst</td><td>Y</td><td>1</td><td>185</td><td>unsigned int</td><td>Instructions for order handling on exchange trading floor. If more than one instruction is applicable to an order, this field can contain multiple instructions separated by space.<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Persistent Order(FIX value-H)</td></tr><tr><td>2</td><td>Non-Persistent Order(FIX value-Q)</td></tr></table></td></tr>
<tr><td>716</td><td>Filler5</td><td>N</td><td>1</td><td>186</td><td>unsigned int</td><td>Not Used.</td></tr>
<tr><td>625</td><td>TradingSessionSubID</td><td>N</td><td>1</td><td>187</td><td>unsigned int</td><td>Used.<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Start of Day</td></tr><tr><td>2</td><td>Pre-Trading</td></tr><tr><td>3</td><td>Trading</td></tr><tr><td>4</td><td>Closing or closing auction</td></tr><tr><td>5</td><td>Post-Trading</td></tr><tr><td>6</td><td>End of Day</td></tr><tr><td>7</td><td>Post End of Day</td></tr><tr><td>8</td><td>Halt</td></tr></table></td></tr>
<tr><td>1815</td><td>TradingCapacity</td><td>Y</td><td>1</td><td>188</td><td>unsigned int</td><td>Not Used.</td></tr>
<tr><td>750</td><td>Filler6</td><td>N</td><td>1</td><td>189</td><td>char</td><td></td></tr>
</table>

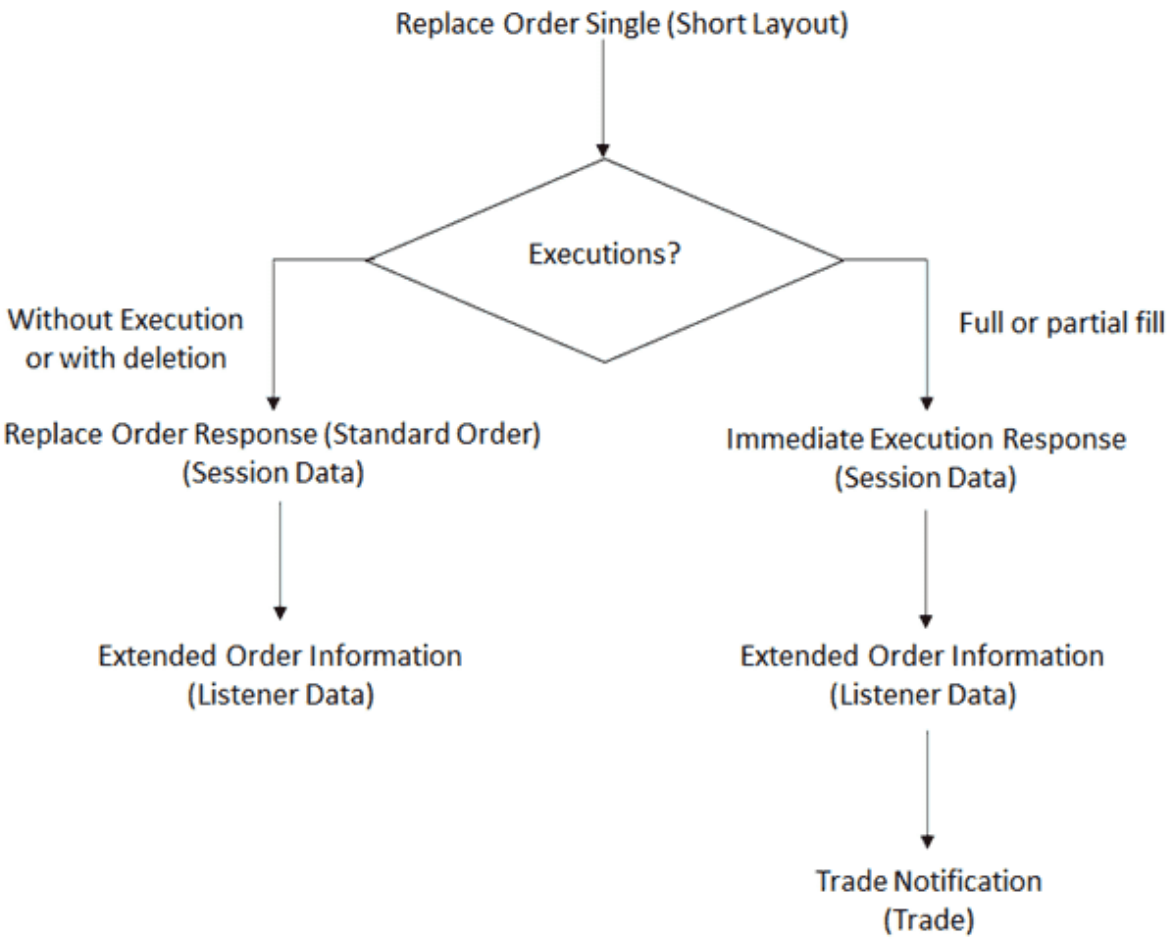
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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
1	Account	Y	2	190	Fixed String (0-terminable)	Not used. Must be sent as A1 Valid characters: 1-9, \x41, \x47, \x49, \x4D, \x50, \x52
77	PositionEffect	Y	1	192	char	must be set to C
20075	PartyIDLocationID	N	2	193	Fixed String (0-terminable)	Not Used.
1031	CustOrderHandling-Inst	N	1	195	Fixed String	not used. Valid characters: \x20, \x22-\x7B, \x7D, \x7E
718	UserReferenceText	N	20	196	Fixed String (0-terminable)	Upto 15 Char allowed.This field is used to provide additional regulatory information(according to respective rules andregs, circulars and/or bilateral coordination between participantand Trading Surveillance Office).Valid characters: \x20, \x22-\x7B, \x7D, \x7E. Valid characters: \x20, \x22-\x7B, \x7D, \x7E
25007	FreeText1	Y	12	216	Fixed String (0-terminable)	The Unique Client Code (UCC) of the person for whom the order is entered. Valid characters: \x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D
717	CPCode	N	12	228	Fixed String (0-terminable)	The Participant code. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D.
25009	FreeText3	N	12	240	Fixed String	Free-format text field for traderspecific or customer-related comments. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D
39040	Pad4	N	4	252	Fixed String	Not Used.

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5.2.5 Replace Order Single (short layout)-10126

This short order message layout is used by the participant to replace an order in a simple instrument. Selected order attributes are implicitly set. This message is sent to the service “Order and Quote Management”.
Order placed through short layout messages are implicitly non persistent.



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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
	<MessageHeaderIn>					
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10126 (OrderCancelReplaceRequest, MsgType = G)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used
39020	Pad2	U	2	14	Fixed String	not used
	<RequestHeader>					
34	MsgSeqNum	Y	4	16	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
50	SenderSubID	Y	4	20	unsigned int	User ID.
	<MessageBody>					
37	OrderID	Y	8	24	unsigned int	Exchange Order ID generated by the MCX System; it remains constant over the lifetime of an order.
11	ClOrdID	N	8	32	unsigned int	Client Order ID: Unique participant defined order request identifier; used for client order id chaining. ClOrdID should be mention in NewOrderSingle and same value can be passed in ClOrdID as well as OrigClOrdID.
41	OrigClOrdID	N	8	40	unsigned int	ClOrdID (11) of the last successfully processed task (request) referring to the specific order.
44	Price	Y	8	48	PriceType	Limit price. Required if OrdType (40) is Limit (2) or Stop Limit (4).

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>708</td><td>TerminalInfo</td><td>Y</td><td>8</td><td>56</td><td>unsigned int</td><td>Total 15 Characters
For 1st- 12 characters value(11111111111-33333333333),
For 13th character value(0-3)
14th - 15th digit should be valid vendor code / in House CTCL code for member
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>11111111111</td><td>IBT</td></tr>
<tr><td>22222222222</td><td>DMA</td></tr>
<tr><td>33333333333</td><td>Wireless Technology</td></tr>
<tr><td>0</td><td>Order not generated through Program trading software</td></tr>
<tr><td>1</td><td>Order generated through Program trading software</td></tr>
<tr><td>2</td><td>Smart Order Rout-ing without Program trading software</td></tr>
<tr><td>3</td><td>Smart Order Routing with program trading software</td></tr>
</table></td></tr>
<tr><td>723</td><td>LstUpdtTime</td><td>Y</td><td>8</td><td>64</td><td>UTCTimestamp</td><td>Send the value of ExecID (Tag 17) from New Order Response (Lean Order)-10102</td></tr>
<tr><td>38</td><td>OrderQty</td><td>Y</td><td>8</td><td>72</td><td>Qty</td><td>Total Order Quantity.</td></tr>
<tr><td>732</td><td>DisclosedQty</td><td>N</td><td>8</td><td>80</td><td>Qty</td><td>The quantity to be made visible in the market data.DisclosedQty is set to 0 in case full qty needs to be disclosed.</td></tr>
<tr><td>727</td><td>StrategyID</td><td>Y</td><td>8</td><td>88</td><td>unsigned int</td><td>Strategy Approved by the exchange should be used.Range being from 0 to 99999</td></tr>
<tr><td>728</td><td>StrategySequence-Number</td><td>Y</td><td>8</td><td>96</td><td>unsigned int</td><td>Strategy Sequence numbers</td></tr>
<tr><td>30048</td><td>SimpleSecurityID</td><td>Y</td><td>4</td><td>104</td><td>unsigned int</td><td>Instrument identifier for simple instru-ments.</td></tr>
<tr><td>710</td><td>Filler2</td><td>N</td><td>4</td><td>108</td><td>unsigned int</td><td>Not Used.</td></tr>
<tr><td>713</td><td>Filler4</td><td>N</td><td>2</td><td>112</td><td>unsigned int</td><td>Not Used.</td></tr>
</table>

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>714</td><td>AccountType</td><td>Y</td><td>1</td><td>114</td><td>unsigned int</td><td><table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Own</td></tr><tr><td>3</td><td>Client</td></tr><tr><td>5</td><td>Institution</td></tr></table></td></tr>
<tr><td>54</td><td>Side</td><td>Y</td><td>1</td><td>115</td><td>unsigned int</td><td>Side of the order.<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Buy</td></tr><tr><td>2</td><td>Sell</td></tr></table></td></tr>
<tr><td>28710</td><td>PriceValidityCheck-Type</td><td>Y</td><td>1</td><td>116</td><td>unsigned int</td><td>Not Used.<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>None</td></tr></table></td></tr>
<tr><td>59</td><td>TimeInForce</td><td>Y</td><td>1</td><td>117</td><td>unsigned int</td><td>Execution and trading restriction parameters supported by MCX.<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>Day (DAY)</td></tr><tr><td>1</td><td>Good Till Cancelled (GTC) - Standard Orders only</td></tr><tr><td>3</td><td>Immediate or Cancel (IOC)</td></tr><tr><td>7</td><td>End of Session (EOS)</td></tr></table></td></tr>
</table>

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
18	ExecInst	Y	1	118	unsigned int	Instructions for order handling on exchange trading floor. If more than one instruction is applicable to an order, this field can contain multiple instructions separated by space Value: 2 — Description: Non-Persistent Order(FIX value-Q)
25007	FreeText1	Y	12	119	Fixed String (0-terminable)	The Unique Client Code (UCC) of the person for whom the order is entered. Valid characters: \x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D
717	CPCode	N	12	131	Fixed String (0-terminable)	The Participant code. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D.
39000	Pad1	N	1	143	Fixed String	Not Used.

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5.2.6 Replace Order Response (Standard Order)-10107

This message confirms a Replace Order request for a Standard Order.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10107 (ExecutionReport, MsgType = 8)
39020	Pad2	U	2	6	Fixed String	not used
<ResponseHeaderME>						
5979	RequestTime	Y	8	8	UTCTimestamp	Time when request was considered for processing
745	Reserve0	U	8	16	UTCTimestamp	not used
21002	Reserve1	Y	8	24	UTCTimestamp	Not Used.
21003	Reserve2	Y	8	32	UTCTimestamp	Not Used.
7765	Reserve3	Y	8	40	UTCTimestamp	Not Used.
52	SendingTime	Y	8	48	UTCTimestamp	Gateway response out timestamp.
34	MsgSeqNum	Y	4	56	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
5948	PartitionID	Y	2	60	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.
1180	ApplID	Y	1	62	unsigned int	Identifier for an ETI data stream. Value: 4 – Description: Session Data
28704	ApplMsgID	N	16	63	data	Not set if the submitting session is not the owner of the replaced order.
893	LastFragment	Y	1	79	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 1 – Description: Last Message
<Message Body>						
37	OrderID	Y	8	80	unsigned int	Exchange Order ID generated by the MCX System; it remains constant over the lifetime of an order.

Confidential

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
11	ClOrdID	N	8	88	unsigned int	Client Order ID: Unique participant defined order request identifier; used for client order id chaining.
41	OrigClOrdID	N	8	96	unsigned int	ClOrdID (11) of the last successfully processed task (request) referring to the specific order.
48	SecurityID	Y	8	104	signed int	Instrument identifier.
17	ExecID	Y	8	112	UTCTimestamp	Transaction timestamp.
719	PriceMkToLimitPx	N	8	120	PriceType	The price at which the market order got converted into regular limit order.Applicable for OrdType (40) = 5.
724	Filler10	N	8	128	signed int	
725	Filler11	N	8	136	signed int	
722	Reserve14	Y	8	144	UTCTimestamp	Not Used.
723	LstUpdtTime	Y	8	152	UTCTimestamp	LstUpdtTime for that order
709	Filler1	N	8	160	unsigned int	Not Used.
151	LeavesQty	Y	8	168	Qty	Remaining quantity of an order.
14	CumQty	Y	8	176	Qty	Cumulated executed quantity of an order.
84	CxlQty	Y	8	184	Qty	Total quantity cancelled for this order.
710	Filler2	N	4	192	unsigned int	Not Used.
713	Filler4	N	2	196	unsigned int	Not Used.
39	OrdStatus	Y	1	198	char	Conveys the current status of an order. Value: Description 0: New 1: Partially filled 2: Filled 4: Cancelled 7: RRM Suspended 8: SquareOff Suspended
150	ExecType	Y	1	199	char	The reason why this message was generated. Value: Description 0: New 4: Cancelled L: Triggered 5: Replaced

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>378</td><td>ExecRestatement-Reason</td><td>Y</td><td>2</td><td>200</td><td>unsigned int</td><td>Code to further qualify the field Exec-Type (150) of the Execution Report (8) message.<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Order book restatement</td></tr><tr><td>102</td><td>Order modify accepted</td></tr><tr><td>101</td><td>Order add accepted</td></tr><tr><td>105</td><td>IOC Order Cancelled</td></tr><tr><td>135</td><td>Market Order triggered and executed</td></tr><tr><td>246</td><td>Self-Trade Order Deleted</td></tr></table></td></tr>
<tr><td>1227</td><td>ProductComplex</td><td>Y</td><td>1</td><td>202</td><td>unsigned int</td><td>This field qualifies an instrument type on MCX.<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Simple instrument</td></tr><tr><td>5</td><td>Futures Spread</td></tr></table></td></tr>
<tr><td>716</td><td>Filler5</td><td>N</td><td>1</td><td>203</td><td>unsigned int</td><td>Not Used.</td></tr>
<tr><td>39040</td><td>Pad4</td><td>N</td><td>4</td><td>204</td><td>Fixed String</td><td>Not Used.</td></tr>
</table>

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5.2.7 Reject-10010

All rejections and errors on an application and session level are communicated via the FIX standard Reject (3) message.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10010 (Reject, MsgType = 3)
39020	Pad2	U	2	6	Fixed String	not used
<NRResponseHeaderME>						
5979	RequestTime	Y	8	8	UTCTimestamp	In timestamp; filled always by the gateway
745	Reserve0	U	8	16	UTCTimestamp	not used
21002	Reserve1	U	8	24	UTCTimestamp	not used
21003	Reserve2	U	8	32	UTCTimestamp	not used
7765	Reserve3	U	8	40	UTCTimestamp	not used
52	SendingTime	Y	8	48	UTCTimestamp	Outgoing delta timestamp; filled always by the gateway
34	MsgSeqNum	Y	4	56	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
893	LastFragment	Y	1	60	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 1 – Description: Last Message
39030	Pad3	U	3	61	Fixed String	not used
<MessageBody>						
373	SessionRejectReason	Y	4	64	unsigned int	Error code. Valid values are listed after this table.
30354	VarTextLen	Y	2	68	Counter	Values <100 are reserved by FIX. We will use user-defined values for application level errors as well

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
1409	SessionStatus	Y	1	70	unsigned int	Session status. Value: 0 = Session active; 4 = Session logout complete
39000	Pad1	N	1	71	Fixed String	Not Used.
30355	VarText	Y	2000	72	Variable String	News text. Actual violation/Alert text Valid characters: \x09, \x0A, \x0D, \x20-\x7B, \x7D, \x7E

Valid Values of SessionRejectReason (datatype SessionRejectReason)

Valid Value	Description
1	Required Tag Missing
5	Value is incorrect (out of range) for this tag
7	Decryption problem
11	Invalid TemplateID
16	Incorrect NumInGroup count for repeating group
99	Other
100	Throttle limit exceeded
101	Stale request was not forwarded to MCX
102	Service temporarily not available
103	Service not available
104	Result Of Transaction Unknown
105	Error converting response or broadcast
152	Heartbeat violation error
200	Internal technical error
210	Validation Error
211	User already logged in
10000	Order not found
10001	Price not reasonable
10004	BU Book Order Limit Ex-ceeded
10005	Session Book Order Limit Exceeded
10006	LstUpdate Timestamp Not Matched

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5.2.8 Cancel Order Single-10109

This message is used to cancel a single order. This message is sent to the service “Order and Quote Management”.

Tag	Field Name	Req’d	Len	Ofs	Data Type	Description
	<MessageHeaderIn>					
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10109 (OrderCancelRequest, MsgType = F)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used
39020	Pad2	U	2	14	Fixed String	not used
	<RequestHeader>					
34	MsgSeqNum	Y	4	16	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
50	SenderSubID	Y	4	20	unsigned int	User ID.
	<MessageBody>					
37	OrderID	Y	8	24	unsigned int	Exchange Order ID generated by the MCX System; it remains constant over the lifetime of an order.
11	ClOrdID	N	8	32	unsigned int	Client Order ID: Unique participant defined order request identifier; used for client order id chaining. ClOrdID should be mention in NewOrderSingle and same value can be passed in ClOrdID as well as OrigClOrdID.
41	OrigClOrdID	N	8	40	unsigned int	ClOrdID (11) of the last successfully processed task (request) referring to the specific order.
723	LstUpdtTime	N	8	48	UTCTimestamp	LastUpdate timestamp for that order
727	StrategyID	N	8	56	unsigned int	Strategy Approved by the exchange should be used.Range being from 0 to 99999
734	StrategyTriggerSeqNo	N	8	64	unsigned int	Strategy Sequence numbers
711	Echo	N	4	72	signed int	Vendors can use this as a reference in response from exchange
1300	MarketSegmentID	Y	4	76	signed int	Product identifier.
30048	SimpleSecurityID	Y	4	80	unsigned int	Instrument identifier for simple instruments.
20655	TargetPartyIDSessionID	N	4	84	unsigned int	Session ID that entered the order.
712	RegulatoryID	N	4	88	unsigned int	For participants to uniquely identify trading startegies
39040	Pad4	N	4	92	Fixed String	Not Used.

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5.2.9 Cancel Order Response (Standard Order)-10110

This message confirms the cancellation of a Standard Order.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10110 (ExecutionReport, MsgType = 8)
39020	Pad2	U	2	6	Fixed String	not used
<ResponseHeaderME>						
5979	RequestTime	Y	8	8	UTCTimestamp	Time when request was considered for processing
745	Reserve0	U	8	16	UTCTimestamp	not used
21002	Reserve1	Y	8	24	UTCTimestamp	Not used.
21003	Reserve2	Y	8	32	UTCTimestamp	Not used.
7765	Reserve3	Y	8	40	UTCTimestamp	Not used.
52	SendingTime	Y	8	48	UTCTimestamp	Gateway response out timestamp.
34	MsgSeqNum	Y	4	56	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
5948	PartitionID	Y	2	60	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.
1180	ApplID	Y	1	62	unsigned int	Identifier for an ETI data stream. Value: 4 – Description: Session Data
28704	ApplMsgID	N	16	63	data	Not set if the submitting session is not the owner of the cancelled order.
893	LastFragment	Y	1	79	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 1 – Description: Last Message
<Message Body>						
37	OrderID	Y	8	80	unsigned int	Exchange Order ID generated by the MCX System; it remains constant over the lifetime of an order.

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
11	ClOrdID	N	8	88	unsigned int	Client Order ID: Unique participant defined order request identifier; used for client order id chaining.
41	OrigClOrdID	N	8	96	unsigned int	ClOrdID (11) of the last successfully processed task (request) referring to the specific order.
48	SecurityID	Y	8	104	signed int	Instrument identifier.
17	ExecID	Y	8	112	UTCTimestamp	Transaction timestamp.
14	CumQty	Y	8	120	Qty	Cumulated executed quantity of an order.
84	CxlQty	Y	8	128	Qty	Total quantity cancelled for this order.
39	OrdStatus	Y	1	136	char	Conveys the current status of an order. Value: Description 0: New 1: Partially filled 2: Filled 4: Cancelled 7: RRM Suspended 8: SquareOff Suspended
150	ExecType	Y	1	137	char	The reason why this message was generated. Value: Description 4: Cancelled
378	ExecRestatement-Reason	Y	2	138	unsigned int	Code to further qualify the field ExecType (150) of the Execution Report (8) message. Value: Description 103: Order delete accepted 197: Pending order deletion
1227	ProductComplex	Y	1	140	unsigned int	This field qualifies an instrument type on MCX. Value: Description 1: Simple instrument 5: Futures Spread
39030	Pad3	N	3	141	Fixed String	Not Used.

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5.2.10 Immediate Execution Response-10103

This message informs about the immediate execution of an incoming order or the execution of a book order due to a replace request.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10103 (ExecutionReport, MsgType = 8)
39020	Pad2	U	2	6	Fixed String	not used
<ResponseHeaderME>						
5979	RequestTime	Y	8	8	UTCTimestamp	Time when request was considered for processing
745	Reserve0	U	8	16	UTCTimestamp	not used
21002	Reserve1	Y	8	24	UTCTimestamp	Not Used
21003	Reserve2	Y	8	32	UTCTimestamp	Not Used
7765	Reserve3	Y	8	40	UTCTimestamp	Not Used
52	SendingTime	Y	8	48	UTCTimestamp	Gateway response out timestamp.
34	MsgSeqNum	Y	4	56	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
5948	PartitionID	Y	2	60	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.
1180	ApplID	Y	1	62	unsigned int	Identifier for an ETI data stream. Value: 4 – Description: Session Data
28704	ApplMsgID	N	16	63	data	Not set if the submitting session is not the owner of the executed order.
893	LastFragment	Y	1	79	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 0 – Description: Not Last Message
<Message Body>						
37	OrderID	Y	8	80	unsigned int	Exchange Order ID generated by the MCX System; it remains constant over the lifetime of an order.

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
11	ClOrdID	N	8	88	unsigned int	Client Order ID: Unique participant defined order request identifier; used for client order id chaining.
41	OrigClOrdID	N	8	96	unsigned int	ClOrdID (11) of the last successfully processed task (request) referring to the specific order.
48	SecurityID	Y	8	104	signed int	Instrument identifier.
17	ExecID	Y	8	112	UTCTimestamp	Transaction timestamp.
21009	TrdRegTSEntryTime	N	8	120	UTCTimestamp	The entry timestamp is the time of the creation of the order.
742	Reserve4	N	8	128	UTCTimestamp	
723	LstUpdtTime	Y	8	136	UTCTimestamp	Last Updated timestamp for that order
732	DisclosedQty	N	8	144	Qty	The quantity to be made visible in the market data.DisclosedQty is set to 0 in case full qty needs to be disclosed.
736	Reserve1	N	8	152	unsigned int	Not Used
710	Filler2	N	4	160	unsigned int	Not Used.
1300	MarketSegmentID	Y	4	164	signed int	Product identifier.
151	LeavesQty	Y	8	168	Qty	Remaining quantity of an order.If the order has been executed partially this field contains the non-executed quantity. A remaining size of 0 indicates that the order is fully matched or no longer active.
14	CumQty	Y	8	176	Qty	Cumulated executed quantity of an order.
84	CxlQty	Y	8	184	Qty	Total quantity cancelled for this order.
727	StrategyID	Y	8	192	unsigned int	Strategy Approved by the exchange should be used.Range being from 0 to 99999
728	StrategySequence-Number	Y	8	200	unsigned int	Strategy Sequence numbers
713	Filler4	N	2	208	unsigned int	Not Used.
30555	NoLegExecs	Y	2	210	Counter	Number of InstrmntLegExec repeating group instances.
378	ExecRestatement-Reason	Y	2	212	unsigned int	Code to further qualify the field ExecType (150) of the Execution Report (8) message. Valid values are listed after this table.

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
1227	ProductComplex	Y	1	214	unsigned int	This field qualifies an instrument type on MCX. Value: Description 1: Simple instrument 5: Futures Spread
54	Side	Y	1	215	unsigned int	Side of the order. Value: Description 1: Buy 2: Sell
39	OrdStatus	Y	1	216	char	Conveys the current status of an order. Value: Description 1: Partially filled 2: Filled 4: Cancelled
150	ExecType	Y	1	217	char	The reason why this message was generated. Value: Description F: Trade
1823	Triggered	Y	1	218	unsigned int	Indicates if an order has been previously triggered. Value: Description 0: Not triggered 1: Triggered Stop
716	Filler5	N	1	219	unsigned int	Not Used.
1362	NoFills	Y	1	220	Counter	Specifies the number of partial fills included in this Execution Report.
39030	Pad3	N	3	221	Fixed String	Not Used.
<FillsGrp>						Cardinality: 0-100, Record counter: NoFills
1364	>FillPx	Y	8	224	PriceType	Price of Fill.
1365	>FillQty	Y	8	232	Qty	Quantity of Fill.
28708	>FillMatchID	Y	4	240	unsigned int	Unique identifier for each price level (match step) of a match event; it is used for public trade reporting.

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
1363	>FillExecID	Y	4	244	signed int	Private identifier of an order match step event, which can be reconciled with the field SideTradeID (1506) in the Trade Notification.
1443	>FillLiquidityInd	N	1	248	unsigned int	Not Used
39070	>Pad7	N	7	249	Fixed String	Not Used.
<InstrmntLegExecGrp>						Cardinality: 0-600, Record counter: NoLegExecs
602	>LegSecurityID	Y	8	0	signed int	Instrument identifier of the leg security.
637	>LegLastPx	Y	8	8	PriceType	Price of this leg fill.
1418	>LegLastQty	Y	8	16	Qty	Quantity executed in this leg fill.
1893	>LegExecID	Y	4	24	signed int	Private identifier of a leg match step, which can be reconciled with the field SideTradeID (1506) in the Trade Notification.
624	>LegSide	Y	1	28	unsigned int	The side of the individual leg of a strategy as defined in its signature. Value: 1 = Buy; 2 = Sell
2421	>FillRefID	Y	1	29	unsigned int	Reference to the corresponding FillsGrp repeating group instance.
39020	>Pad2	N	2	30	Fixed String	Not Used.

Valid Values of ExecRestatementReason (datatype ExecRestatementReason)

Valid Value	Description
1	Order book restatement
101	Order add accepted
102	Order modify accepted
103	Order delete accepted
105	IOC Order Cancelled
108	Book Order executed
114	Order has been changed to IOC
135	Market Order triggered and executed
145	Start Of Day Processing
146	End Of Day Processing
155	Order Refreshed

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172	Stop Order has been triggered
215	Risk Reduction Timer Expired
217	Tick Size Change
248	Active order deletion due to SMPF
250	Active order modification due to SMPF
252	Passive order deletion due to SMPF
254	Passive oder modification due to SMPF
261	Panic Cancel
302	RRMIN
303	SQUAREOFFIN
357	Base Price Update
358	Order Deleted As Price Moved Out Of DPL Range

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5.2.11 Extended Order Information-10117

This message format is used for order book restatement, retransmission of order events, the Listener Broadcast and for unsolicited order events within the session data.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10117 (ExecutionReport, MsgType = 8)
39020	Pad2	U	2	6	Fixed String	not used
<RBCHeaderME>						
21003	Reserve2	N	8	8	UTCTimestamp	Not Used.
52	SendingTime	Y	8	16	UTCTimestamp	Gateway response out timestamp.
28727	ApplSubID	N	4	24	unsigned int	Only set for Listener Data.
5948	PartitionID	Y	2	28	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.
28704	ApplMsgID	N	16	30	data	Application message identifier assigned to an order or quote event.
						Value: Description 4: Session Data 5: Listener Data
1352	ApplResendFlag	Y	1	47	unsigned int	Indicates a retransmission message. Value: Description 0: False 1: True
893	LastFragment	Y	1	48	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: Description 0: Not Last Message 1: Last Message
39070	Pad7	U	7	49	Fixed String	not used
<MessageBody>						
37	OrderID	Y	8	56	unsigned int	Exchange Order ID generated by the MCX System; it remains constant over the lifetime of an order.

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>11</td><td>ClOrdID</td><td>N</td><td>8</td><td>64</td><td>unsigned int</td><td>Client Order ID: Unique participant defined order request identifier; used for client order id chaining.</td></tr>
<tr><td>41</td><td>OrigClOrdID</td><td>N</td><td>8</td><td>72</td><td>unsigned int</td><td>ClOrdID (11) of the last successfully processed task (request) referring to the specific order.</td></tr>
<tr><td>48</td><td>SecurityID</td><td>Y</td><td>8</td><td>80</td><td>signed int</td><td>Instrument identifier.</td></tr>
<tr><td>731</td><td>MaxPricePercentage</td><td>N</td><td>8</td><td>88</td><td>PriceType</td><td>Price per unit of quantity (e.g. per share)</td></tr>
<tr><td>708</td><td>TerminalInfo</td><td>Y</td><td>8</td><td>96</td><td>unsigned int</td><td>Total 15 Characters
For 1st- 12 characters value(11111111111-33333333333),
For 13th character value(0-3)
14th – 15th digit should be valid vendor code / in House CTCL code for member
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>11111111111</td><td>IBT</td></tr>
<tr><td>22222222222</td><td>DMA</td></tr>
<tr><td>33333333333</td><td>Wireless Technology</td></tr>
<tr><td>0</td><td>Order not generated through Program trading software</td></tr>
<tr><td>1</td><td>Order generated through Program trading software</td></tr>
<tr><td>2</td><td>Smart Order Rout-ing without Program trading software</td></tr>
<tr><td>3</td><td>Smart Order Routing with program trading software</td></tr>
</table></td></tr>
<tr><td>17</td><td>ExecID</td><td>Y</td><td>8</td><td>104</td><td>UTCTimestamp</td><td>Transaction timestamp.</td></tr>
<tr><td>21009</td><td>TrdRegTSEntryTime</td><td>Y</td><td>8</td><td>112</td><td>UTCTimestamp</td><td>The entry timestamp is the time of the creation of the order.</td></tr>
<tr><td>722</td><td>Reserve14</td><td>Y</td><td>8</td><td>120</td><td>UTCTimestamp</td><td>Not used.</td></tr>
<tr><td>44</td><td>Price</td><td>N</td><td>8</td><td>128</td><td>PriceType</td><td>Limit price. Required if OrdType (40) is Limit (2) or Stop Limit (4).</td></tr>
<tr><td>99</td><td>StopPx</td><td>N</td><td>8</td><td>136</td><td>PriceType</td><td>Stop price. Required if OrdType (40) is Stop (3) or used as the trigger price for an One-cancels-the-other order.</td></tr>
<tr><td>721</td><td>Reserved2</td><td>N</td><td>8</td><td>144</td><td>unsigned int</td><td>Not used.</td></tr>
</table>

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
720	Reserved1	N	8	152	unsigned int	Not used.
740	LstUpdTime	Y	8	160	UTCTimestamp	Last Update timestamp for that order
709	Filler1	N	8	168	unsigned int	Not used.
151	LeavesQty	Y	8	176	Qty	Remaining quantity of an order.
732	DisclosedQty	N	8	184	Qty	The quantity to be made visible in the market data.DisclosedQty is set to 0 in case full qty needs to be disclosed.
14	CumQty	Y	8	192	Qty	Cumulated executed quantity of an order.
84	CxlQty	Y	8	200	Qty	Total quantity cancelled for this order.
38	OrderQty	Y	8	208	Qty	Total Order Quantity.
727	StrategyID	Y	8	216	unsigned int	Strategy Approved by the exchange should be used.Range being from 0 to 99999
728	StrategySequence-Number	Y	8	224	unsigned int	Strategy Sequence numbers
30738	SpreadPrice	N	8	232	PriceType	Price per unit of quantity (e.g. per share)
1300	MarketSegmentID	Y	4	240	signed int	Product identifier.
711	Echo	N	4	244	signed int	Vendors can use this as a reference in response from exchange
432	ExpireDate	N	4	248	LocalMktDate	Date of order expiry. Required if TimeInForce (59) = 6.
20059	PartyIDExecutingUnit	Y	4	252	unsigned int	Business Unit ID.
20055	PartyIDSessionID	Y	4	256	unsigned int	Session ID.
20012	PartyIDExecuting-Trader	Y	4	260	unsigned int	Owning User ID.
20036	PartyIDEntering-Trader	N	4	264	unsigned int	Entering User ID.
30555	NoLegExecs	Y	2	268	Counter	Number of InstrmntLegExec repeating group instances.
378	ExecRestatement-Reason	Y	2	270	unsigned int	Code to further qualify the field ExecType (150) of the Execution Report (8) message. Valid values are listed after this table.

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
714	AccountType	Y	1	272	unsigned int	<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Own</td></tr><tr><td>3</td><td>Client</td></tr><tr><td>5</td><td>Institution</td></tr></table>
20007	PartyIDEnteringFirm	N	1	273	unsigned int	Entering Entity ID.<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Participant</td></tr><tr><td>2</td><td>Market Supervision</td></tr></table>
1227	ProductComplex	Y	1	274	unsigned int	This field qualifies an instrument type on MCX.<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Simple instrument</td></tr><tr><td>5</td><td>Futures Spread</td></tr></table>
39	OrdStatus	Y	1	275	char	Conveys the current status of an order.<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>New</td></tr><tr><td>1</td><td>Partially filled</td></tr><tr><td>2</td><td>Filled</td></tr><tr><td>4</td><td>Cancelled</td></tr><tr><td>7</td><td>RRM Suspended</td></tr><tr><td>8</td><td>SquareOff Suspended</td></tr></table>
150	ExecType	Y	1	276	char	The reason why this message was generated.<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>New</td></tr><tr><td>4</td><td>Cancelled</td></tr><tr><td>5</td><td>Replaced</td></tr><tr><td>D</td><td>Restated</td></tr><tr><td>L</td><td>Triggered</td></tr><tr><td>F</td><td>Trade</td></tr></table>
54	Side	Y	1	277	unsigned int	Side of the order.<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Buy</td></tr><tr><td>2</td><td>Sell</td></tr></table>

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>40</td><td>OrdType</td><td>Y</td><td>1</td><td>278</td><td>unsigned int</td><td>Order type.
<table><tr><th>Value</th><th>Description</th></tr><tr><td>2</td><td>Limit</td></tr><tr><td>3</td><td>Stop Market</td></tr><tr><td>4</td><td>Stop Limit</td></tr><tr><td>5</td><td>Market To Limit</td></tr><tr><td>6</td><td>Auction Buy IN</td></tr><tr><td>7</td><td>Auction_Sell_Out</td></tr></table></td></tr>
<tr><td>1815</td><td>TradingCapacity</td><td>Y</td><td>1</td><td>279</td><td>unsigned int</td><td>Not used.</td></tr>
<tr><td>59</td><td>TimeInForce</td><td>N</td><td>1</td><td>280</td><td>unsigned int</td><td>Execution and trading restriction parameters supported by MCX.
<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>Day (DAY)</td></tr><tr><td>1</td><td>Good Till Cancelled (GTC) - Standard Orders only</td></tr><tr><td>3</td><td>Immediate or Cancel (IOC)</td></tr><tr><td>6</td><td>Good Till Date (GTD) - Standard Orders only</td></tr><tr><td>7</td><td>End Of Session (EOS)</td></tr></table></td></tr>
<tr><td>18</td><td>ExecInst</td><td>N</td><td>1</td><td>281</td><td>unsigned int</td><td>Instructions for order handling on exchange trading floor. If more than one instruction is applicable to an order, this field can contain multiple 105nstructtions separated by space.
<table><tr><td>1</td><td>Persistent Order(FIX value-H)</td></tr><tr><td>2</td><td>Non-Persistent Order(FIX value-Q)</td></tr><tr><td></td><td></td></tr></table></td></tr>
<tr><td>625</td><td>TradingSessionSubID</td><td>N</td><td>282</td><td></td><td>unsigned int</td><td>Used.
<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Start of Day</td></tr><tr><td>2</td><td>Pre-Trading</td></tr><tr><td>3</td><td>Trading</td></tr><tr><td>4</td><td>Closing or closing auction</td></tr><tr><td>5</td><td>Post-Trading</td></tr><tr><td>6</td><td>End of Day</td></tr><tr><td>7</td><td>Post End of Day</td></tr><tr><td>8</td><td>Halt</td></tr></table></td></tr>
</table>

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
28703	ApplSeqIndicator	N	1	283	unsigned int	<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>No recovery required</td></tr><tr><td>1</td><td>Standard Order</td></tr></table>
741	STPCFlag	Y	1	284	unsigned int	<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>Passive</td></tr><tr><td>1</td><td>Active</td></tr></table>
770	MultiLegType	N	1	285	unsigned int	
1	Account	N	2	286	Fixed String (0-terminable)	Not used. Must be sent as A1 Valid characters: 1-9, \x41, \x47, \x49, \x4D, \x50, \x52
77	PositionEffect	N	1	288	char	must be set to C
20096	PartyIDTakeUp-TradingFirm	N	5	289	Fixed String	Not Used.
20013	PartyIDOrder-OriginationFirm	N	7	294	Fixed String	Not used.
20032	PartyIDBeneficiary	N	9	301	Fixed String	Not Used.
20075	PartyIDLocationID	N	2	310	Fixed String (0-terminable)	Not Used.
1031	CustOrderHandling-Inst	N	1	312	Fixed String	Not used. Valid characters: \x20, \x22-\x7B, \x7D, \x7E
718	UserReferenceText	N	20	313	Fixed String (0-terminable)	Upto 15 Char allowed.This field is used to provide addi-tional regulatory information (accord-ing to respective rules & regs, circu-lars and/or bilateral coordination be-tween participant and Trading Surveil-lance Office). Valid characters: \x20, \x22-\x7B, \x7D, \x7E
25007	FreeText1	N	12	333	Fixed String (0-terminable)	The Unique Client Code (UCC) of the person for whom the order is entered. Valid characters: \x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
717	CPCode	N	12	345	Fixed String (0-terminable)	The Participant code. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D.
25009	FreeText3	N	12	357	Fixed String	Free-format text field for traderspecific or customer-related comments. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D
1362	NoFills	Y	1	369	Counter	Specifies the number of partial fills included in this Execution Report.
555	NoLegs	Y	1	370	Counter	Number of LegOrd repeating group instances.
1823	Triggered	Y	1	371	unsigned int	Indicates if an order has been previously triggered.
39020	Pad2	N	2	372	Fixed String	Not Used.
<LegOrdGrp>						Cardinality: 0-20, Record counter: NoLegs
2680	>LegAccount	Y	2	374	Fixed String (0-terminable)	Leg-specific account to book trades and keep positions on. Valid characters: 1-9, \x41, \x47, \x4D, \x50
564	>LegPositionEffect	Y	1	376	char	not used., Must be set as C. Valid characters: \x01-\x7E
39050	>Pad5	N	5	377	Fixed String	Not Used.
<FillsGrp>						Cardinality: 0-100, Record counter: NoFills
1364	>FillPx	Y	8	0	PriceType	Price of Fill.
1365	>FillQty	Y	8	8	Qty	Quantity of Fill.
28708	>FillMatchID	Y	4	16	unsigned int	Unique identifier for each price level (match step) of a match event; it is used for public trade reporting.

Value	Description
0	Not triggered
1	Triggered Stop
2	Triggered OCO

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
1363	>FillExecID	Y	4	20	signed int	Private identifier of an order match step event, which can be reconciled with the field SideTradeID (1506) in the Trade Notification.
1443	>FillLiquidityInd	N	1	24	unsigned int	Not used. Value: Description 1: Added Liquidity 2: Removed Liquidity 4: Auction 5: Triggered Stop Order 6: Triggered OCO Order 7: Triggered Market Order
39070	>Pad7	N	7	25	Fixed String	Not Used.
<InstrmntLegExecGrp>						Cardinality: 0-600, Record counter: NoLegExecs
602	>LegSecurityID	Y	8	0	signed int	Instrument identifier of the leg security.
637	>LegLastPx	Y	8	8	PriceType	Price of this leg fill.
1418	>LegLastQty	Y	8	16	Qty	Quantity executed in this leg fill.
1893	>LegExecID	Y	4	24	signed int	Private identifier of a leg match step, which can be reconciled with the field SideTradeID (1506) in the Trade Notification.
624	>LegSide	Y	1	28	unsigned int	The side of the individual leg of a strategy as defined in its signature. Value: Description 1: Buy 2: Sell
2421	>FillRefID	Y	1	29	unsigned int	Reference to the corresponding FillsGrp repeating group instance.
39020	>Pad2	N	2	30	Fixed String	Not Used.

Valid Values of ExecRestatementReason (datatype ExecRestatementReason)

Valid Value					Description		
1	Order book restatement						
101	Order add accepted						
102	Order modify accepted						
103	Order delete accepted						
105	IOC Order Cancelled						
108	Book Order executed						

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114	Order has been changed to IOC
135	Market Order triggered and executed
145	Start Of Day Processing
146	End Of Day Processing
155	Order Refreshed
172	Stop Order has been triggered
215	Risk Reduction Timer Expired
217	Tick Size Change
248	Active order deletion due to SMPF
250	Active order modification due to SMPF
252	Passive order deletion due to SMPF
254	Passive oder modification due to SMPF
261	Panic Cancel
302	RRMIN
303	SQUAREOFFIN
357	Base Price Update
358	Order Deleted As Price Moved Out Of DPL Range

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5.2.12 Book Order Execution-10104

This message informs about the execution of a resting book order.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10104 (ExecutionReport, MsgType = 8)
39020	Pad2	U	2	6	Fixed String	not used
<RBCHeaderME>						
21003	Reserve2	N	8	8	UTCTimestamp	Not Used.
52	SendingTime	Y	8	16	UTCTimestamp	Outgoing timestamp; filled always by the gateway
28727	ApplSubID	U	4	24	unsigned int	not used
5948	PartitionID	Y	2	28	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.
28704	ApplMsgID	Y	16	30	data	Application message identifier assigned to an order or quote event.
1180	ApplID	Y	1	46	unsigned int	Identifier for an ETI data stream. Value: 4 – Session Data
1352	ApplResendFlag	Y	1	47	unsigned int	Indicates a retransmission message. Value: 0 – False; 1 – True
893	LastFragment	Y	1	48	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 0 – Not Last Message; 1 – Last Message
39070	Pad7	U	7	49	Fixed String	not used
<MessageBody>						
37	OrderID	Y	8	56	unsigned int	Exchange Order ID generated by the MCX System; it remains constant over the lifetime of an order.

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>708</td><td>TerminalInfo</td><td>Y</td><td>8</td><td>64</td><td>unsigned int</td><td>Total 15 Characters
For 1st- 12 characters value(11111111111-33333333333),
For 13th character value(0-3)
14th – 15th digit should be valid vendor code / in House CTCL code for member
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>11111111111</td><td>IBT</td></tr>
<tr><td>22222222222</td><td>DMA</td></tr>
<tr><td>33333333333</td><td>Wireless Technology</td></tr>
<tr><td>0</td><td>Order not generated through Program trading software</td></tr>
<tr><td>1</td><td>Order generated through Program trading software</td></tr>
<tr><td>2</td><td>Smart Order Rout-ing without Program trading software</td></tr>
<tr><td>3</td><td>Smart Order Routing with program trading software</td></tr>
</table></td></tr>
<tr><td>11</td><td>ClOrdID</td><td>N</td><td>8</td><td>72</td><td>unsigned int</td><td>Client Order ID: Unique participant defined order request identifier; used for client order id chaining.</td></tr>
<tr><td>41</td><td>OrigClOrdID</td><td>N</td><td>8</td><td>80</td><td>unsigned int</td><td>ClOrdID (11) of the last successfully processed task (request) referring to the specific order.</td></tr>
<tr><td>48</td><td>SecurityID</td><td>Y</td><td>8</td><td>88</td><td>signed int</td><td>Instrument identifier.</td></tr>
<tr><td>17</td><td>ExecID</td><td>Y</td><td>8</td><td>96</td><td>UTCTimestamp</td><td>Transaction timestamp.</td></tr>
<tr><td>723</td><td>LstUpdtTime</td><td>Y</td><td>8</td><td>104</td><td>UTCTimestamp</td><td>Last Update timestamp for that order</td></tr>
<tr><td>727</td><td>StrategyID</td><td>Y</td><td>8</td><td>112</td><td>unsigned int</td><td>Strategy Approved by the exchange should be used.Range being from 0 to 99999</td></tr>
<tr><td>728</td><td>StrategySequence-Number</td><td>Y</td><td>8</td><td>120</td><td>unsigned int</td><td>Strategy Sequence numbers</td></tr>
<tr><td>736</td><td>Reserve1</td><td>N</td><td>8</td><td>128</td><td>unsigned int</td><td>Not Used.</td></tr>
<tr><td>737</td><td>Reserve2</td><td>N</td><td>4</td><td>136</td><td>unsigned int</td><td>Not Used.</td></tr>
<tr><td>711</td><td>Echo</td><td>Y</td><td>4</td><td>140</td><td>signed int</td><td>Vendors can use this as a reference in response from exchange</td></tr>
</table>

Confidential

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
151	LeavesQty	Y	8	144	Qty	Remaining quantity of an order.
14	CumQty	Y	8	152	Qty	Cumulated executed quantity of an order.
84	CxlQty	Y	8	160	Qty	Total quantity cancelled for this order.
1300	MarketSegmentID	Y	4	168	signed int	Product identifier.
30555	NoLegExecs	Y	2	172	Counter	Number of InstrmntLegExec repeating group instances.
713	Filler4	N	2	174	unsigned int	Not Used.
378	ExecRestatement-Reason	Y	2	176	unsigned int	Code to further qualify the field ExecType (150) of the Execution Report (8) message. Value: Description 001: Order Book Restatement 101: Order Add Accepted 102: Order Add Accepted 103: Order Delete Accepted 105: IOC Order Cancelled 108: Book Order Executed 122: Instrument State Change 135: Market Order Triggered 172: Stop Order Triggered 199: Pending Order Cancellation Executed (Not used) 200: Order Add sent for Risk Validation 201: Self Trade Order Deleted 202: OrderCancelled: Session Expiry
714	AccountType	Y	1	178	unsigned int	Value: Description 1: Own 3: Client 5: Institution
1227	ProductComplex	Y	1	179	unsigned int	This field qualifies an instrument type on MCX. Value: Description 1: Simple instrument 5: Futures Spread

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
39	OrdStatus	Y	1	180	char	Conveys the current status of an order. Value: Description 0: New 1: Partially filled 2: Filled 4: Cancelled 7: RRM Suspended 8: SquareOff Suspended
150	ExecType	Y	1	181	char	The reason why this message was generated. Value: Description F: Trade
1823	Triggered	Y	1	182	unsigned int	Indicates if an order has been previously triggered. Value: Description 0: Not triggered 1: Triggered Stop 2: Triggered OCO
1362	NoFills	Y	1	183	Counter	Specifies the number of partial fills included in this Execution Report.
54	Side	Y	1	184	unsigned int	Side of the order. Value: Description 1: Buy 2: Sell
716	Filler5	N	1	185	unsigned int	Not Used.
1	Account	Y	2	186	Fixed String (0-terminable)	Not used. Must be sent as A1 Valid characters: 1-9, \x41, \x47, \x49, \x4D, \x50, \x52
25007	FreeText1	Y	12	188	Fixed String (0-terminable)	The Unique Client Code (UCC) of the person for whom the order is entered. Valid characters: \x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
717	CPCode	N	12	200	Fixed String (0-terminable)	The Participant code. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D.
25009	FreeText3	N	12	212	Fixed String	Free-format text field for traderspecific or customer-related comments. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D
718	UserReferenceText	N	20	224	Fixed String	~~Upto 15 Char allowed.~~This field is used to provide additionalregulatory information(according to respective rules andregs, circulars and/or bilateral coordination between participantand Trading Surveillance Office).Valid characters: \x20, \x22-\x7B, \x7D, \x7E.
39040	Pad4	U	4	244	Fixed String	Not used.
<FillsGrp>						Cardinality: 0-100, Record counter: NoFills
1364	>FillPx	Y	8	248	PriceType	Price of Fill.
1365	>FillQty	Y	8	256	Qty	Quantity of Fill.
28708	>FillMatchID	Y	4	264	unsigned int	Unique identifier for each price level (match step) of a match event; it is used for public trade reporting.
1363	>FillExecID	Y	4	268	signed int	Private identifier of an order match step event, which can be reconciled with the field SideTradeID (1506) in the Trade Notification.
1443	>FillLiquidityInd	N	1	272	unsigned int	Not Used.
39070	>Pad7	U	7	273	Fixed String	not used

Value	Description
1	Added Liquidity
2	Removed Liquidity
4	Auction
5	Triggered Stop Order
6	Triggered OCO Order
7	Triggered Market Order

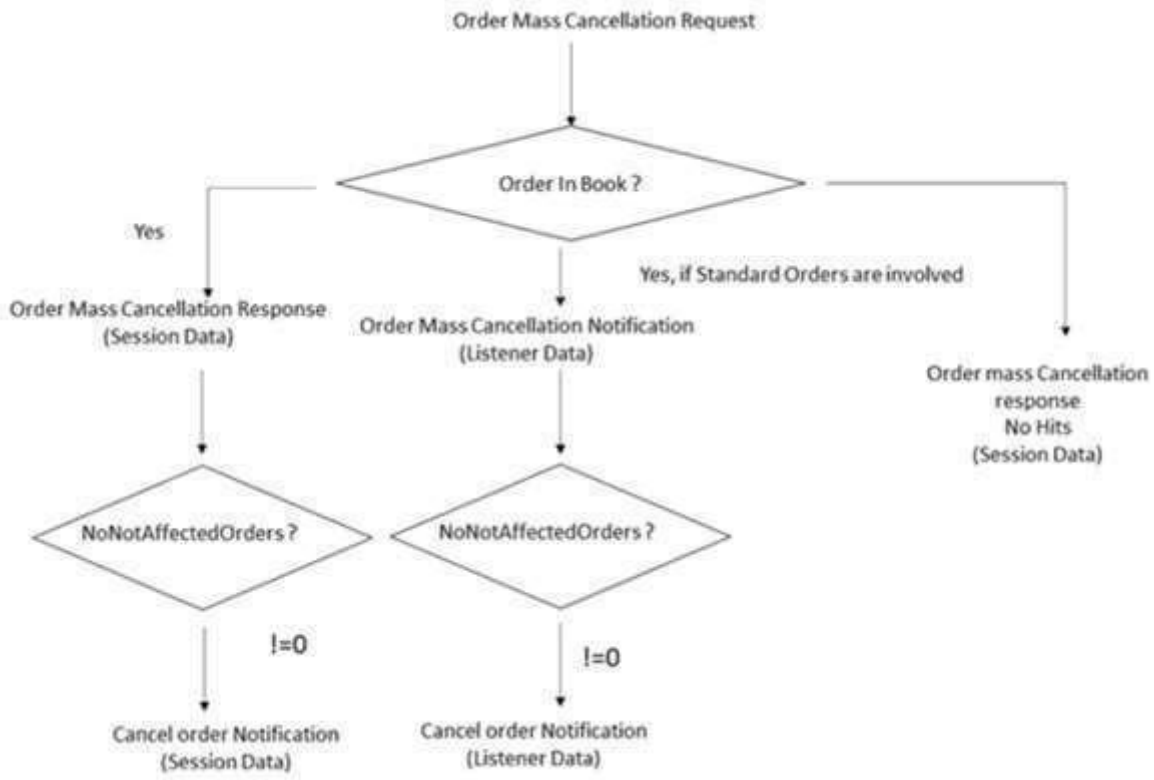
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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<InstrmntLegExecGrp>						Cardinality: 0-600, Record counter: NoLegExecs
602	>LegSecurityID	Y	8	0	signed int	Instrument identifier of the leg security.
637	>LegLastPx	Y	8	8	PriceType	Price of this leg fill.
1418	>LegLastQty	Y	8	16	Qty	Quantity executed in this leg fill.
1893	>LegExecID	Y	4	24	signed int	Private identifier of a leg match step, which can be reconciled with the field SideTradeID (1506) in the Trade Notification.
624	>LegSide	Y	1	28	unsigned int	The side of the individual leg of a strategy as defined in its signature. Value: Description 1: Buy 2: Sell
2421	>FillRefID	Y	1	29	unsigned int	Reference to the corresponding FillsGrp repeating group instance.
39020	>Pad2	N	2	30	Fixed String	Not used.

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5.2.13 Order Mass Cancellation Request-10120

This message is used for mass cancellation of orders. This message is sent to the service “Order and Quote Management”.



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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderIn>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10120 (OrderMassActionRequest, MsgType = CA)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used
39020	Pad2	U	2	14	Fixed String	not used
<RequestHeader>						
34	MsgSeqNum	Y	4	16	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
50	SenderSubID	Y	4	20	unsigned int	User ID.
<MessageBody>						
48	SecurityID	N	8	24	signed int	Instrument identifier.
1300	MarketSegmentID	Y	4	32	signed int	Product identifier.
712	RegulatoryID	N	4	36	unsigned int	For participants to uniquely identify trading startegies
20655	TargetPartyIDSessionID	N	4	40	unsigned int	Session ID.
20612	TargetPartyIDExecutingTrader	N	4	44	unsigned int	Owning User ID.
727	StrategyID	Y	8	48	unsigned int	Strategy Approved by the exchange should be used.Range being from 0 to 99999
728	StrategySequenceNumber	Y	8	56	unsigned int	Strategy Sequence numbers
37	OrderID	N	8	64	unsigned int	Exchange Order ID generated by the MCX System; it remains constant over the lifetime of an order.
711	Echo	Y	4	72	signed int	User defined free field. The field is echoed in the trade notifications, listener data, session data.
54	Side	N	1	76	unsigned int	Side of the order. Value: 1 – Buy Value: 2 – Sell

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>1</td><td>Account</td><td>N</td><td>2</td><td>77</td><td>Fixed String (0-terminable)</td><td>Not used.
Must be sent as A1
Valid characters: 1-9, \x41, \x47, \x49, \x4D, \x50, \x52</td></tr>
<tr><td>25007</td><td>FreeText1</td><td>N</td><td>12</td><td>79</td><td>Fixed String (0-terminable)</td><td>UCC code of the orders to be cancelled. In case space is set, then filter will not be applied.</td></tr>
<tr><td>717</td><td>CPCode</td><td>N</td><td>12</td><td>91</td><td>Fixed String (0-terminable)</td><td>The Participant code in case INST account orders to be cancelled.</td></tr>
<tr><td>59</td><td>TimeInForce</td><td>N</td><td>1</td><td>103</td><td>unsigned int</td><td>Execution and trading restriction parameters supported by MCX.
<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>Day (DAY)</td></tr><tr><td>1</td><td>Good Till Cancelled (GTC) - Standard Orders only</td></tr><tr><td>3</td><td>Immediate or Cancel (IOC)</td></tr><tr><td>6</td><td>Good Till Date (GTD) - Standard Orders only</td></tr><tr><td>7</td><td>End Of Session (EOS)</td></tr></table></td></tr>
<tr><td>40</td><td>OrdType</td><td>N</td><td>1</td><td>104</td><td>unsigned int</td><td>Order type.
<table><tr><th>Value</th><th>Description</th></tr><tr><td>2</td><td>Limit</td></tr><tr><td>3</td><td>Stop Market</td></tr><tr><td>4</td><td>Stop Limit</td></tr><tr><td>5</td><td>Market To Limit</td></tr><tr><td>W</td><td>Auction Buy IN</td></tr><tr><td>X</td><td>Auction_Sell_Out</td></tr></table></td></tr>
<tr><td>39070</td><td>Pad7</td><td>N</td><td>7</td><td>105</td><td>Fixed String</td><td>Not Used.</td></tr>
</table>

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5.2.14 Order Mass Cancellation Response-10121

This message confirms the Mass Cancellation request for orders.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10121 (OrderMassActionReport, MsgType = BZ)
39020	Pad2	U	2	6	Fixed String	not used
<ResponseHeaderME>						
5979	RequestTime	Y	8	8	UTCTimestamp	Time when request was considered for processing
745	Reserve0	N	8	16	UTCTimestamp	Not used.
21002	Reserve1	Y	8	24	UTCTimestamp	Not used.
21003	Reserve2	Y	8	32	UTCTimestamp	Not used.
7765	Reserve3	Y	8	40	UTCTimestamp	Not used.
52	SendingTime	Y	8	48	UTCTimestamp	Gateway response out timestamp.
34	MsgSeqNum	Y	4	56	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
5948	PartitionID	Y	2	60	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.
1180	ApplID	Y	1	62	unsigned int	Identifier for an ETI data stream. Value: 4 – Description: Session Data
28704	ApplMsgID	Y	16	63	data	Application message identifier assigned to an order or quote event.
893	LastFragment	Y	1	79	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 0 – Description: Not Last Message Value: 1 – Description: Last Message
<MessageBody>						
1369	MassActionReportID	Y	8	80	UTCTimestamp	Last Update timestamp.
1370	NoNotAffectedOrders	Y	2	88	Counter	Number of NotAffectedOrders repeating group instances.

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
28782	NoAffectedOrder-Request	Y	2	90	Counter	Number of affected order transactions. It will be 0 in case of non-persistent order even if all non-persistent order got deleted.
39040	Pad4	N	4	92	Fixed String	Not Used.
<NotAffectedOrdersGrp>						Cardinality: 0-500, Record counter: NoNotAffectedOrders
1371	>NotAffectedOrderID	Y	8	96	unsigned int	Exchange Order ID of an order whose cancellation is pending.
1372	>NotAffOrigClOrdID	N	8	104	unsigned int	Original Client Order ID of an order whose cancellation is pending.
<AffectedOrdersGrp>						Cardinality: 0-500, Record counter: NoAffectedOrderRequests
28783	>AffectedOrder-RequestID	Y	8	112	unsigned int	ETI Exchange Order number affected by the transaction

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5.2.15 Order Mass Cancellation Response No Hits-10124

This message confirms the Mass Cancellation request for orders if the order book of the session was not affected.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10124 (OrderMassActionReport, MsgType = BZ)
39020	Pad2	U	2	6	Fixed String	not used
<NRResponseHeaderME>						
5979	RequestTime	Y	8	8	UTCTimestamp	Time when request was considered for processing
745	Reserve0	U	8	16	UTCTimestamp	not used
21002	Reserve1	Y	8	24	UTCTimestamp	Not used.
21003	Reserve2	Y	8	32	UTCTimestamp	Not used.
7765	Reserve3	Y	8	40	UTCTimestamp	Not used.
52	SendingTime	Y	8	48	UTCTimestamp	Gateway response out timestamp.
34	MsgSeqNum	Y	4	56	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
893	LastFragment	Y	1	60	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 1 – Description: Last Message
39030	Pad3	U	3	61	Fixed String	not used
<MessageBody>						
1369	MassActionReportID	Y	8	64	UTCTimestamp	Last Update timestamp.

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5.2.16 Delete All Order Broadcast-10122

This message informs about an unsolicited mass cancellation event of orders.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10122 (OrderMassActionReport, MsgType = BZ)
39020	Pad2	U	2	6	Fixed String	not used
<RBCHeaderME>						
21003	Reserve2	N	8	8	UTCTimestamp	Not used.
52	SendingTime	Y	8	16	UTCTimestamp	Gateway response out timestamp.
28727	ApplSubID	N	4	24	unsigned int	Only set for Listener Data.
5948	PartitionID	Y	2	28	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.
28704	ApplMsgID	Y	16	30	data	Application message identifier assigned to an order or quote event.
1180	ApplID	Y	1	46	unsigned int	Identifier for an ETI data stream. Value: 4 – Session Data Value: 5 – Listener Data
1352	ApplResendFlag	Y	1	47	unsigned int	Indicates a retransmission message. Value: 0 – False Value: 1 – True
893	LastFragment	Y	1	48	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 0 – Not Last Message Value: 1 – Last Message
39070	Pad7	U	7	49	Fixed String	not used
<MessageBody>						
1369	MassActionReportID	Y	8	56	UTCTimestamp	Last Update timestamp.
48	SecurityID	N	8	64	signed int	Only set for mass cancellations on instrument (SecurityID) level.

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
727	StrategyID	N	8	72	unsigned int	Strategy Approved by the exchange should be used.Range being from 0 to 99999
728	StrategySequence-Number	N	8	80	unsigned int	Strategy Sequence numbers
37	OrderID	N	8	88	unsigned int	Exchange Order ID generated by the MCX System; it remains constant over the lifetime of an order.
1300	MarketSegmentID	Y	4	96	signed int	Product identifier.
20655	TargetPartyIDSession-ID	Y	4	100	unsigned int	Session ID.
20612	TargetParty-IDExecutingTrader	N	4	104	unsigned int	Owning User ID.
20036	PartyIDEntering-Trader	N	4	108	unsigned int	Entering User ID.
712	RegulatoryID	N	4	112	unsigned int	For participants to uniquely identify trading startegies
711	Echo	N	4	116	signed int	Vendors can use this as a reference in response from exchange
1370	NoNotAffectedOrders	Y	2	120	Counter	Number of NotAffectedOrders repeat-ing group instances.
20007	PartyIDEnteringFirm	N	1	122	unsigned int	Entering Entity ID. Value: 1 – Participant; 2 – Market Supervision
28721	MassActionReason	Y	1	123	unsigned int	Reason for mass cancellation. Value: 0 – No special reason; 1 – Trading was stopped; 2 – Emergency; 4 – Stop button Activated; 5 – Business unit suspended; 6 – Session loss or logout; 8 – Clearing Risk Control; 100 – Internal connection loss; 107 – Instrument Suspended; 108 – Price Band Shrink; 119 – RRM: Market Wide Position Limit

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td>
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>3</td><td>Market Maker protection</td></tr>
<tr><td>7</td><td>Duplicate Session Login</td></tr>
<tr><td>105</td><td>Product State Halt</td></tr>
<tr><td>106</td><td>Product State Holiday</td></tr>
<tr><td>109</td><td>Complex instrument deletion</td></tr>
<tr><td>110</td><td>Volatility Interruption</td></tr>
<tr><td>111</td><td>Product temporarily not tradeable</td></tr>
<tr><td>117</td><td>Member disabled</td></tr>
<tr><td>120</td><td>Product state EOD</td></tr>
<tr><td>179</td><td>Member Status change</td></tr>
<tr><td>202</td><td>RRM cancellation</td></tr>
<tr><td>203</td><td>SquareOff</td></tr>
<tr><td>205</td><td>Debarred</td></tr>
<tr><td>206</td><td>Disallowed</td></tr>
<tr><td>207</td><td>User Disabled</td></tr>
<tr><td>208</td><td>Entity SquareOff</td></tr>
<tr><td>209</td><td>Suspended SquareOff</td></tr>
<tr><td>217</td><td>Suspended</td></tr>
</table>
</td></tr>
<tr><td>18</td><td>ExecInst</td><td>Y</td><td>1</td><td>124</td><td>unsigned int</td><td>Instructions for order handling on ex-change trading floor. If more than one instruction is applicable to an order, this field can contain multiple 124nstruct- tions separated by space.
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>1</td><td>Persistent Order(FIX value-H)</td></tr>
<tr><td>2</td><td>Non-Persistent Order(FIX value-Q)</td></tr>
<tr><td>3</td><td>Persistent and Non-Persistent Orders Affected</td></tr>
</table>
</td></tr>
<tr><td>54</td><td>Side</td><td>N</td><td>1</td><td>125</td><td>unsigned int</td><td>Side of the order.
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>1</td><td>Buy</td></tr>
<tr><td>2</td><td>Sell</td></tr>
</table>
</td></tr>
<tr><td>1</td><td>Account</td><td>N</td><td>2</td><td>126</td><td>Fixed String (0-terminable)</td><td>Not used.
Must be sent as A1
Valid characters: 1-9, \x41, \x47, \x49, \x4D, \x50, \x52</td></tr>
</table>

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>59</td><td>TimeInForce</td><td>N</td><td>1</td><td>128</td><td>unsigned int</td><td>Execution and trading restriction parameters supported by MCX.
<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>Day (DAY)</td></tr><tr><td>1</td><td>Good Till Cancelled (GTC) – Standard Orders only</td></tr><tr><td>3</td><td>Immediate or Cancel (IOC)</td></tr><tr><td>6</td><td>Good Till Date (GTD) – Standard Orders only</td></tr><tr><td>7</td><td>Session (EOS)</td></tr></table></td></tr>
<tr><td>40</td><td>OrdType</td><td>N</td><td>1</td><td>129</td><td>unsigned int</td><td>Order type.
<table><tr><th>Value</th><th>Description</th></tr><tr><td>2</td><td>Limit</td></tr><tr><td>3</td><td>Stop Market</td></tr><tr><td>4</td><td>Stop Limit</td></tr><tr><td>5</td><td>Market To Limit</td></tr><tr><td>6</td><td>Auction Buy IN</td></tr><tr><td>7</td><td>Auction_Sell_Out</td></tr></table></td></tr>
<tr><td>25007</td><td>FreeText1</td><td>N</td><td>12</td><td>130</td><td>Fixed String (0-terminable)</td><td>The Unique Client Code (UCC) of the person for whom the order is entered. Valid characters: \x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D</td></tr>
<tr><td>717</td><td>CPCode</td><td>N</td><td>12</td><td>142</td><td>Fixed String (0-terminable)</td><td>The Participant code.
Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D.</td></tr>
<tr><td>39030</td><td>Pad3</td><td>N</td><td>3</td><td>154</td><td>Fixed String</td><td>Not Used.</td></tr>
<tr><td colspan="6"><NotAffectedOrdersGrp></td><td>Cardinality: 0-500, Record counter: NoNotAffectedOrders</td></tr>
<tr><td>1371</td><td>>NotAffectedOrderID</td><td>Y</td><td>8</td><td>157</td><td>unsigned int</td><td>Exchange Order ID of an order whose cancellation is pending.</td></tr>
<tr><td>1372</td><td>>NotAffOrigClOrdID</td><td>N</td><td>8</td><td>165</td><td>unsigned int</td><td>Original Client Order ID of an order whose cancellation is pending.</td></tr>
</table>

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5.2.17 New Order Response (Lean Order)-10102

This message confirms a New Order request for a Lean Order.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a ETI message layout. Value: 10102 (ExecutionReport, MsgType = 8)
39020	Pad2	U	2	6	Fixed String	not used
<NRResponseHeaderME>						
5979	RequestTime	Y	8	8	UTCTimestamp	In timestamp; filled always by the gateway
745	Reserve0	U	8	16	UTCTimestamp	not used
21002	Reserve1	Y	8	24	UTCTimestamp	Matching engine in timestamp.
21003	Reserve2	Y	8	32	UTCTimestamp	Matching engine out timestamp.
7765	Reserve3	Y	8	40	UTCTimestamp	Timestamp the gateway receives a message from the Matching Engine
52	SendingTime	Y	8	48	UTCTimestamp	Outgoing delta timestamp; filled always by the gateway
34	MsgSeqNum	Y	4	56	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
893	LastFragment	Y	1	60	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 1 – Description: Last Message
39030	Pad3	U	3	61	Fixed String	not used
<Message Body>						
37	OrderID	Y	8	64	unsigned int	Exchange Order ID generated by the System; it remains constant over the lifetime of an order.
11	ClOrdID	N	8	72	unsigned int	Client Order ID: Unique participant defined order request identifier; used for client order id chaining.
719	PriceMkToLimitPx	N	8	80	PriceType	The price at which the market order got converted into regular limit order.Applicable for OrdType (40) = 5.
48	SecurityID	Y	8	88	signed int	Instrument identifier.
17	ExecID	Y	8	96	UTCTimestamp	Transaction timestamp.

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>39</td><td>OrdStatus</td><td>Y</td><td>1</td><td>104</td><td>char</td><td>Conveys the current status of an order.<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>New</td></tr><tr><td>1</td><td>Partially filled</td></tr><tr><td>2</td><td>Filled</td></tr><tr><td>4</td><td>Cancelled</td></tr><tr><td>7</td><td>RRM Suspended</td></tr><tr><td>8</td><td>SquareOff Suspended</td></tr></table></td></tr>
<tr><td>150</td><td>ExecType</td><td>Y</td><td>1</td><td>105</td><td>char</td><td>The reason why this message was generated.<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>New</td></tr><tr><td>4</td><td>Cancelled</td></tr><tr><td>L</td><td>Triggered</td></tr></table></td></tr>
<tr><td>378</td><td>ExecRestatement-Reason</td><td>Y</td><td>2</td><td>106</td><td>unsigned int</td><td>Code to further qualify the field ExecType (150) of the Execution Report (8) message.<table><tr><th>Value</th><th>Description</th></tr><tr><td>101</td><td>Order add accepted</td></tr><tr><td>105</td><td>IOC Order Cancelled</td></tr><tr><td>212</td><td>Book or Cancel Order accepted</td></tr><tr><td>114</td><td>Order has been changed to IOC</td></tr></table></td></tr>
<tr><td>2523</td><td>CrossedIndicator</td><td>Y</td><td>1</td><td>108</td><td>unsigned int</td><td>Indicates SMP involvement.<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>No crossing (Order not subject to crossing)</td></tr><tr><td>1</td><td>Cross rejected (Order subject to crossing and match prevented)</td></tr></table></td></tr>
</table>

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>1227</td><td>ProductComplex</td><td>Y</td><td>1</td><td>109</td><td>unsigned int</td><td>This field qualifies an instrument type on MCX.

<table><tr><td>Value</td><td>Description</td></tr><tr><td>1</td><td>Simple instrument</td></tr><tr><td>5</td><td>Futures Spread</td></tr></table></td></tr>
<tr><td>1823</td><td>Triggered</td><td>Y</td><td>1</td><td>110</td><td>unsigned int</td><td>Indicates if an order has been previously triggered.

<table><tr><td>Value</td><td>Description</td></tr><tr><td>0</td><td>Not triggered</td></tr><tr><td>1</td><td>Triggered Stop</td></tr><tr><td>2</td><td>Triggered OCO</td></tr></table></td></tr>
<tr><td>25159</td><td>TransactionDelay-Indicator</td><td>Y</td><td>1</td><td>111</td><td>unsigned int</td><td>Indicator for a delayed transaction

<table><tr><td>Value</td><td>Description</td></tr><tr><td>0</td><td>Transaction not delayed</td></tr><tr><td>1</td><td>Transaction delayed</td></tr></table></td></tr>
</table>

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5.2.18 Replace Order Response (Lean Order)-10108

This message confirms a Replace Order request for a Lean Order

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a ETI message layout. Value: 10108 (ExecutionReport, MsgType = 8)
39020	Pad2	U	2	6	Fixed String	not used
<NRResponseHeaderME>						
5979	RequestTime	Y	8	8	UTCTimestamp	In timestamp; filled always by the gateway
745	Reserve0	U	8	16	UTCTimestamp	not used
21002	Reserve1	Y	8	24	UTCTimestamp	Matching engine in timestamp.
21003	Reserve2	Y	8	32	UTCTimestamp	Matching engine out timestamp.
7765	Reserve3	Y	8	40	UTCTimestamp	Timestamp the gateway receives a message from the Matching Engine
52	SendingTime	Y	8	48	UTCTimestamp	Outgoing delta timestamp; filled always by the gateway
34	MsgSeqNum	Y	4	56	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
893	LastFragment	Y	1	60	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 1 – Description: Last Message
39030	Pad3	U	3	61	Fixed String	not used
<Message Body>						
37	OrderID	Y	8	64	unsigned int	Exchange Order ID generated by the System; it remains constant over the lifetime of an order.
11	ClOrdID	N	8	72	unsigned int	Client Order ID: Unique participant defined order request identifier; used for client order id chaining.
41	OrigClOrdID	N	8	80	unsigned int	ClOrdID (11) of the last successfully processed task (request) referring to the specific order.
719	PriceMkToLimitPx	N	8	88	PriceType	The price at which the market order got converted into regular limit or-

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						der.Applicable for OrdType (40) = 5.
48	SecurityID	Y	8	96	signed int	Instrument identifier.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
17	ExecID	Y	8	104	UTCTimestamp	Transaction timestamp.
151	LeavesQty	Y	8	112	Qty	Remaining quantity of an order.
14	CumQty	Y	8	120	Qty	Cumulated executed quantity of an order.
84	CxlQty	Y	8	128	Qty	Total quantity cancelled for this order.
39	OrdStatus	Y	1	136	char	Conveys the current status of an or- der. Value: Description 0: New 1: Partially filled 2: Filled 4: Cancelled 7: RRM Suspended 8: SquareOff Suspended
150	ExecType	Y	1	137	char	The reason why this message was generated. Value: Description 4: Cancelled 5: Replaced L: Triggered
378	ExecRestatement-Reason	Y	2	138	unsigned int	Code to further qualify the field ExecType (150) of the Execution Report (8) message. Value: Description 102: Order modify accepted 105: IOC Order Cancelled 181: Ownership Changed 212: Book or Cancel Order accepted 114: Order has been changed to IOC

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2523	CrossedIndicator	Y	1	140	unsigned int	Indicates SMP involvement. Value: 0 – No crossing (Order not subject to crossing) Value: 1 – Cross rejected (Order subject to crossing and match prevented)

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
1227	ProductComplex	Y	1	141	unsigned int	This field qualifies an instrument type on MCX. Value: 1 – Simple instrument 2 – Standard Option Strategy 3 – Non-Standard Option Strategy 4 – Volatility Strategy 5 – Futures Spread 6 – Inter-Product Spread 7 – Standard Future Strategy 8 – Pack and Bundle 9 – Strip
1823	Triggered	Y	1	142	unsigned int	Indicates if an order has been previously triggered. Value: 0 – Not triggered 1 – Triggered Stop 2 – Triggered OCO
25159	TransactionDelay-Indicator	Y	1	143	unsigned int	Indicator for a delayed transaction. Value: 0 – Transaction not delayed 1 – Transaction delayed

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5.2.19 Cancel Order Response (Lean Order)-10111

This message confirms the cancellation of a Lean Order.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a ETI message layout. Value: 10111 (ExecutionReport, MsgType = 8)
39020	Pad2	U	2	6	Fixed String	not used
<NRResponseHeaderME>						
5979	RequestTime	Y	8	8	UTCTimestamp	In timestamp; filled always by the gateway
745	Reserve0	U	8	16	UTCTimestamp	not used
21002	Reserve1	Y	8	24	UTCTimestamp	Matching engine in timestamp.
21003	Reserve2	Y	8	32	UTCTimestamp	Matching engine out timestamp.
7765	Reserve3	Y	8	40	UTCTimestamp	Timestamp the gateway receives a message from the Matching Engine
52	SendingTime	Y	8	48	UTCTimestamp	Outgoing delta timestamp; filled always by the gateway
34	MsgSeqNum	Y	4	56	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
893	LastFragment	Y	1	60	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 1 – Description: Last Message
39030	Pad3	U	3	61	Fixed String	not used
<Message Body>						
37	OrderID	Y	8	64	unsigned int	Exchange Order ID generated by the System; it remains constant over the lifetime of an order.
11	ClOrdID	N	8	72	unsigned int	Client Order ID: Unique participant defined order request identifier; used for client order id chaining.
41	OrigClOrdID	N	8	80	unsigned int	ClOrdID (11) of the last successfully processed task (request) referring to the specific order.
48	SecurityID	Y	8	88	signed int	Instrument identifier.

<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>17</td><td>ExecID</td><td>Y</td><td>8</td><td>96</td><td>UTCTimestamp</td><td>Transaction timestamp.</td></tr>
<tr><td>14</td><td>CumQty</td><td>Y</td><td>8</td><td>104</td><td>Qty</td><td>Cumulated executed quantity of an order.</td></tr>
<tr><td>84</td><td>CxlQty</td><td>Y</td><td>8</td><td>112</td><td>Qty</td><td>Total quantity cancelled for this order.</td></tr>
<tr><td>39</td><td>OrdStatus</td><td>Y</td><td>1</td><td>120</td><td>char</td><td>Conveys the current status of an order.<table><tr><td>Value</td><td>Description</td></tr><tr><td>4</td><td>Cancelled</td></tr></table></td></tr>
<tr><td>150</td><td>ExecType</td><td>Y</td><td>1</td><td>121</td><td>char</td><td>The reason why this message was generated.<table><tr><td>Value</td><td>Description</td></tr><tr><td>4</td><td>Cancelled</td></tr></table></td></tr>
<tr><td>378</td><td>ExecRestatement-Reason</td><td>Y</td><td>2</td><td>122</td><td>unsigned int</td><td>Code to further qualify the field ExecType (150) of the Execution Report (8) message.<table><tr><td>Value</td><td>Description</td></tr><tr><td>103</td><td>Order delete accepted</td></tr><tr><td>197</td><td>Pending order deletion</td></tr></table></td></tr>
<tr><td>1227</td><td>ProductComplex</td><td>Y</td><td>1</td><td>124</td><td>unsigned int</td><td>This field qualifies an instrument type on MCX<table><tr><td>Value</td><td>Description</td></tr><tr><td>1</td><td>Simple instrument</td></tr><tr><td>2</td><td>Standard Option Strategy</td></tr><tr><td>3</td><td>Non-Standard Option Strategy</td></tr><tr><td>4</td><td>Volatility Strategy</td></tr><tr><td>5</td><td>Futures Spread</td></tr><tr><td>6</td><td>Inter-Product Spread</td></tr><tr><td>7</td><td>Standard Future Strategy</td></tr><tr><td>8</td><td>Pack and Bundle</td></tr><tr><td>9</td><td>Strip</td></tr></table>.</td></tr>
</table>

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25159	TransactionDelay-Indicator	Y	1	125	unsigned int	Indicator for a delayed transaction Value: 0 – Transaction not delayed; 1 – Transaction delayed
39020	Pad2	U	2	126	Fixed String	not used

5.3 Multileg order Handling

5.3.1 New Order Complex-10113

The New Order Multi Leg message is provided to submit orders for securities that are made up of multiple securities, known as “legs”. This message is sent to the service “Order and Quote Management”.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderIn>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10113 (NewOrderMultileg, MsgType = AB)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used
39020	Pad2	U	2	14	Fixed String	not used
<RequestHeader>						
34	MsgSeqNum	Y	4	16	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
50	SenderSubID	Y	4	20	unsigned int	User ID.
<MessageBody>						
11	ClOrdID	N	8	24	unsigned int	Client Order ID: Unique participant defined order request identifier; used for client order id chaining.
48	SecurityID	Y	8	32	signed int	Instrument identifier. -The U/L Asset / producer Identifier is specified by Exchange for permitted U/L Asset / products for trading
731	MaxPricePercentage	N	8	40	PriceType	Price per unit of quantity (e.g. per share) In Case of Limit Price, No Value is required to be send.

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>708</td><td>TerminalInfo</td><td>Y</td><td>8</td><td>48</td><td>unsigned int</td><td>Total 15 Characters
For 1st- 12 characters value(11111111111-33333333333),
For 13th character value(0-3)
14th – 15th digit should be valid vendor code / in House CTCL code for member
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>11111111111</td><td>IBT</td></tr>
<tr><td>22222222222</td><td>DMA</td></tr>
<tr><td>33333333333</td><td>Wireless Technology</td></tr>
<tr><td>0</td><td>Order not generated through Program trading software</td></tr>
<tr><td>1</td><td>Order generated through Program trading software</td></tr>
<tr><td>2</td><td>Smart Order Rout-ing without Program trading software</td></tr>
<tr><td>3</td><td>Smart Order Routing with program trading software</td></tr>
</table></td></tr>
<tr><td>44</td><td>Price</td><td>N</td><td>8</td><td>56</td><td>PriceType</td><td>Limit price. Required if OrdType (40) is Limit (2) or Stop Limit (4).</td></tr>
<tr><td>709</td><td>Filler1</td><td>N</td><td>8</td><td>64</td><td>unsigned int</td><td>Not Used.</td></tr>
<tr><td>710</td><td>Filler2</td><td>N</td><td>4</td><td>72</td><td>unsigned int</td><td>Not Used.</td></tr>
<tr><td>711</td><td>Echo</td><td>Y</td><td>4</td><td>76</td><td>signed int</td><td>User defined free field. The field is echoed in the trade notifications, lis-tener data, session data.</td></tr>
<tr><td>38</td><td>OrderQty</td><td>Y</td><td>8</td><td>80</td><td>Qty</td><td>Total Order Quantity.</td></tr>
<tr><td>732</td><td>DisclosedQty</td><td>N</td><td>8</td><td>88</td><td>Qty</td><td>The quantity to be made visible in the market data.DisclosedQty is set to 0 in case full qty needs to be disclosed.</td></tr>
<tr><td>727</td><td>StrategyID</td><td>Y</td><td>8</td><td>96</td><td>unsigned int</td><td>Strategy Approved by the exchange should be used.Range being from 0 to 99999</td></tr>
<tr><td>728</td><td>StrategySequence-Number</td><td>Y</td><td>8</td><td>104</td><td>unsigned int</td><td>Strategy Sequence numbers</td></tr>
<tr><td>1300</td><td>MarketSegmentID</td><td>Y</td><td>4</td><td>112</td><td>signed int</td><td>Product identifier.</td></tr>
<tr><td>432</td><td>ExpireDate</td><td>N</td><td>4</td><td>116</td><td>LocalMktDate</td><td>Not Used</td></tr>
</table>

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
712	RegulatoryID	N	4	120	unsigned int	Not Used
713	Filler4	N	2	124	unsigned int	Not Used.
20096	PartyIDTakeUp-TradingFirm	N	5	126	Fixed String	Not Used
20013	PartyIDOrder-OriginationFirm	N	7	131	Fixed String	Not Used
20032	PartyIDBeneficiary	N	9	138	Fixed String	Not Used
714	AccountType	Y	1	147	unsigned int	Value: 1 Own; 3 Client; 5 Institution
28703	ApplSeqIndicator	Y	1	148	unsigned int	Value: 0 No Recovery Required; 1 Standard Order
1227	ProductComplex	Y	1	149	unsigned int	This field qualifies an instrument type on MCX. Value: 5 Futures Spread; 1 Simple Instrument
54	Side	Y	1	150	unsigned int	Side of the order. Value: 1 Buy; 2 Sell
40	OrdType	Y	1	151	unsigned int	Order type. Value: 2 Limit; 5 Market To Limit
28710	PriceValidityCheck-Type	Y	1	152	unsigned int	Not Used. Value: 0 None

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>18</td><td>ExecInst</td><td>Y</td><td>1</td><td>153</td><td>unsigned int</td><td>Instructions for order handling on exchange trading floor. If more than one instruction is applicable to an order, this field can contain multiple 137nstruct- tions separated by space.<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Persistent Order(FIX value-H)</td></tr><tr><td>2</td><td>Non-Persistent Order(FIX value-Q)</td></tr></table></td></tr>
<tr><td>59</td><td>TimeInForce</td><td>Y</td><td>1</td><td>154</td><td>unsigned int</td><td>Execution and trading restriction parameters supported by MCX.<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>Day (DAY)</td></tr><tr><td>3</td><td>Immediate or Cancel (IOC)</td></tr><tr><td>7</td><td>Session (EOS)</td></tr></table></td></tr>
<tr><td>715</td><td>SMPFOrderIdentifier</td><td>Y</td><td>1</td><td>155</td><td>unsigned int</td><td><table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>Passive</td></tr><tr><td>1</td><td>Active</td></tr></table></td></tr>
<tr><td>716</td><td>Filler5</td><td>N</td><td>1</td><td>156</td><td>unsigned int</td><td>Not Used.</td></tr>
<tr><td>1815</td><td>TradingCapacity</td><td>Y</td><td>1</td><td>157</td><td>unsigned int</td><td>This field designates if the trader is acting in the capacity of agent, trading for its own account or acting as a market maker.<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Customer (Agency)</td></tr></table></td></tr>
<tr><td>20075</td><td>PartyIDLocationID</td><td>N</td><td>2</td><td>158</td><td>Fixed String (0-terminable)</td><td>Not Used.</td></tr>
</table>

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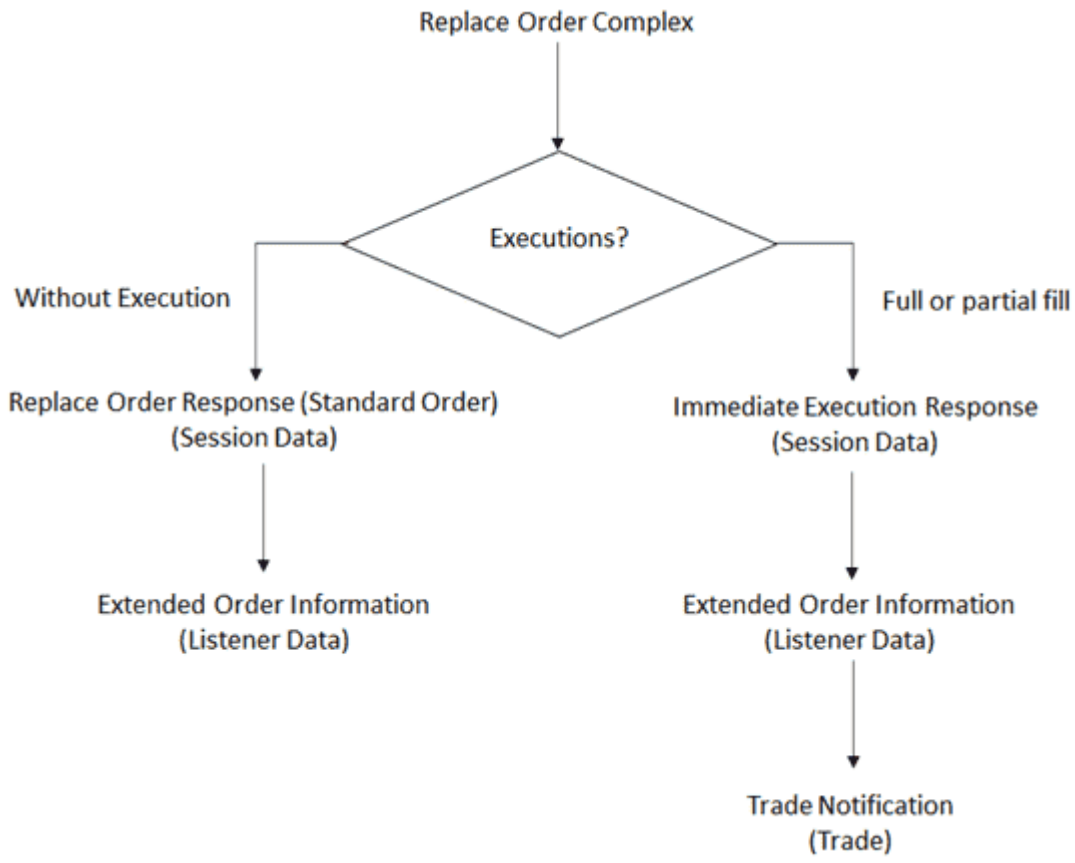
Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
718	UserReferenceText	N	20	160	Fixed String (0-terminable)	Upto 15 Char allowed.This field is used to provide additional regulatory information(according to respective rules andregs, circulars and/or bilateral coordination between participantand Trading Surveillance Office).Valid characters: \x20, \x22-\x7B, \x7D, \x7E. Valid characters: \x20, \x22-\x7B, \x7D, \x7E
1031	CustOrderHandling-Inst	N	1	180	Fixed String	not used. Valid characters: \x20, \x22-\x7B, \x7D, \x7E
25007	FreeText1	Y	12	181	Fixed String (0-terminable)	The Unique Client Code (UCC) of the person for whom the order is entered. Valid characters: \x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D
717	CPCode	N	12	193	Fixed String (0-terminable)	The Participant code. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D.
25009	FreeText3	N	12	205	Fixed String	Free-format text field for traderspecific or customer-related comments. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D
555	NoLegs	Y	1	217	Counter	Number of LegOrd repeating group instances.
39060	Pad6	N	6	218	Fixed String	Not Used.
<LegOrdGrp>						Cardinality: 0-20, Record counter: NoLegs
2680	>LegAccount	N	2	224	Fixed String (0-terminable)	Leg-specific account to book trades and keep positions on. Valid characters: 1-9, \x41, \x47, \x4D, \x50

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<table>
<tr><td>564</td><td>>LegPositionEffect</td><td>Y</td><td>1</td><td>226</td><td>char</td><td>Leg-specific field used for MCX position management purposes and indicates whether the leg is submitted to open or close a position.
<table><tr><td>Value</td><td>Description</td></tr><tr><td>C</td><td>Close</td></tr><tr><td>O</td><td>Open</td></tr></table></td></tr>
<tr><td>39050</td><td>>Pad5</td><td>N</td><td>5</td><td>227</td><td>Fixed String</td><td>Not Used.</td></tr>
</table>

5.3.2 Replace Order Complex-10114

This message is used to replace a multi leg order (previously submitted using the New Order Multi Leg(Complex) message).



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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
	<MessageHeaderIn>					
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10114 (MultilegOrderCancelReplace, MsgType = AC)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used
39020	Pad2	U	2	14	Fixed String	not used
	<RequestHeader>					
34	MsgSeqNum	Y	4	16	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
50	SenderSubID	Y	4	20	unsigned int	User ID.
	<MessageBody>					
37	OrderID	N	8	24	unsigned int	Exchange Order ID generated by the MCX System; it remains constant over the lifetime of an order.
11	ClOrdID	N	8	32	unsigned int	Client Order ID: Unique participant defined order request identifier; used for client order id chaining. ClOrdID should be mention in NewOrderSingle and same value can be passed in ClOrdID as well as OrigClOrdID.
41	OrigClOrdID	N	8	40	unsigned int	ClOrdID (11) of the last successfully processed task (request) referring to the specific order.
48	SecurityID	Y	8	48	signed int	Instrument identifier.
44	Price	Y	8	56	PriceType	Limit price. Required if OrdType (40) is Limit (2) or Stop Limit (4).
731	MaxPricePercentage	N	8	64	PriceType	Price per unit of quantity (e.g. per share) In Case of Limit Price, No Value is required to be send.

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>708</td><td>TerminalInfo</td><td>Y</td><td>8</td><td>72</td><td>unsigned int</td><td>Total 15 Characters
For 1st- 12 characters value(11111111111-33333333333),
For 13th character value(0-3)
14th – 15th digit should be valid vendor code / in House CTCL code for member
<table><tr><th>Value</th><th>Description</th></tr><tr><td>11111111111</td><td>IBT</td></tr><tr><td>22222222222</td><td>DMA</td></tr><tr><td>33333333333</td><td>Wireless Technology</td></tr><tr><td>0</td><td>Order not generated through Program trading software</td></tr><tr><td>1</td><td>Order generated through Program trading software</td></tr><tr><td>2</td><td>Smart Order Rout-ing without Program trading software</td></tr><tr><td>3</td><td>Smart Order Routing with program trading software</td></tr></table></td></tr>
<tr><td>723</td><td>LstUpdtTime</td><td>Y</td><td>8</td><td>80</td><td>UTCTimestamp</td><td>Last Updated timestamp for that or-der</td></tr>
<tr><td>709</td><td>Filler1</td><td>N</td><td>8</td><td>88</td><td>unsigned int</td><td>Not Used.</td></tr>
<tr><td>710</td><td>Filler2</td><td>N</td><td>4</td><td>96</td><td>unsigned int</td><td>Not Used.</td></tr>
<tr><td>1300</td><td>MarketSegmentID</td><td>Y</td><td>4</td><td>100</td><td>signed int</td><td>Product identifier.</td></tr>
<tr><td>38</td><td>OrderQty</td><td>Y</td><td>8</td><td>104</td><td>Qty</td><td>Total Order Quantity.</td></tr>
<tr><td>732</td><td>DisclosedQty</td><td>N</td><td>8</td><td>112</td><td>Qty</td><td>The quantity to be made visible in the market data.DisclosedQty is set to 0 in case full qty needs to be disclosed.</td></tr>
<tr><td>727</td><td>StrategyID</td><td>Y</td><td>8</td><td>120</td><td>unsigned int</td><td>Strategy Approved by the exchange should be used.Range being from 0 to 99999</td></tr>
<tr><td>728</td><td>StrategySequence-Number</td><td>Y</td><td>8</td><td>128</td><td>unsigned int</td><td>Strategy Sequence numbers</td></tr>
<tr><td>711</td><td>Echo</td><td>N</td><td>4</td><td>136</td><td>signed int</td><td>Vendors can use this as a reference in response from exchange</td></tr>
<tr><td>432</td><td>ExpireDate</td><td>N</td><td>4</td><td>140</td><td>LocalMktDate</td><td>Not used.</td></tr>
</table>

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
20655	TargetPartyIDSession-ID	N	4	144	unsigned int	Session ID.
712	RegulatoryID	N	4	148	unsigned int	For participants to uniquely identify trading startegies
713	Filler4	N	2	152	unsigned int	Not Used.
20096	PartyIDTakeUp-TradingFirm	N	5	154	Fixed String	Not Used.
20013	PartyIDOrder-OriginationFirm	N	7	159	Fixed String	Not used.
20032	PartyIDBeneficiary	N	9	166	Fixed String	Not Used.
714	AccountType	Y	1	175	unsigned int	Value: Description 1: Own 3: Client 5: Institution
28703	ApplSeqIndicator	Y	1	176	unsigned int	Value: Description 0: No Recovery Required 1: Standard Order
1227	ProductComplex	Y	1	177	unsigned int	This field qualifies an instrument type on MCX. Value: Description 5: Futures Spread 1: Simple Instrument.
54	Side	Y	1	178	unsigned int	Side of the order. Value: Description 1: Buy 2: Sell
40	OrdType	Y	1	179	unsigned int	Order type. Value: Description 2: Limit
28710	PriceValidityCheck-Type	Y	1	180	unsigned int	Not Used. Value: Description 0: None

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>18</td><td>ExecInst</td><td>Y</td><td>1</td><td>181</td><td>unsigned int</td><td>Instructions for order handling on exchange trading floor. If more than one instruction is applicable to an order, this field can contain multiple 143nstruct- tions separated by space.

<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Persistent Order(FIX value-H)</td></tr><tr><td>2</td><td>Non-Persistent Order(FIX value-Q)</td></tr></table></td></tr>
<tr><td>59</td><td>TimeInForce</td><td>Y</td><td>1</td><td>182</td><td>unsigned int</td><td>Execution and trading restriction parameters supported by MCX.

<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>Day (DAY)</td></tr><tr><td>3</td><td>Immediate or Cancel (IOC)</td></tr><tr><td>7</td><td>Session (EOS)</td></tr></table></td></tr>
<tr><td>716</td><td>Filler5</td><td>N</td><td>1</td><td>183</td><td>unsigned int</td><td>Not Used.</td></tr>
<tr><td>1815</td><td>TradingCapacity</td><td>Y</td><td>1</td><td>184</td><td>unsigned int</td><td>Not used, Must be sent as 1</td></tr>
<tr><td>750</td><td>Filler6</td><td>N</td><td>1</td><td>185</td><td>char</td><td>not used</td></tr>
<tr><td>20075</td><td>PartyIDLocationID</td><td>N</td><td>2</td><td>186</td><td>Fixed String (0-terminable)</td><td>Not Used.</td></tr>
<tr><td>1031</td><td>CustOrderHandling-Inst</td><td>N</td><td>1</td><td>188</td><td>Fixed String</td><td>not used.
Valid characters: \x20, \x22-\x7B, \x7D, \x7E</td></tr>
<tr><td>718</td><td>UserReferenceText</td><td>N</td><td>20</td><td>189</td><td>Fixed String (0-terminable)</td><td>Upto 15 Char allowed.This field is used to provide additional regulatory information(according to respective rules andregs, circulars and/or bilateral coordination between participantand Trading Surveillance Office).Valid characters: \x20, \x22-\x7B, \x7D, \x7E.
Valid characters: \x20, \x22-\x7B, \x7D, \x7E</td></tr>
</table>

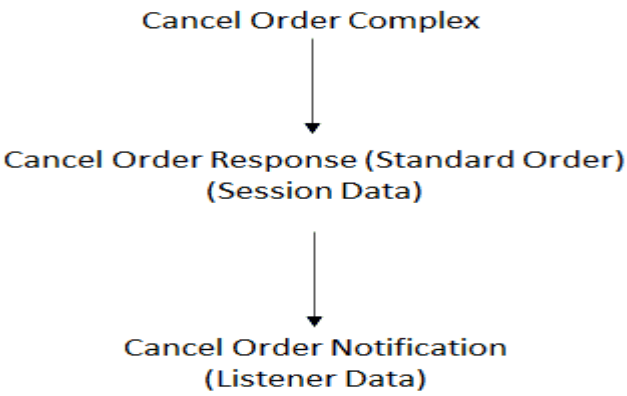
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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
25007	FreeText1	Y	12	209	Fixed String (0-terminable)	The Unique Client Code (UCC) of the person for whom the order is entered. Valid characters: \x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D
717	CPCode	N	12	221	Fixed String (0-terminable)	The Participant code. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D.
25009	FreeText3	N	12	233	Fixed String	Free-format text field for traderspecific or customer-related comments. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D
555	NoLegs	Y	1	245	Counter	Number of LegOrd repeating group instances.Must be greater than 1.
39020	Pad2	N	2	246	Fixed String	Not Used.
<LegOrdGrp>						Cardinality: 0-20, Record counter: NoLegs
2680	>LegAccount	N	2	248	Fixed String (0-terminable)	Leg-specific account to book trades and keep positions on. Valid characters: 1-9, \x41, \x47, \x4D, \x50
564	>LegPositionEffect	Y	1	250	char	not used, Must be set as C Valid characters: \x01-\x7E
39050	>Pad5	N	5	251	Fixed String	Not Used.

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5.3.3 Cancel Order complex-10123

This message is used to cancel a multi leg order. This message is sent to the service “Order and Quote Management”.



Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderIn>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10123 (OrderCancelRequest, MsgType = F)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used
39020	Pad2	U	2	14	Fixed String	not used
<RequestHeader>						
34	MsgSeqNum	Y	4	16	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
50	SenderSubID	Y	4	20	unsigned int	User ID.
<MessageBody>						
37	OrderID	N	8	24	unsigned int	Exchange Order ID generated by the MCX System; it remains constant over the lifetime of an order.
11	ClOrdID	N	8	32	unsigned int	Client Order ID: Unique participant defined order request identifier; used for client order id chaining. ClOrdID should be mention in NewOrderSingle and same value can be passed in ClOrdID as well as OrigClOrdID.
41	OrigClOrdID	N	8	40	unsigned int	ClOrdID (11) of the last successfully processed task (request) referring to the specific order.
48	SecurityID	Y	8	48	signed int	Instrument identifier. – The U/L Asset / producer Identifier is specified by

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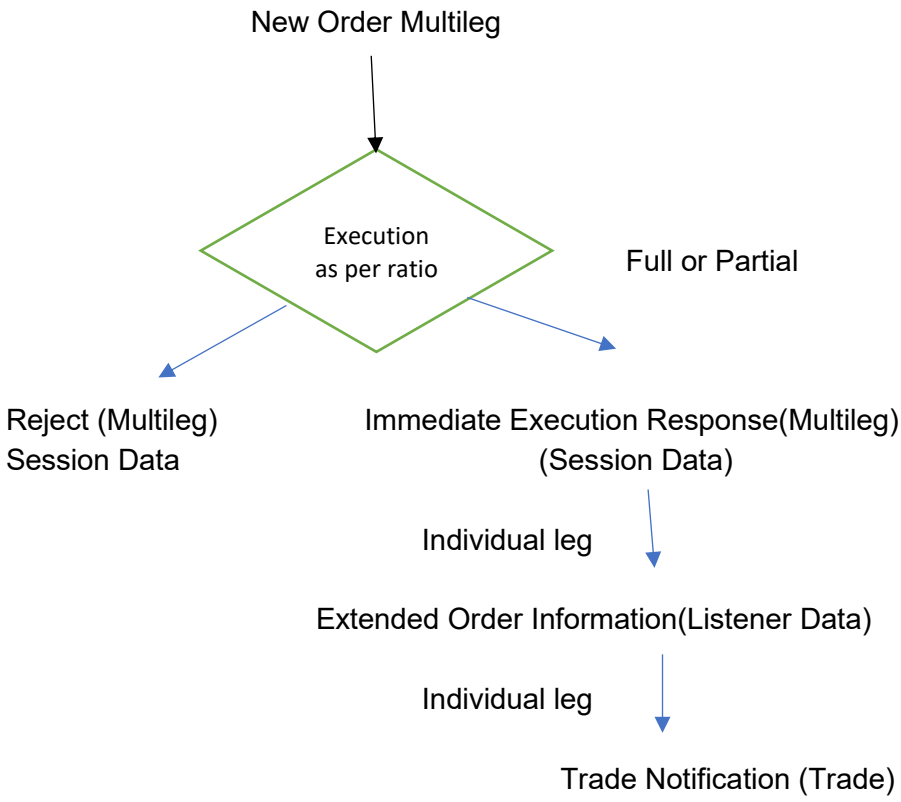
						Exchange for permitted U/L Asset / products for trading
723	LstUpdtTime	N	8	56	UTCTimestamp	Last Updated timestamp for that order
711	Echo	Y	4	64	signed int	Vendors can use this as a reference in response from exchange
1300	MarketSegmentID	Y	4	68	signed int	Product identifier.
20655	TargetPartyIDSession-ID	N	4	72	unsigned int	Session ID.
712	RegulatoryID	N	4	76	unsigned int	For participants to uniquely identify trading startegies

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
727	StrategyID	Y	8	80	unsigned int	Strategy Approved by the exchange should be used.Range being from 0 to 99999
728	StrategySequence-Number	Y	8	88	unsigned int	Strategy Sequence numbers

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5.3.4 New Order MultiLeg-10991

The New Order Multileg message is used by the participant to submit an order for multiple securities. In essence, multileg orders are IOC (Immediate or cancel) orders. This means that all the legs must execute for the order to be successfully executed. If anyone of the legs in the order fails to execute, then all the remaining orders automatically get canceled. Each leg's side is independent of one another i.e all leg can be Buy or all leg can be sell or in any combination. Each leg may belong to different U/L Asset , but instrument identifiers in individual legs of the same Multi leg order should be within the same capacity group as provided in Instrument Master (MCXScrips.bcp) file; else the order would be rejected by the exchange. Any of the leg should not be Auction or Spread Instrument. Each leg should have individual price and qty and order type. If MultiLegType is selected as Spread, then both the legs shoud belong to same underlying for calender spread position.



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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderIn>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a ETI message layout. Value: 10991 (OrderMassActionReport, MsgType = BZ)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used
39020	Pad2	U	2	14	Fixed String	not used
<RequestHeader>						
34	MsgSeqNum	Y	4	16	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
50	SenderSubID	Y	4	20	unsigned int	User ID.
<MessageBody>						

Confidential

<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>708</td><td>TerminalInfo</td><td>Y</td><td>8</td><td>24</td><td>unsigned int</td><td>Total 15 Characters
For 1st- 12 characters value(11111111111-33333333333),
For 13th character value(0-3)
14th – 15th digit should be valid vendor code / in House CTCL code for member
<table><tr><th>Value</th><th>Description</th></tr><tr><td>11111111111</td><td>IBT</td></tr><tr><td>22222222222</td><td>DMA</td></tr><tr><td>33333333333</td><td>Wireless Technology</td></tr><tr><td>0</td><td>Order not generated through Program trading software</td></tr><tr><td>1</td><td>Order generated through Program trading software</td></tr><tr><td>2</td><td>Smart Order Rout-ing without Program trading software</td></tr><tr><td>3</td><td>Smart Order Routing with program trading software</td></tr></table></td></tr>
<tr><td>11</td><td>ClOrdID</td><td>N</td><td>8</td><td>32</td><td>unsigned int</td><td>Client OrderID: Unique participant defined order request identifier; used for client order id chaining.</td></tr>
<tr><td>727</td><td>StrategyID</td><td>Y</td><td>8</td><td>40</td><td>unsigned int</td><td>Strategy Approved by the exchange should be used.Range being from 0 to 99999</td></tr>
<tr><td>728</td><td>StrategySequence-Number</td><td>Y</td><td>8</td><td>48</td><td>unsigned int</td><td>Strategy Sequence numbers</td></tr>
<tr><td>714</td><td>AccountType</td><td>Y</td><td>1</td><td>56</td><td>unsigned int</td><td><table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Own</td></tr><tr><td>3</td><td>Client</td></tr><tr><td>5</td><td>Institution</td></tr></table></td></tr>
<tr><td>769</td><td>NoOfMultiLeg</td><td>Y</td><td>1</td><td>57</td><td>Counter</td><td>Number of MultiLegOrdGrp repeating group instances.</td></tr>
</table>

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715	SMPFOrderIdentifier	Y	1	58	unsigned int	0-Passive 1-Active
770	MultiLegType	Y	1	59	unsigned int	Spread – 0, Multi Leg Order – 1
768	AllOrNoneFlag	N	1	60	char	N- Full or parial execution only
28703	ApplSeqIndictaor	Y	1	61	unsigned int	0- No Recovery Required 1- Standard Order
18	ExecInst	Y	1	62	unsigned int	1-Persistent Order(H) 2-Non-Persistent Order(Q)
25007	FreeText1	Y	12	63	Fixed String (0-terminable)	The Unique Client Code (UCC) of the person for whom the order is entered. Valid characters: \x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D
717	CPCode	N	12	75	Fixed String (0-terminable)	The Participant code. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D.

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
718	UserReferenceText	N	20	87	Fixed String (0-terminable)	Upto 15 Char allowed.This field is used to provide additional regulatory information(according to respective rules andregs, circulars and/or bilateral coordination between participantand Trading Surveillance Office).Valid characters: \x20, \x22-\x7B, \x7D, \x7E.
25009	FreeText3	N	12	107	Fixed String	Free-format text field for traderspecific or customer-related comments. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D
39030	Pad1	N	1	119	Fixed String	Not Used.
<MultiLegOrdGrp>						Cardinality: 0-254, Record counter: NoOfMultiLeg
743	>InstrumentIdentifier	Y	8	120	unsigned int	The U/L Asset / producer Identifier is specified by Exchange for permitted U/L Asset / products for trading
44	>Price	N	8	128	PriceType	Limit price. Required if OrdType (40) is Limit (2) or Stop Limit (4).
731	>MaxPricePercentage	N	8	136	PriceType	Price per unit of quantity (e.g. per share) In Case of Limit Price, No Value is required to be send.
711	>Echo	Y	4	144	signed int	Vendors can use this as a reference in response from exchange
1300	>MarketSegmentID	N	4	148	signed int	Product identifier.
38	>OrderQty	Y	8	152	Qty	Total Order Quantity.
1227	>ProductComplex	N	1	160	unsigned int	This field qualifies an instrument type on MCX.
54	>Side	Y	1	161	unsigned int	Side of the order. 1-Buy 2-sell

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
40	>OrdType	Y	1	162	unsigned int	Order type. 2-limit. 5-Market to limit.
39050	>Pad5	N	5	163	Fixed String	Not Used.

5.3.5 Immediate Execution Response-10993

This message informs about the immediate execution of an incoming multileg order.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10993 (OrderMassActionReport, MsgType = BZ)
39020	Pad2	U	2	6	Fixed String	not used
<ResponseHeaderME>						
5979	RequestTime	Y	8	8	UTCTimestamp	Time when request was considered for processing
745	Reserve0	N	8	16	UTCTimestamp	Not used.
21002	Reserve1	Y	8	24	UTCTimestamp	Not used.
21003	Reserve2	Y	8	32	UTCTimestamp	Not used
7765	Reserve3	Y	8	40	UTCTimestamp	Not used.
52	SendingTime	Y	8	48	UTCTimestamp	Gateway response out timestamp.
34	MsgSeqNum	Y	4	56	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
5948	PartitionID	Y	2	60	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.
1180	ApplID	Y	1	62	unsigned int	Identifier for an ETI data stream. Value: 4 – Description: Session Data
28704	ApplMsgID	Y	16	63	data	Application message identifier assigned to an order or quote event.
893	LastFragment	Y	1	79	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 0 – Description: Not Last Message

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						1 Last Message
	<MessageBody>					
11	ClOrdID	N	8	80	unsigned int	Client Order ID: Unique participant defined order request identifier; used for client order id chaining.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
17	ExecID	Y	8	88	UTCTimestamp	Transaction timestamp.
727	StrategyID	Y	8	96	unsigned int	Strategy Approved by the exchange should be used.Range being from 0 to 99999
728	StrategySequence-Number	Y	8	104	unsigned int	Strategy Sequence numbers
30555	NoLegExecs	Y	2	112	Counter	Number of InstrmntLegExec repeating group instances.Applicable only in case of spread instruments.
769	NoOfMultiLeg	Y	1	114	Counter	Number of MultiLegExecGrp repeating group instances
772	NoOfMultiLegExecs	Y	1	115	Counter	Number of MultiLegFillGrp repeating group instances.
770	MultiLegType	Y	1	116	unsigned int	Spread – 0, Multi Leg Order – 1
39030	Pad3	N	3	117	Fixed String	Not Used.
<MultiLegExecGrp>						Cardinality: 0-254, Record counter: NoOfMultiLeg
37	>OrderID	Y	8	120	unsigned int	Exchange Order ID generated by the MCX System; it remains constant over the lifetime of an order.
743	>InstrumentIdentifier	Y	8	128	unsigned int	The U/L Asset / producer Identifier is specified by Exchange for permitted U/L Asset / products for trading
14	>CumQty	Y	8	136	Qty	Cumulated executed quantity of an order.
84	>CxlQty	Y	8	144	Qty	Total quantity cancelled for this order.
378	>ExecRestatement-Reason	Y	2	152	unsigned int	Code to further qualify the field ExecType (150) of the Execution Report (8) message. Valid values are listed after this table.

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
39	>OrdStatus	Y	1	128	char	Conveys the current status of an order. Value: Description 0: New 1: Partially filled 2: Filled 4: Cancelled
150	>ExecType	Y	1	155	char	The reason why this message was generated. Value: Description 4: Cancelled F: Trade
39040	>Pad4	N	4	156	Fixed String	Not Used.
<InstrmntLegExecGrp>						Cardinality: 0-600, Record counter: NoLegExecs
602	>LegSecurityID	Y	8	0	signed int	Instrument identifier of the leg security.
637	>LegLastPx	Y	8	8	PriceType	Price of this leg fill.
1418	>LegLastQty	Y	8	16	Qty	Quantity executed in this leg fill.
1893	>LegExecID	Y	4	24	signed int	Private identifier of a leg match step, which can be reconciled with the field SideTradeID (1506) in the Trade Notification.
624	>LegSide	Y	1	28	unsigned int	The side of the individual leg of a strategy as defined in its signature. Value: Description 1: Buy 2: Sell
2421	>FillRefID	Y	1	29	unsigned int	Reference to the corresponding FillsGrp repeating group instance.
39020	>Pad2	N	2	30	Fixed String	Not Used.

Valid Values of ExecRestatementReason (datatype ExecRestatementReason)

Valid Value	Description
1	Order book restatement
101	Order add accepted
102	Order modify accepted
103	Order delete accepted
105	IOC Order Cancelled

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108	Book Order executed
114	Order has been changed to IOC
135	Market Order triggered and executed
145	Start Of Day Processing
146	End Of Day Processing
155	Order Refreshed
172	Stop Order has been triggered
215	Risk Reduction Timer Expired
217	Tick Size Change
248	Active order deletion due to SMPF
250	Active order modification due to SMPF
252	Passive order deletion due to SMPF
254	Passive oder modification due to SMPF
261	Panic Cancel
302	RRMIN
303	SQUAREOFFIN
357	Base Price Update
358	Order Deleted As Price Moved Out Of DPL Range

5.3.6 Extended Order Information-10994

This message format is used for re-transmission of multi-leg execution response, within the session data.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10994 (OrderMassActionReport, MsgType = BZ)
39020	Pad2	U	2	6	Fixed String	not used
<RBCHeaderME>						
21003	Reserve2	N	8	8	UTCTimestamp	Not Used.
52	SendingTime	Y	8	16	UTCTimestamp	Gateway response out timestamp.
28727	ApplSubID	Y	4	24	unsigned int	Unique ID assigned by the MCX system during broadcast subscription in order to link broadcasts to the related subscription.
5948	PartitionID	Y	2	28	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.
28704	ApplMsgID	Y	16	30	data	Application message identifier assigned to an order or quote event.

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1180	ApplID	Y	1	46	unsigned int	Identifier for an ETI data stream. Value: 4 – Session Data; 5 – Listener Data
1352	ApplResendFlag	Y	1	47	unsigned int	Indicates a retransmission message. Value: 0 – False; 1 – True
893	LastFragment	Y	1	48	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 0 – Not Last Message; 1 – Last Message
39070	Pad7	N	7	49	Fixed String	Not Used.
<Message Body>						

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>708</td><td>TerminalInfo</td><td>Y</td><td>8</td><td>56</td><td>unsigned int</td><td>Total 15 Characters
For 1st- 12 characters value(11111111111-33333333333),
For 13th character value(0-3)
14th – 15th digit should be valid vendor code / in House CTCL code for member.
<table><tr><th>Value</th><th>Description</th></tr><tr><td>11111111111</td><td>IBT</td></tr><tr><td>22222222222</td><td>DMA</td></tr><tr><td>33333333333</td><td>Wireless Technology</td></tr><tr><td>0</td><td>Order not generated through Program trading software</td></tr><tr><td>1</td><td>Order generated through Program trading software</td></tr><tr><td>2</td><td>Smart Order Routing without Program trading software</td></tr><tr><td>3</td><td>Smart Order Routing with program trading software</td></tr></table></td></tr>
<tr><td>11</td><td>ClOrdID</td><td>N</td><td>8</td><td>64</td><td>unsigned int</td><td>Client Order ID: Unique participant defined order request identifier; used for client order id chaining.</td></tr>
<tr><td>17</td><td>ExecID</td><td>Y</td><td>8</td><td>72</td><td>UTCTimestamp</td><td>Transaction timestamp.</td></tr>
<tr><td>727</td><td>StrategyID</td><td>Y</td><td>8</td><td>80</td><td>unsigned int</td><td>Strategy Approved by the exchange should be used.Range being from 0 to 99999</td></tr>
<tr><td>728</td><td>StrategySequence-Number</td><td>Y</td><td>8</td><td>88</td><td>unsigned int</td><td>Strategy Sequence numbers</td></tr>
<tr><td>30555</td><td>NoLegExecs</td><td>Y</td><td>2</td><td>96</td><td>Counter</td><td>Number of InstrmntLegExec repeating group instances.</td></tr>
<tr><td>714</td><td>AccountType</td><td>Y</td><td>1</td><td>98</td><td>unsigned int</td><td><table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Own</td></tr><tr><td>3</td><td>Client</td></tr><tr><td>5</td><td>Institution</td></tr></table></td></tr>
<tr><td>769</td><td>NoOfMultiLeg</td><td>Y</td><td>1</td><td>99</td><td>Counter</td><td>Number of MultiLegExecGrp repeating group instances.</td></tr>
</table>

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
772	NoOfMultiLegExecs	Y	1	100	Counter	Number of MultiLegFillGrp repeating group instances.
25007	FreeText1	Y	12	101	Fixed String (0-terminable)	The Unique Client Code (UCC) of the person for whom the order is entered. Valid characters: \x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D
718	UserReferenceText	N	20	113	Fixed String (0-terminable)	Upto 15 Char allowed.This field is used to provide additional regulatory information(according to respective rules andregs, circulars and/or bilateral coordination between participantand Trading Surveillance Office).Valid characters: \x20, \x22-\x7B, \x7D, \x7E.
717	CPCode	N	12	133	Fixed String (0-terminable)	The Participant code. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D.
770	MultiLegType	Y	1	145	unsigned int	Spread – 0, Multi Leg Order – 1
25009	FreeText3	N	12	146	Fixed String	Free-format text field for traderspecific or customer-related comments. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D
39020	Pad2	N	2	158	Fixed String	Not Used.
<MultiLegGrp>						Cardinality: 0-254, Record counter: NoOfMultiLeg

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
743	>InstrumentIdentifier	Y	8	160	unsigned int	
37	>OrderID	Y	8	168	unsigned int	Exchange Order ID generated by the T7 System; it remains constant over the lifetime of an order.
44	>Price	N	8	176	PriceType	Limit price. Required if OrdType (40) is Limit (2) or Stop Limit (4).
731	>MaxPricePercentage	N	8	184	PriceType	Price per unit of quantity (e.g. per share)
711	>Echo	Y	4	192	signed int	
39040	>Pad4	U	4	196	Fixed String	not used
38	>OrderQty	Y	8	200	Qty	Total Order Quantity.
14	>CumQty	Y	8	208	Qty	Cumulated executed quantity of an order.
84	>CxlQty	Y	8	216	Qty	Total quantity cancelled for this order.
378	>ExecRestatement-Reason	Y	2	224	unsigned int	Code to further qualify the field ExecType (150) of the Execution Report (8) message. Value: Description 101: Order add accepted 105: IOC Order Cancelled 201: Self Trade Order Deleted
39	>OrdStatus	Y	1	226	char	Conveys the current status of an order. Value: Description 4: Cancelled 2: Filled
150	>ExecType	Y	1	227	char	The reason why this message was generated. Value: Description 4: Cancelled F: Trade
54	>Side	Y	1	228	unsigned int	Side of the order. Value: Description 1: Buy 2: Sell

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
40	>OrdType	Y	1	229	unsigned int	Order type. Value: 2 = Limit; 5 = Market To Limit
39020	>Pad2	N	2	230	Fixed String	Not used.
<MultiLegFillGrp>						Cardinality: 0-254, Record counter: NoOfMultiLegExecs
1364	>FillPx	Y	8	0	PriceType	Price of Fill.
48	>SecurityID	Y	8	8	signed int	Instrument identifier.
1365	>FillQty	Y	8	16	Qty	Quantity of Fill.
28708	>FillMatchID	Y	4	24	unsigned int	Unique identifier for each price level (match step) of a match event; it is used for public trade reporting.
1363	>FillExecID	Y	4	28	signed int	Private identifier of an order match step event, which can be reconciled with the field SideTradeID (1506) in the Trade Notification.
<InstrmntLegExecGrp>						Cardinality: 0-600, Record counter: NoLegExecs
602	>LegSecurityID	Y	8	0	signed int	Instrument identifier of the leg security.
637	>LegLastPx	Y	8	8	PriceType	Price of this leg fill.
1418	>LegLastQty	Y	8	16	Qty	Quantity executed in this leg fill.
1893	>LegExecID	Y	4	24	signed int	Private identifier of a leg match step, which can be reconciled with the field SideTradeID (1506) in the Trade Notification.
624	>LegSide	Y	1	28	unsigned int	The side of the individual leg of a strategy as defined in its signature. Value: 1 = Buy; 2 = Sell
2421	>FillRefID	Y	1	29	unsigned int	Reference to the corresponding FillsGrp repeating group instance.
39020	>Pad2	N	2	30	Fixed String	Data structure padding (2 bytes). Valid characters: \x01-\x7E

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Valid Values of ExecRestatementReason (datatype ExecRestatementReason)

Valid Value	Description
1	Order book restatement
101	Order add accepted
102	Order modify accepted
103	Order delete accepted
105	IOC Order Cancelled
108	Book Order executed
114	Order has been changed to IOC
135	Market Order triggered and executed
145	Start Of Day Processing
146	End Of Day Processing
155	Order Refreshed
172	Stop Order has been triggered
215	Risk Reduction Timer Expired
217	Tick Size Change
248	Active order deletion due to SMPF
250	Active order modification due to SMPF
252	Passive order deletion due to SMPF
254	Passive order modification due to SMPF
261	Panic Cancel
302	RRMIN
303	SQUAREOFFIN
357	Base Price Update
358	Order Deleted As Price Moved Out Of DPL Range

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5.3.7 Reject Multileg-10992

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a ETI message layout. Value: 10992 (MultiLegOrderAcknowledgement, MsgType = U29)
39020	Pad2	U	2	6	Fixed String	not used
<NRResponseHeaderME>						
5979	RequestTime	Y	8	8	UTCTimestamp	In timestamp; filled always by the gateway
745	Reserve0	N	8	16	UTCTimestamp	
21002	Reserve1	N	8	24	UTCTimestamp	Matching engine in timestamp.
21003	Reserve2	N	8	32	UTCTimestamp	Matching engine out timestamp.
7765	Reserve3	N	8	40	UTCTimestamp	Timestamp the gateway receives a message from the Matching Engine
52	SendingTime	Y	8	48	UTCTimestamp	Outgoing delta timestamp; filled always by the gateway
34	MsgSeqNum	Y	4	56	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
893	LastFragment	Y	1	60	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 1 – Description: Last Message
39030	Pad3	N	3	61	Fixed String	Not used.
<Message Body>						
48	SecurityID	N	8	64	signed int	Instrument identifier.
373	SessionRejectReason	Y	4	72	unsigned int	Error code. Valid values are listed after this table.
30354	VarTextLen	Y	2	76	Counter	Values <100 are reserved by FIX. We will use user-defined values for application level errors as well

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
1409	SessionStatus	Y	1	78	unsigned int	Session status. Value: Description 0: Session active 4: Session logout complete
39000	Pad1	N	1	79	Fixed String	Not used.
30355	VarText	Y	2000	80	Variable String	Error text. Valid characters: \x09, \x0A, \x0D, \x20-\x7B, \x7D, \x7E

Valid Values of SessionRejectReason (datatype SessionRejectReason)

Valid Value	Description
1	Required Tag Missing
5	Value is incorrect (out of range) for this tag
7	Decryption problem
11	Invalid TemplateID
16	Incorrect NumInGroup count for repeating group
99	Other
100	Throttle limit exceeded
101	Stale request was not forwarded to T7
102	Service temporarily not available
103	Service not available
104	Result Of Transaction Unknown
105	Error converting response or broadcast
152	Heartbeat violation error
200	Internal technical error
210	Validation Error
211	User already logged in
10000	Order not found
10001	Price not reasonable
10004	BU Book Order Limit Ex-ceeded
10005	Session Book Order Limit Exceeded
10006	LstUpdate Timestamp Not Matched

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5.3.8 Cancel Order Notification-10112

This message informs about an unsolicited cancellation of a single order.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a ETI message layout. Value: 10112 (ExecutionReport, MsgType = 8)
39020	Pad2	U	2	6	Fixed String	not used
<RBCHeaderME>						
21003	Reserve2	N	8	8	UTCTimestamp	Matching engine out timestamp.
52	SendingTime	Y	8	16	UTCTimestamp	Outgoing timestamp; filled always by the gateway
28727	ApplSubID	N	4	24	unsigned int	Unique ID assigned by the MCX system during broadcast subscription in order to link broadcasts to the related sub-scription.
5948	PartitionID	Y	2	28	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.
28704	ApplMsgID	N	16	30	data	Application message identifier assigned to an order or quote event.
1180	ApplID	N	1	46	unsigned int	Identifier for an ETI data stream. Value: 4 – Session Data Value: 5 – Listener Data
1352	ApplResendFlag	Y	1	47	unsigned int	Indicates a retransmission message. Value: 0 – False Value: 1 – True
893	LastFragment	Y	1	48	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 1 – Last Message
39070	Pad7	N	7	49	Fixed String	Not used

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
	<MessageBody>					
37	OrderID	Y	8	56	unsigned int	Exchange Order ID generated by the MCX System; it remains constant over the lifetime of an order.
11	ClOrdID	N	8	64	unsigned int	Client Order ID: Unique participant defined order request identifier; used for client order id chaining.
41	OrigClOrdID	N	8	72	unsigned int	ClOrdID (11) of the last successfully processed task (request) referring to the specific order.
48	SecurityID	Y	8	80	signed int	Instrument identifier.
17	ExecID	Y	8	88	UTCTimestamp	Transaction timestamp.
14	CumQty	Y	8	96	Qty	Cumulated executed quantity of an order.
84	CxlQty	Y	8	104	Qty	Total quantity cancelled for this order.
711	Echo	Y	4	112	signed int	
1300	MarketSegmentID	N	4	116	signed int	Product identifier.
20036	PartyIDEntering-Trader	N	4	120	unsigned int	Entering User ID.
378	ExecRestatement-Reason	Y	2	124	unsigned int	Code to further qualify the field ExecType (150) of the Execution Report (8) message. Value: Description 103: Order delete accepted 145: Start Of Day Processing 146: End of Day Processing 148: Order Expiration 197: Order Cancellation Pending 217: Tick Size Change
20007	PartyIDEnteringFirm	N	1	126	unsigned int	Entering Entity ID. Value: Description 1: Participant 2: Market Supervision
39	OrdStatus	Y	1	127	char	Conveys the current status of an order. Value: Description 4: Cancelled

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150	ExecType	Y	1	128	char	The reason why this message was generated. Value: 4 – Cancelled

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
1227	ProductComplex	Y	1	129	unsigned int	This field qualifies an instrument type on MCX. Value: 1 – Simple instrument; 5 – Futures Spread
54	Side	Y	1	130	unsigned int	Side of the order. Value: 1 – Buy; 2 – Sell
39050	Pad5	N	5	131	Fixed String	Not used.

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5.4 Ex/Dex

5.4.1 Ex/Dex Entry Request

Exercise and don't exercise instruction entry request.This is only applicable for options contracts.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
	<MessageHeaderIn>					
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 8030 (ExDexEntry Request , MsgType = U74)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used
39020	Pad2	U	2	14	Fixed String	not used
	<RequestHeader>					
34	MsgSeqNum	Y	4	16	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
50	SenderSubID	Y	4	20	unsigned int	User ID.
	<MessageBody>					
812	Quantity	Y	8	24	unsigned int	Refer to Rules for Order Quantity
30048	SimpleSecurityID	Y	4	32	unsigned int	Instrument Identifier.
711	Echo	Y	4	36	signed int	Vendors can use this as a reference in response from exchange
20655	TargetPartyIDSessionID	N	4	40	unsigned int	Session ID.
813	ExDExFlag	Y	2	44	unsigned int	<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Exercise Instruction</td></tr><tr><td>2</td><td>Dont_Exercise_Instruction</td></tr></table>
714	AccountType	Y	1	46	unsigned int	<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Own</td></tr><tr><td>3</td><td>Client</td></tr><tr><td>5</td><td>Institution</td></tr></table>
54	Side	Y	1	47	unsigned int	Side of the order.<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Buy</td></tr><tr><td>2</td><td>Sell</td></tr></table>

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25007	FreeText1	Y	12	48	Fixed String (0-terminable)	The Unique Client Code (UCC) of the person for whom the order is entered. Valid characters: \x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D
717	CPCode	N	12	60	Fixed String (0-terminable)	The Participant code. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D.
718	UserReferenceText	N	20	72	Fixed String (0-terminable)	Upto 15 Char allowed.This field is used to provide additional regulatory information(according to respective rules andregs, circulars and/or bilateral coordination between participantand Trading Surveillance Office).Valid characters: \x20, \x22-\x7B, \x7D, \x7E.
39040	Pad4	N	4	92	Fixed String	Not Used.

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5.4.2 Ex/Dex Entry Confirmation

This message confirms an Ex/Dex entry request. This message is used to replace an existing ex/dex order.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
	<MessageHeaderOut>					
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 8031 (ExDexEntryConfirmation , MsgType =U75)
39020	Pad2	U	2	6	Fixed String	not used
	<NRResponseHeaderME>					
5979	RequestTime	Y	8	8	UTCTimestamp	Time when request was considered for processing
745	Reserve0	N	8	16	UTCTimestamp	Not used.
21002	Reserve1	N	8	24	UTCTimestamp	Not used.
21003	Reserve2	N	8	32	UTCTimestamp	Not used.
7765	Reserve3	Y	8	40	UTCTimestamp	Not used.
52	SendingTime	Y	8	48	UTCTimestamp	Gateway response out timestamp.
34	MsgSeqNum	Y	4	56	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
893	LastFragment	Y	1	60	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 0 – Not Last Message Value: 1 – Last Message
39030	Pad3	N	3	61	Fixed String	Not Used.
	<MessageBody>					
814	ExDExOrderNumber	Y	8	64	unsigned int	Unique Number assigned by Exchange
21009	TrdRegTSEntryTime	N	8	72	UTCTimestamp	The entry timestamp is the time of the creation of the order.
815	LastUpdatedTime	Y	8	80	UTCTimestamp	Time at which request is confirmed by the exchange in terms of seconds from 01-01-1970 00:00:00 hours.
812	Quantity	Y	8	88	unsigned int	Refer to Rules for Order Quantity
30048	SimpleSecurityID	Y	4	96	unsigned int	Instrument Identifier.
711	Echo	Y	4	100	signed int	Vendors can use this as a reference in response from exchange
20655	TargetPartyIDSession-ID	N	4	104	unsigned int	Session ID.

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
813	ExDExFlag	Y	2	108	unsigned int	<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Exercise Instruction</td></tr><tr><td>2</td><td>Dont_Exercise_Instruction</td></tr></table>
714	AccountType	Y	1	110	unsigned int	<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Own</td></tr><tr><td>3</td><td>Client</td></tr><tr><td>5</td><td>Institution</td></tr></table>
54	Side	Y	1	111	unsigned int	Side of the order.<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Buy</td></tr><tr><td>2</td><td>Sell</td></tr></table>
25007	FreeText1	Y	12	112	Fixed String (0-terminable)	The Unique Client Code (UCC) of the person for whom the order is entered. Valid characters: \x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D
717	CPCode	N	12	124	Fixed String (0-terminable)	The Participant code. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D.
718	UserReferenceText	N	20	136	Fixed String (0-terminable)	Upto 15 Char allowed.This field is used to provide additional regulatory information(according to respective rules andregs, circulars and/or bilateral coordination between participantand Trading Surveillance Office).Valid characters: \x20, \x22-\x7B, \x7D, \x7E.
39040	Pad4	N	4	156	Fixed String	Not Used.

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5.4.3 Ex/Dex Modification Request

This message is used to replace an existing Ex/Dex order.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderIn>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 8033 (ExDexModificationRequest , MsgType = U77)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used
39020	Pad2	U	2	14	Fixed String	not used
<RequestHeader>						
34	MsgSeqNum	Y	4	16	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
50	SenderSubID	Y	4	20	unsigned int	User ID.
<MessageBody>						
812	Quantity	Y	8	24	unsigned int	Refer to Rules for Order Quantity
814	ExDExOrderNumber	Y	8	32	unsigned int	Unique Number assigned by Exchange
815	LastUpdatedTime	Y	8	40	UTCTimestamp	Time at which request is confirmed by the exchange in terms of seconds from 01-01-1970 00:00:00 hours.
30048	SimpleSecurityID	Y	4	48	unsigned int	Instrument Identifier.
711	Echo	Y	4	52	signed int	Vendors can use this as a reference in response from exchange
20655	TargetPartyIDSession-ID	N	4	56	unsigned int	Session ID.
813	ExDExFlag	Y	2	60	unsigned int	Value: Description 1: Exercise Instruction 2: Dont_Exercise_Instruction
714	AccountType	Y	1	62	unsigned int	Value: Description 1: Own 3: Client 5: Institution

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
54	Side	Y	1	63	unsigned int	Side of the order. Value: 1 = Buy; 2 = Sell
25007	FreeText1	Y	12	64	Fixed String (0-terminable)	The Unique Client Code (UCC) of the person for whom the order is entered. Valid characters: \x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D
717	CPCode	N	12	88	Fixed String (0-terminable)	The Participant code. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D.
718	UserReferenceText	N	20	108	Fixed String (0-terminable)	Upto 15 Char allowed.This field is used to provide additional regulatory information(according to respective rules andregs, circulars and/or bilateral coordination between participantand Trading Surveillance Office).Valid characters: \x20, \x22-\x7B, \x7D, \x7E.
39040	Pad4	N	4	108	Fixed String	Not used.

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5.4.4 Ex/Dex Modification Confirmation

This message confirms a Replace Ex/Dex modification request.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 8034 (ExDexModificationConfirmation , MsgType = U80)
39020	Pad2	U	2	6	Fixed String	not used
<NRResponseHeaderME>						
5979	RequestTime	Y	8	8	UTCTimestamp	Time when request was considered for processing
745	Reserve0	N	8	16	UTCTimestamp	Not Used.
21002	Reserve1	N	8	24	UTCTimestamp	Not Used.
21003	Reserve2	N	8	32	UTCTimestamp	Not Used.
7765	Reserve3	Y	8	40	UTCTimestamp	Not Used.
52	SendingTime	Y	8	48	UTCTimestamp	Gateway response out timestamp.
34	MsgSeqNum	Y	4	56	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
893	LastFragment	Y	1	60	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 0 – Not Last Message Value: 1 – Last Message
39030	Pad3	N	3	61	Fixed String	Not Used.
	<MessageBody>					
812	Quantity	Y	8	64	unsigned int	Refer to Rules for Order Quantity
814	ExDExOrderNumber	Y	8	72	unsigned int	Unique Number assigned by Exchange
815	LastUpdatedTime	Y	8	80	UTCTimestamp	Time at which request is confirmed by the exchange in terms of seconds from 01-01-1970 00:00:00 hours.
711	Echo	Y	4	88	signed int	Vendors can use this as a reference in response from exchange
20655	TargetPartyIDSession-ID	N	4	92	unsigned int	Session ID.
30048	SimpleSecurityID	Y	4	96	unsigned int	Instrument Identifier.

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>813</td><td>ExDExFlag</td><td>Y</td><td>2</td><td>100</td><td>unsigned int</td><td><table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Exercise Instruction</td></tr><tr><td>2</td><td>Dont_Exercise_Instruction</td></tr></table></td></tr>
<tr><td>714</td><td>AccountType</td><td>Y</td><td>1</td><td>102</td><td>unsigned int</td><td><table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Own</td></tr><tr><td>3</td><td>Client</td></tr><tr><td>5</td><td>Institution</td></tr></table></td></tr>
<tr><td>54</td><td>Side</td><td>Y</td><td>1</td><td>103</td><td>unsigned int</td><td>Side of the order.<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Buy</td></tr><tr><td>2</td><td>Sell</td></tr></table></td></tr>
<tr><td>25007</td><td>FreeText1</td><td>Y</td><td>12</td><td>104</td><td>Fixed String (0-terminable)</td><td>The Unique Client Code (UCC) of the person for whom the order is entered. Valid characters: \x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D</td></tr>
<tr><td>717</td><td>CPCode</td><td>N</td><td>12</td><td>116</td><td>Fixed String (0-terminable)</td><td>The Participant code. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D.</td></tr>
<tr><td>718</td><td>UserReferenceText</td><td>N</td><td>20</td><td>128</td><td>Fixed String (0-terminable)</td><td>Upto 15 Char allowed.This field is used to provide additional regulatory information(according to respective rules andregs, circulars and/or bilateral coordination between participantand Trading Surveillance Office).Valid characters: \x20, \x22-\x7B, \x7D, \x7E.</td></tr>
<tr><td>39040</td><td>Pad4</td><td>N</td><td>4</td><td>148</td><td>Fixed String</td><td>Not used.</td></tr>
</table>

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5.4.5 Ex/Dex Cancellation Request

This message is used to Cancel an Ex/Dex Order

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
	<MessageHeaderIn>					
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 8036 (ExDexCancellationRequest , MsgType = U76)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used
39020	Pad2	U	2	14	Fixed String	not used
	<RequestHeader>					
34	MsgSeqNum	Y	4	16	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
50	SenderSubID	Y	4	20	unsigned int	User ID.
	<MessageBody>					
814	ExDExOrderNumber	Y	8	24	unsigned int	Unique Number assigned by Exchange
815	LastUpdatedTime	Y	8	32	UTCTimestamp	Time at which request is confirmed by the exchange in terms of seconds from 01-01-1970 00:00:00 hours.
812	Quantity	Y	8	40	unsigned int	As sent with the Ex/Dex Entry Request
30048	SimpleSecurityID	Y	4	48	unsigned int	Instrument Identifier.
711	Echo	Y	4	52	signed int	Vendors can use this as a reference in response from exchange
20655	TargetPartyIDSession-ID	N	4	56	unsigned int	Session ID.
813	ExDExFlag	Y	2	60	unsigned int	<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Exercise Instruction</td></tr><tr><td>2</td><td>Dont_Exercise_Instruction</td></tr></table>
54	Side	Y	1	62	unsigned int	Side of the order.<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Buy</td></tr><tr><td>2</td><td>Sell</td></tr></table>

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>714</td><td>AccountType</td><td>Y</td><td>1</td><td>63</td><td>unsigned int</td><td><table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Own</td></tr><tr><td>3</td><td>Client</td></tr><tr><td>5</td><td>Institution</td></tr></table></td></tr>
<tr><td>25007</td><td>FreeText1</td><td>Y</td><td>12</td><td>64</td><td>Fixed String (0-terminable)</td><td>The Unique Client Code (UCC) of the person for whom the order is entered. Valid characters: \x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D</td></tr>
<tr><td>717</td><td>CPCode</td><td>N</td><td>12</td><td>76</td><td>Fixed String (0-terminable)</td><td>The Participant code. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D.</td></tr>
<tr><td>718</td><td>UserReferenceText</td><td>N</td><td>20</td><td>88</td><td>Fixed String (0-terminable)</td><td>Upto 15 Char allowed.This field is used to provide additional regulatory information(according to respective rules andregs, circulars and/or bilateral coordination between participantand Trading Surveillance Office).Valid characters: \x20, \x22-\x7B, \x7D, \x7E.</td></tr>
<tr><td>39040</td><td>Pad4</td><td>N</td><td>4</td><td>108</td><td>Fixed String</td><td>Not Used.</td></tr>
</table>

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5.4.6 Ex/Dex Cancellation Confirmation

This message confirms the Ex/Dex cancelled order

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 8037 (ExDexCancellationConfirmation , MsgType = U81)
39020	Pad2	U	2	6	Fixed String	not used
<NRResponseHeaderME>						
5979	RequestTime	Y	8	8	UTCTimestamp	In timestamp; filled always by the gateway
745	Reserve0	N	8	16	UTCTimestamp	Not used.
21002	Reserve1	N	8	24	UTCTimestamp	Not used.
21003	Reserve2	N	8	32	UTCTimestamp	Not used.
7765	Reserve3	Y	8	40	UTCTimestamp	Not used.
52	SendingTime	Y	8	48	UTCTimestamp	Gateway response out timestamp.
34	MsgSeqNum	Y	4	56	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
893	LastFragment	Y	1	60	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 0 – Not Last Message Value: 1 – Last Message
39030	Pad3	N	3	61	Fixed String	Not Used.
	<MessageBody>					
812	Quantity	Y	8	64	unsigned int	Refer to Rules for Order Quantity
814	ExDExOrderNumber	Y	8	72	unsigned int	Unique Number assigned by Exchange
815	LastUpdatedTime	Y	8	80	UTCTimestamp	Time at which request is confirmed by the exchange in terms of seconds from 01-01-1970 00:00:00 hours.
30048	SimpleSecurityID	Y	4	88	unsigned int	Instrument Identifier.
711	Echo	Y	4	92	signed int	Vendors can use this as a reference in response from exchange
20655	TargetPartyIDSession-ID	N	4	96	unsigned int	User ID for whom this request is place

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>813</td><td>ExDExFlag</td><td>Y</td><td>2</td><td>100</td><td>unsigned int</td><td><table><tr><td>Value</td><td>Description</td></tr><tr><td>1</td><td>Exercise Instruction</td></tr><tr><td>2</td><td>Dont_Exercise_Instruction</td></tr></table></td></tr>
<tr><td>714</td><td>AccountType</td><td>Y</td><td>1</td><td>102</td><td>unsigned int</td><td><table><tr><td>Value</td><td>Description</td></tr><tr><td>1</td><td>Own</td></tr><tr><td>3</td><td>Client</td></tr><tr><td>5</td><td>Institution</td></tr></table></td></tr>
<tr><td>54</td><td>Side</td><td>Y</td><td>1</td><td>103</td><td>unsigned int</td><td>Side of the order.<table><tr><td>Value</td><td>Description</td></tr><tr><td>1</td><td>Buy</td></tr><tr><td>2</td><td>Sell</td></tr></table></td></tr>
<tr><td>25007</td><td>FreeText1</td><td>Y</td><td>12</td><td>104</td><td>Fixed String (0-terminable)</td><td>The Unique Client Code (UCC) of the person for whom the order is entered. Valid characters: \x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D</td></tr>
<tr><td>717</td><td>CPCode</td><td>N</td><td>12</td><td>116</td><td>Fixed String (0-terminable)</td><td>The Participant code. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D.</td></tr>
<tr><td>718</td><td>UserReferenceText</td><td>N</td><td>20</td><td>128</td><td>Fixed String (0-terminable)</td><td>Upto 15 Char allowed.This field is used to provide additional regulatory information(according to respective rules andregs, circulars and/or bilateral coordination between participantand Trading Surveillance Office).Valid characters: \x20, \x22-\x7B, \x7D, \x7E.</td></tr>
<tr><td>39040</td><td>Pad4</td><td>N</td><td>4</td><td>148</td><td>Fixed String</td><td>Not Used.</td></tr>
</table>

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5.4.7 Ex/Dex Notification

Ex/Dex Notification provide details for Ex/Dex orders

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 8040 (ExDexNotification , MsgType =U78)
39020	Pad2	U	2	6	Fixed String	not used
<RBCHeader>						
52	SendingTime	Y	8	8	UTCTimestamp	Gateway response out timestamp.
1181	ApplSeqNum	Y	8	16	unsigned int	Application sequence number assigned to a non-order related MCX ETI data stream.
28727	ApplSubID	Y	4	24	unsigned int	Unique ID assigned by the MCX system during broadcast subscription in order to link broadcasts to the related subscription.
5948	PartitionID	Y	2	28	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.
1352	ApplResendFlag	Y	1	30	unsigned int	Indicates a retransmission message. Value: 0 – False Value: 1 – True
1180	ApplID	Y	1	31	unsigned int	Identifier for an ETI data stream. Value: 0 – Trade Enhancement
893	LastFragment	Y	1	32	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 1 – Last Message
39070	Pad7	N	7	33	Fixed String	Not Used.
<MessageBody>						
812	Quantity	Y	8	40	unsigned int	Refer to Rules for Order Quantity
814	ExDExOrderNumber	Y	8	48	unsigned int	Unique Number assigned by Exchange

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>815</td><td>LastUpdatedTime</td><td>Y</td><td>8</td><td>56</td><td>UTCTimestamp</td><td>Time at which request is confirmed by the exchange in terms of seconds from 01-01-1970 00:00:00 hours.</td></tr>
<tr><td>30048</td><td>SimpleSecurityID</td><td>Y</td><td>4</td><td>64</td><td>unsigned int</td><td>Instrument Identifier.</td></tr>
<tr><td>711</td><td>Echo</td><td>Y</td><td>4</td><td>68</td><td>signed int</td><td>Vendors can use this as a reference in response from exchange</td></tr>
<tr><td>20655</td><td>TargetPartyIDSession-ID</td><td>N</td><td>4</td><td>72</td><td>unsigned int</td><td>User ID for whom this request is place</td></tr>
<tr><td>378</td><td>ExecRestatement-Reason</td><td>Y</td><td>2</td><td>76</td><td>unsigned int</td><td>Code to further qualify the field Exec-Type (150) of the Execution Report (8) message.
Valid values are listed after this table.</td></tr>
<tr><td>714</td><td>AccountType</td><td>Y</td><td>1</td><td>78</td><td>unsigned int</td><td><table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Own</td></tr><tr><td>3</td><td>Client</td></tr><tr><td>5</td><td>Institution</td></tr></table></td></tr>
<tr><td>54</td><td>Side</td><td>Y</td><td>1</td><td>79</td><td>unsigned int</td><td>Side of the order.<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Buy</td></tr><tr><td>2</td><td>Sell</td></tr></table></td></tr>
<tr><td>816</td><td>ExDExstatus</td><td>Y</td><td>2</td><td>80</td><td>unsigned int</td><td><table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Accepted</td></tr><tr><td>2</td><td>Cancelled</td></tr></table></td></tr>
<tr><td>813</td><td>ExDExFlag</td><td>Y</td><td>2</td><td>82</td><td>unsigned int</td><td><table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Exercise Instruction</td></tr><tr><td>2</td><td>Dont_Exercise_Instruction</td></tr></table></td></tr>
</table>

<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
</table>

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25007	FreeText1	Y	12	84	Fixed String (0-terminable)	The Unique Client Code (UCC) of the person for whom the order is entered. Valid characters: \x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D
717	CPCode	N	12	96	Fixed String (0-terminable)	The Participant code. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D.
718	UserReferenceText	N	20	108	Fixed String (0-terminable)	Upto 15 Char allowed.This field is used to provide additional regulatory information(according to respective rules andregs, circulars and/or bilateral coordination between participantand Trading Surveillance Office).Valid characters: \x20, \x22-\x7B, \x7D, \x7E.

Valid Values of ExecRestatementReason (datatype ExecRestatementReason)

Valid Value					Description		
1	Order book restatement						
101	Order add accepted						
102	Order modify accepted						
103	Order delete accepted						
105	IOC Order Cancelled						
108	Book Order executed						
114	Order has been changed to IOC						
135	Market Order triggered and executed						
145	Start Of Day Processing						
146	End Of Day Processing						
155	Order Refreshed						
172	Stop Order has been triggered						
215	Risk Reduction Timer Expired						
217	Tick Size Change						
248	Active order deletion due to SMPF						
250	Active order modification due to SMPF						
252	Passive order deletion due to SMPF						
254	Passive oder modification due to SMPF						
261	Panic Cancel						
302	RRMIN						

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303	SQUAREOFFIN
357	Base Price Update
358	Order Deleted As Price Moved Out Of DPL Range

5.5.1 Trade Modification Request-8005

The Trade Modify Instruction Request message provides the ability to request the change in Account Information for an already executed trade.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderIn>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 8005 (TradeModificationRequest , MsgType = U92)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used
39020	Pad2	U	2	14	Fixed String	not used
<RequestHeader>						
34	MsgSeqNum	Y	4	16	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
50	SenderSubID	Y	4	20	unsigned int	User ID.
<MessageBody>						
37	OrderID	Y	8	24	unsigned int	Exchange Order ID generated by the MCX System; it remains constant over the lifetime of an order.
30048	SimpleSecurityID	Y	4	32	unsigned int	Instrument Identifier
20412	RootParty-IDExecutingTrader	Y	4	36	unsigned int	Owning User ID.
1506	SideTradeID	Y	4	40	unsigned int	Private trade identifier of an order or quote match step.
1003	TradeID	Y	4	44	unsigned int	Uniquely identifies all order leg allocations referring to the same match event, simple instrument and price.
1300	MarketSegmentID	Y	4	48	signed int	Product identifier.
711	Echo	N	4	52	signed int	Vendors can use this as a reference in response from exchange
751	OldAccountType	Y	1	56	Variable String	Value: 1 = Own; 3 = Client

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						5 Institution
756	OldUCCCode	N	10	57	Fixed String (0-terminable)	Previous Account information
753	OldCPCode	N	12	67	Fixed String (0-terminable)	Previous Participant Code

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
754	NewAccountType	N	1	79	Fixed String (0-terminable)	<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Own</td></tr><tr><td>3</td><td>Client</td></tr><tr><td>5</td><td>Institution</td></tr></table>
755	NewUCCCode	N	10	80	Fixed String (0-terminable)	New UCC Code
759	NewCPCode	N	12	90	Fixed String (0-terminable)	New Participant code. Valid characters: \x01-\x7E
58	Text	N	12	102	Fixed String (0-terminable)	Latest User reference Text for the order. Comma(,) is not allowed in string for request messages.
39060	Pad6	N	6	114	Fixed String	Not Used.

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5.5.2 Trade Modification Response – 8010

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
	<MessageHeaderOut>					
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 8010 (TradeModificationResponse , MsgType = U93)
39020	Pad2	U	2	6	Fixed String	not used
	<ResponseHeaderME>					
5979	RequestTime	Y	8	8	UTCTimestamp	Time when request was considered for processing
745	Reserve0	N	8	16	UTCTimestamp	
21002	Reserve1	Y	8	24	UTCTimestamp	time of matching engine entry
21003	Reserve2	Y	8	32	UTCTimestamp	Not Used.
7765	Reserve3	Y	8	40	UTCTimestamp	Time of message transmission from component to gateway
52	SendingTime	Y	8	48	UTCTimestamp	Gateway response out timestamp.
34	MsgSeqNum	Y	4	56	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
5948	PartitionID	Y	2	60	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.
1180	ApplID	Y	1	62	unsigned int	Identifier for an ETI data stream. Value: 4 – Description: Session Data
28704	ApplMsgID	Y	16	63	data	Not set if the submitting session is not the owner of the cancelled order.
893	LastFragment	Y	1	79	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 1 – Description: Last Message
	<MessageBody>					
37	OrderID	Y	8	80	unsigned int	Exchange Order ID generated by the MCX System; it remains constant over the lifetime of an order.

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
779	LastUpdateTime	Y	8	88	UTCTimestamp	Time at which exchange has confirmed the trade modification
30048	SimpleSecurityID	Y	4	96	unsigned int	Instrument Identifier
711	Echo	N	4	100	signed int	Vendors can use this as a reference in response from exchange
1506	SideTradeID	Y	4	104	unsigned int	Private trade identifier of an order or quote match step.
1003	TradeID	Y	4	108	unsigned int	Uniquely identifies all order leg allocations referring to the same match event, simple instrument and price.
20412	RootParty-IDExecutingTrader	Y	4	112	unsigned int	Owning User ID.
751	OldAccountType	Y	1	116	Fixed String (0-terminable)	<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Own</td></tr><tr><td>3</td><td>Client</td></tr><tr><td>5</td><td>Institution</td></tr></table>
756	OldUCCCode	N	10	117	Fixed String (0-terminable)	Previous Account information
753	OldCPCode	N	12	127	Fixed String (0-terminable)	Previous Participant Code
754	NewAccountType	N	1	139	Fixed String (0-terminable)	New Account Type <table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Own</td></tr><tr><td>3</td><td>Client</td></tr><tr><td>5</td><td>Institution</td></tr></table>
755	NewUCCCode	N	10	140	Fixed String (0-terminable)	New UCC Code
759	NewCPCode	N	12	150	Fixed String (0-terminable)	New Participant code. Valid characters: \x01-\x7E
58	Text	N	12	162	Fixed String (0-terminable)	Latest User reference Text for the order. Comma(,) is not allowed in string for request messages
39020	Pad2	N	2	174	Fixed String	Not Used.

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5.5.3 Trade Enhancement Notification-10989

This message informs about the acceptance/rejection of a trade by the custodian . The alert is sent to the originating session and the MAT/Sub MAT session of the business unit.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10989 (OrderMassActionReport, MsgType = BZ)
39020	Pad2	U	2	6	Fixed String	not used
<RBCHeader>						
52	SendingTime	Y	8	8	UTCTimestamp	Outgoing timestamp; filled always by the gateway
1181	ApplSeqNum	Y	8	16	unsigned int	Application sequence number assigned to a non-order related MCX ETI data stream.
28727	ApplSubID	Y	4	24	unsigned int	Unique ID assigned by the MCX system during broadcast subscription in order to link broadcasts to the related subscription.
5948	PartitionID	Y	2	28	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.
1352	ApplResendFlag	Y	1	30	unsigned int	Indicates a retransmission message. Value: 0 – False; 1 – True
1180	ApplID	Y	1	31	unsigned int	Identifier for an ETI data stream. Value: 0 – Trade Enhancement
893	LastFragment	Y	1	32	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 1 – Last Message
39070	Pad7	N	7	33	Fixed String	Not Used.
<MessageBody>						

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
1596	ClearingTradePrice	N	8	40	PriceType	Price in clearing notation which can be preliminary or final depending on TradeReportType (856).
757	TransactionTime	Y	8	48	UTCTimestamp	Transaction timestamp
37	OrderID	Y	8	56	unsigned int	Exchange Order ID generated by the MCX System; it remains constant over the lifetime of an order.
28736	ClearingTradeQty	N	8	64	Qty	Quantity in clearing notation.
30048	SimpleSecurityID	Y	4	72	unsigned int	Instrument Identifier.
1003	TradeID	Y	4	76	unsigned int	Uniquely identifies all order leg allo-cations referring to the same match event, simple instrument and price.
20455	RootPartyIDSessionID	Y	4	80	unsigned int	Session ID.
1506	SideTradeID	Y	4	84	unsigned int	Private trade identifier of an order or quote match step.
1300	MarketSegmentID	N	4	88	signed int	Product identifier.
28582	MatchDate	N	4	92	LocalMktDate	Business day of the match event.
714	AccountType	N	1	96	unsigned int	<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Own</td></tr><tr><td>3</td><td>Client</td></tr><tr><td>5</td><td>Institution</td></tr></table>
54	Side	N	1	97	unsigned int	Side of the order.<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Buy</td></tr><tr><td>2</td><td>Sell</td></tr></table>
758	GiveupStatus	N	1	98	unsigned int	<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Accepted</td></tr><tr><td>2</td><td>Rejected</td></tr><tr><td>3</td><td>Pending</td></tr></table>
717	CPCode	N	12	99	Fixed String (0-terminable)	The Participant code. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D.

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
25007	FreeText1	N	12	111	Fixed String (0-terminable)	The Unique Client Code (UCC) of the person for whom the order is entered. Valid characters: \x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D
39050	Pad5	N	5	123	Fixed String	Not Used.

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5.5.4 Trade Modification Notification

Trade Modification Notification message notify for the trade modification.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 8020 (TradeModificationNotification , MsgType = U94)
39020	Pad2	U	2	6	Fixed String	not used
<RBCHeader>						
52	SendingTime	Y	8	8	UTCTimestamp	Gateway response out timestamp.
1181	ApplSeqNum	Y	8	16	unsigned int	Application sequence number assigned to a non-order related MCX ETI data stream.
28727	ApplSubID	Y	4	24	unsigned int	Unique ID assigned by the MCX system during broadcast subscription in order to link broadcasts to the related subscription.
5948	PartitionID	Y	2	28	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.
1352	ApplResendFlag	Y	1	30	unsigned int	Indicates a retransmission message. Value: 0 – False Value: 1 – True
1180	ApplID	Y	1	31	unsigned int	Identifier for an ETI data stream. Value: 0 – Trade Enhancement
893	LastFragment	Y	1	32	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 1 – Last Message
39070	Pad7	N	7	33	Fixed String	Not Used.
<Message Body>						

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37	OrderID	Y	8	40	unsigned int	Exchange Order ID generated by the MCX System; it remains constant over the lifetime of an order.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
30048	SimpleSecurityID	Y	4	48	unsigned int	The U/L Asset / producer Identifier is specified by Exchange for permitted U/L Asset / products for trading
20412	RootParty-IDExecutingTrader	Y	4	52	unsigned int	Owning User ID.
1506	SideTradeID	Y	4	56	unsigned int	Private trade identifier of an order or quote match step.
1003	TradeID	N	4	60	unsigned int	Uniquely identifies all order leg allo-cations referring to the same match event, simple instrument and price.
766	RootPartyIDSubmitter	Y	4	64	unsigned int	
711	Echo	N	4	68	signed int	Vendors can use this as a reference in response from exchange
761	OldCustomerorFirm	Y	1	72	Fixed String (0-terminable)	Value: 1 = Own; 3 = Client; 5 = Institution
995	OldAccount	N	10	73	Fixed String (0-terminable)	Previous Account information Valid characters: \x01-\x7E
764	OldClearingAccount	N	12	83	Fixed String (0-terminable)	Previous Participant Code Valid characters: \x01-\x7E
767	NewCustomerorFirm	N	1	95	Fixed String (0-terminable)	Value: 1 = Own; 3 = Client; 5 = Institution
763	NewAccount	N	10	96	Fixed String (0-terminable)	New UCC Code Valid characters: \x01-\x7E
765	NewClearingAccount	N	12	106	Fixed String (0-terminable)	New Participant code. Valid characters: \x01-\x7E
58	Text	N	12	118	Fixed String (0-terminable)	Latest User reference Text for the or-der.Comma(,) is not allowed in string for request messages
39060	Pad6	N	6	130	Fixed String	Not Used.

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5.5.5 Resubmit for Approval Request (8500)

This message is sent to the service “Order and Quote Management”.

Tag	Field Name	Req’d	Len	Ofs	Data Type	Description
<MessageHeaderIn>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 8500 (ResubmitApprovalRequest , MsgType = U86)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used
39020	Pad2	U	2	14	Fixed String	not used
<RequestHeader>						
34	MsgSeqNum	Y	4	16	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
50	SenderSubID	Y	4	20	unsigned int	User ID.
<MessageBody>						
37	OrderID	Y	8	24	unsigned int	Exchange Order ID generated by the MCX System; it remains constant over the lifetime of an order.
1506	SideTradeID	Y	4	32	unsigned int	Private trade identifier of an order or quote match step.
30048	SimpleSecurityID	Y	4	36	unsigned int	Instrument identifier.
54	Side	N	1	40	unsigned int	Side of the order. Value: Description 1: Buy 2: Sell
39070	Pad7	N	7	41	Fixed String	Not Used.

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5.5.6 Resubmit for Approval Confirmation (8510)

This message is sent to the service “Order and Quote Management”.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 8510 (ResubmitApprovalConfirmation , MsgType = U87)
39020	Pad2	U	2	6	Fixed String	not used
<NRResponseHeaderME>						
5979	RequestTime	Y	8	8	UTCTimestamp	Time when request was considered for processing
745	Reserve0	N	8	16	UTCTimestamp	Not Used
21002	Reserve1	N	8	24	UTCTimestamp	Not Used
21003	Reserve2	N	8	32	UTCTimestamp	Not Used
7765	Reserve3	Y	8	40	UTCTimestamp	Not Used
52	SendingTime	Y	8	48	UTCTimestamp	Gateway response out timestamp.
34	MsgSeqNum	Y	4	56	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
893	LastFragment	Y	1	60	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 1 – Description: Last Message
39030	Pad3	N	3	61	Fixed String	Not Used.
<MessageBody>						
774	LastUpdateDate	N	8	64	UTCTimestamp	Last updated date.
37	OrderID	Y	8	72	unsigned int	Exchange Order ID generated by the MCX System; it remains constant over the lifetime of an order.
1506	SideTradeID	Y	4	80	unsigned int	Private trade identifier of an order or quote match step.
30048	SimpleSecurityID	Y	4	84	unsigned int	The U/L Asset / producer Identifier is specified by Exchange for permitted U/L Asset / products for tradin

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
54	Side	Y	1	88	unsigned int	Side of the order. Value: 1 = Buy; 2 = Sell
773	GiveUpStatus	Y	1	89	unsigned int	Flag informing the status of the acceptance/rejection of trade by the custodian Value: 1 = Accepted; 2 = Rejected; 3 = Pending
39060	Pad6	N	6	90	Fixed String	Not Used.

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5.5.7 Trade Notification-10500

The Trade Notification message is the legally binding confirmation for a trade.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10500 (TradeCaptureReport, MsgType = AE)
39020	Pad2	U	2	6	Fixed String	not used
<RBCHeader>						
52	SendingTime	Y	8	8	UTCTimestamp	Gateway response out timestamp.
1181	ApplSeqNum	Y	8	16	unsigned int	Application sequence number assigned to a non-order related MCX ETI data stream.
28727	ApplSubID	N	4	24	unsigned int	Unique ID assigned by the MCX system during broadcast subscription in order to link broadcasts to the related subscription.
5948	PartitionID	Y	2	28	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.
1352	ApplResendFlag	Y	1	30	unsigned int	Indicates a retransmission message. Value: Description 0: False 1: True
1180	ApplID	Y	1	31	unsigned int	Identifier for an ETI data stream. Value: Description 1: Trade
893	LastFragment	Y	1	32	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: Description 1: Last Message
39070	Pad7	U	7	33	Fixed String	not used
<MessageBody>						
1650	RelatedSecurityID	N	8	40	signed int	Not used.

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>44</td><td>Price</td><td>N</td><td>8</td><td>48</td><td>PriceType</td><td>Limit price. Required if OrdType (40) is Limit (2) or Stop Limit (4).</td></tr>
<tr><td>31</td><td>LastPx</td><td>Y</td><td>8</td><td>56</td><td>PriceType</td><td>Price of this fill.</td></tr>
<tr><td>28585</td><td>SideLastPx</td><td>N</td><td>8</td><td>64</td><td>PriceType</td><td>Fill price for the original MCX strategy.</td></tr>
<tr><td>1596</td><td>ClearingTradePrice</td><td>N</td><td>8</td><td>72</td><td>PriceType</td><td>Price in clearing notation which can be preliminary or final depending on TradeReportType (856).</td></tr>
<tr><td>724</td><td>Filler10</td><td>N</td><td>8</td><td>80</td><td>signed int</td><td>Not used.</td></tr>
<tr><td>725</td><td>Filler11</td><td>N</td><td>8</td><td>88</td><td>signed int</td><td>Not used.</td></tr>
<tr><td>60</td><td>TransactTime</td><td>Y</td><td>8</td><td>96</td><td>UTCTimestamp</td><td>Transaction timestamp.</td></tr>
<tr><td>37</td><td>OrderID</td><td>N</td><td>8</td><td>104</td><td>unsigned int</td><td>Exchange Order ID generated by the MCX system.</td></tr>
<tr><td>708</td><td>TerminalInfo</td><td>Y</td><td>8</td><td>112</td><td>unsigned int</td><td>Total 15 Characters
For 1st- 12 characters value(11111111111-33333333333),
For 13th character value(0-3)
14th – 15th digit should be valid vendor code / in House CTCL code for member
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>11111111111</td><td>IBT</td></tr>
<tr><td>22222222222</td><td>DMA</td></tr>
<tr><td>33333333333</td><td>Wireless Technology</td></tr>
<tr><td>0</td><td>Order not generated through Program trading software</td></tr>
<tr><td>1</td><td>Order generated through Program trading software</td></tr>
<tr><td>2</td><td>Smart Order Routing without Program trading software</td></tr>
<tr><td>3</td><td>Smart Order Routing with program trading software</td></tr>
</table></td></tr>
<tr><td>11</td><td>ClOrdID</td><td>N</td><td>8</td><td>120</td><td>unsigned int</td><td>Client Order ID: Unique participant defined order request identifier.For quotes the QuoteMsgID (1166) is provided in the trade notification.</td></tr>
<tr><td>723</td><td>LstUpdtTime</td><td>Y</td><td>8</td><td>128</td><td>UTCTimestamp</td><td>Not used.</td></tr>
</table>

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
727	StrategyID	Y	8	136	unsigned int	Strategy Approved by the exchange should be used.Range being from 0 to 99999
728	StrategySequence-Number	Y	8	144	unsigned int	Strategy Sequence numbers
32	LastQty	Y	8	152	Qty	Quantity executed in this fill.
1009	SideLastQty	N	8	160	Qty	Fill quantity for the original MCX strategy.
709	Filler1	N	8	168	unsigned int	Not Used.
14	CumQty	N	8	176	Qty	Cumulated executed quantity of an order.
151	LeavesQty	N	8	184	Qty	Remaining quantity of the order at the time of the execution.If the order has been executed partially this field contains the non-executed quantity.A remaining size of 0 indicates that the order is fully matched or no longer active.
30048	SimpleSecurityID	Y	4	192	unsigned int	Not used.
710	Filler2	N	4	196	unsigned int	Not used.
711	Echo	Y	4	200	signed int	Vendors can use this as a reference in response from exchange
1003	TradeID	Y	4	204	unsigned int	Uniquely identifies all order leg allocations referring to the same match event, simple instrument and price.
1126	OrigTradeID	N	4	208	unsigned int	Not used.
20459	RootParty-IDExecutingUnit	Y	4	212	unsigned int	Business Unit ID. (Value 2 indicates entered by exchange.)
20455	RootPartyIDSessionID	N	4	216	unsigned int	Session ID.
20412	RootParty-IDExecutingTrader	Y	4	220	unsigned int	Owning User ID.
25026	RootPartyIDClearing-Unit	Y	4	224	unsigned int	Not used.
1300	MarketSegmentID	Y	4	228	signed int	Product identifier.
1506	SideTradeID	Y	4	232	unsigned int	Private trade identifier of an order or quote match step.
28582	MatchDate	Y	4	236	LocalMktDate	Business day of the match event.
880	TrdMatchID	Y	4	240	unsigned int	Unique identifier for each price level (match step) of a match event; it is used for public trade reporting.
1851	StrategyLinkID	N	4	244	unsigned int	Identifier that links all trades resulting from a match step of a strategy order.

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
748	TotNumTradeReports	N	4	248	signed int	Number of leg executions of the original strategy order.
1	Account	N	2	252	Fixed String (0-terminable)	Not used. Must be sent as A1 Valid characters: 1-9, \x41, \x47, \x49, \x4D, \x50, \x52
713	Filler4	N	2	254	unsigned int	Not Used.
442	MultiLegReporting-Type	N	1	256	unsigned int	Indicates if the trade resulted from a single order or a multi leg instrument. Value: Description 1: Single Order 2: Complex Order
856	TradeReportType	Y	1	257	unsigned int	Not used.
830	TransferReason	Y	1	258	unsigned int	Not used.
716	Filler5	N	1	259	unsigned int	Not used.
20432	RootParty-IDBeneficiary	N	9	260	Fixed String	Not used. Valid characters: \x20, \x22-\x7B, \x7D, \x7E
20496	RootPartyIDTakeUp-TradingFirm	N	5	269	Fixed String	Not used. Valid characters: A-Z, 0-9, \x20
20413	RootPartyIDOrder-OriginationFirm	N	7	274	Fixed String	Not used. Valid characters: A-Z, 0-9, \x20

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>714</td><td>AccountType</td><td>Y</td><td>1</td><td>281</td><td>unsigned int</td><td><table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Own</td></tr><tr><td>3</td><td>Client</td></tr><tr><td>5</td><td>Institution</td></tr></table></td></tr>
<tr><td>574</td><td>MatchType</td><td>N</td><td>1</td><td>282</td><td>unsigned int</td><td>The point in the matching process at which this trade was matched.
The value 3(=Confirmed Trade Report) represents Trades entered by Market Supervision.<table><tr><th>Value</th><th>Description</th></tr><tr><td>3</td><td>Confirmed Trade Report (reporting from recognized markets)</td></tr><tr><td>4</td><td>Auto-match incoming order</td></tr><tr><td>11</td><td>Auto match resting order</td></tr></table></td></tr>
<tr><td>28610</td><td>MatchSubType</td><td>N</td><td>1</td><td>283</td><td>unsigned int</td><td>Indicates the auction type the trade originates from.Not filled for uncrossing, i.e.when a complex instrument switches to the instrument state “Continuous”.<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Opening auction</td></tr></table></td></tr>
<tr><td>54</td><td>Side</td><td>Y</td><td>1</td><td>284</td><td>unsigned int</td><td>Side of the trade. Leg executions of sell orders for complex instruments will have an inverted value compared to the signature.<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Buy</td></tr><tr><td>2</td><td>Sell</td></tr></table></td></tr>
<tr><td>726</td><td>AggressorIndicator</td><td>N</td><td>1</td><td>285</td><td>unsigned int</td><td>Indicates whether the order added or removed liquidity.<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>Passive</td></tr><tr><td>1</td><td>Aggressive</td></tr></table></td></tr>
<tr><td>1815</td><td>TradingCapacity</td><td>Y</td><td>1</td><td>286</td><td>unsigned int</td><td>Not used.</td></tr>
</table>

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
77	PositionEffect	N	1	287	char	Not used.
1031	CustOrderHandling-Inst	N	1	288	Fixed String	Not used. Valid characters: \x20, \x22-\x7B, \x7D, \x7E
25007	FreeText1	Y	12	289	Fixed String (0-terminable)	The Unique Client Code (UCC) of the person for whom the order is entered. Valid characters: \x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D
717	CPCode	N	12	301	Fixed String (0-terminable)	The Participant code. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D.
25009	FreeText3	N	12	313	Fixed String	Free-format text field for traderspecific or customer-related comments. Valid characters:\x00, \x21, \x23, \x24, \x28, \x29, \x2A, \x2B, \x2D, \x2E, \x2F, \x30-\x39, \x3A, \x3B, \x3D, \x3E, \x3F, \x40, \x41-\x5A, \x5C, \x5D, \x5F, \x60, \x7B, \x7D
1115	OrderCategory	N	1	325	char	Indicates if the trade notification results from an order or quote. Value: 1 – Order; 3 – Multileg order
40	OrdType	N	1	326	unsigned int	Order type. Value: 2 – Limit; 3 – Stop Market; 4 – Stop Limit; 5 – Market To Limit

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
28587	RelatedProduct-Complex	N	1	327	unsigned int	Instrument type of the orginal MCX strategy. Value: 5 – Futures Spread; 1 – Simple Instrument.
28586	OrderSide	N	1	328	unsigned int	Side of the order in the original MCX strategy. Value: 1 – Buy; 2 – Sell
22421	RootPartyClearing-Organization	Y	4	329	Fixed String	Not used. Valid characters: \x20, \x22-\x7B, \x7D, \x7E
22401	RootPartyExecuting-Firm	Y	5	333	Fixed String	Participant Short Name. Valid characters: \x20, \x22-\x7B, \x7D, \x7E
22412	RootPartyExecuting-Trader	Y	6	338	Fixed String	Not used. Valid characters: \x20, \x22-\x7B, \x7D, \x7E
22404	RootPartyClearing-Firm	Y	5	344	Fixed String	Not used. Valid characters: \x20, \x22-\x7B, \x7D, \x7E
718	UserReferenceText	N	20	349	Fixed String (0-terminable)	Upto 15 Char allowed.This field is used to provide additional regulatory information(according to respective rules andregs, circulars and/or bilateral coordination between participantand Trading Surveillance Office).Valid characters: \x20, \x22-\x7B, \x7D, \x7E.
39030	Pad3	N	3	369	Fixed String	Not Used.
39040	Pad4	U	4	372	Fixed String	Not Used.

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5.6 Others

5.6.1 Subscribe-10025

This message is used to subscribe to a MCX ETI broadcast. Multiple subscriptions to the same pair of RefApplId (1355) and SubscriptionScope (25001) are not allowed

RefApplID	MessageTemplateID	MessageTemplateName
1 Trade	10500	Trade Notification
	10501	Trade Notification Status
	10989	Trade Enhancement Notification
	8020	Trade Modification notification
2 Genral Message	10031	News
	8100	Market Wide OI Violation
	8101	Market Wide OI Alert
	4025	Margin Change Notification
3 Service Availability	10030	Service Availability
5 Listener	10117	Extended Order Information
	4125	Market Status Notification
	10122	Delete All Order Broadcast
	10112	Cancel Order Notification
	10308	Mass Cancellation Event
	10307	Trading Session Event
12 Ex/Dex	8040	Ex/Dex Notification
	4100	System Information Download

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderIn>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10025 (ApplicationMessageRequest, MsgType = BW)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used

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39020	Pad2	U	2	14	Fixed String	not used
	<RequestHeader>					
34	MsgSeqNum	Y	4	16	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
50	SenderSubID	U	4	20	unsigned int	User ID
	<MessageBody>					
25001	SubscriptionScope	N	4	24	unsigned int	For General Messages – Scope is No Value For all others scope is Session ID

1355	RefApplID	Y	1	28	unsigned int	Application identifier of a ETI data stream. Value – Description 1 – Trade 2 – General Messages 3 – Service Availability 5 – Listener Data 12 – Ex/Dex
39030	Pad3	N	3	29	Fixed String	Not used.

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5.6.2 Subscribe Response-10005

The Subscribe Broadcast Response message is used to confirm the broadcast subscription.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10005 (ApplicationMessageRequestAck, MsgType = BX)
39020	Pad2	U	2	6	Fixed String	not used
<ResponseHeader>						
5979	RequestTime	Y	8	8	UTCTimestamp	Time when request was considered for processing
52	SendingTime	Y	8	16	UTCTimestamp	Gateway response out timestamp.
34	MsgSeqNum	Y	4	24	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
39040	Pad4	N	4	28	Fixed String	Not Used.
<MessageBody>						
28727	ApplSubID	Y	4	32	unsigned int	Unique ID assigned by the MCX system during broadcast subscription in order to link broadcasts to the related subscription.
39040	Pad4	N	4	36	Fixed String	Not Used.

5.6.3 Retransmit-10008

This message is used for re-transmission of trade, risk control and news data for recovery purposes.The specified application sequence number range will lead to the retransmission of data whose application sequence number is >= ApplBegSeqNum (1182) and <= ApplEndSeqNum (1183).Depending on RefApplID (1355), the request is sent to the respective service:

- RefApplID = 1 (Trade) => request is sent to the Trades service
- RefApplID = 2 (News) => request is sent to the News service
- RefApplID = 12 (Ex/Dex) => request is sent to the Ex/Dex service.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderIn>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a ETI message layout. Value: 10008 (ApplicationMessageRequest, MsgType = BW)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used
39020	Pad2	U	2	14	Fixed String	not used
<RequestHeader>						
34	MsgSeqNum	Y	4	16	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
50	SenderSubID	U	4	20	unsigned int	User ID
<Message Body>						
1182	ApplBegSeqNum	N	8	24	SeqNum	"no value" means first known sequence number: 1
1183	ApplEndSeqNum	N	8	32	SeqNum	Ending range of application sequence numbers.
25001	SubscriptionScope	N	4	40	unsigned int	- Trade Broadcast(Business Unit): Wildcard (0)(Applicable for drop copy session Only) - -Trade Broadcast(Own Session or other session in case of drop copy session):SessionID - News Broadcast:MarketID(1=MCX) - For rest-use SessionID
5948	PartitionID	N	2	44	unsigned int	The application sequence numbers are only unique per RefApplID, SubcriptionScope and Partion-ID.Therefore, the PartitionID is required to define the scope of a Retransmission Request. Not to be set for News, Risk Control, and SRQS Maintenance.

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1355	RefApplID	Y	1	46	unsigned int	Application identifier of a MCX ETI datastream. Value: 1 – Trade; 2 – General Messages; 12 – Ex/Dex

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
39000	Pad1	N	1	47	Fixed String	Not Used.

5.6.4 Retransmit Response-10009

The Retransmission Response message confirms the Retransmit request and delivers only a fixed number of the requested data packages. So the requesting client would have to send a new retransmission request (with updated sequence numbers) if the captured response does not contain all requested data. (See below: ApplEndSeqNum (1183)).
The field ApplTotalMessageCount (1349) indicates how many retransmitted broadcast messages will follow. For fragmented messages, each fragment counts as one message. They will not be interrupted by other messages. All these messages will consist of:

- <MessageHeaderOut>.
- < RBCHeader>, where ApplSubID (28727) is always set to 'no value' and ApplResendFlag (1352) is always set to True (indicating a retransmission message).
- <MessageBody>, which is specific for the TemplateID (28500) in <MessageHeaderOut>.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10009 (ApplicationMessageRequestAck, MsgType = BX)
39020	Pad2	U	2	6	Fixed String	not used
<ResponseHeader>						
5979	RequestTime	Y	8	8	UTCTimestamp	Time when request was considered for processing
52	SendingTime	Y	8	16	UTCTimestamp	Gateway response out timestamp.
34	MsgSeqNum	Y	4	24	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
39040	Pad4	U	4	28	Fixed String	not used
<MessageBody>						
1183	ApplEndSeqNum	N	8	32	SeqNum	Ending range of application sequence numbers.If it is not set to the related request's ApplEndSeqNum, the client will have to send another retransmission request (with an updated ApplBegSeqNum)."no value" means the requested data is not available.

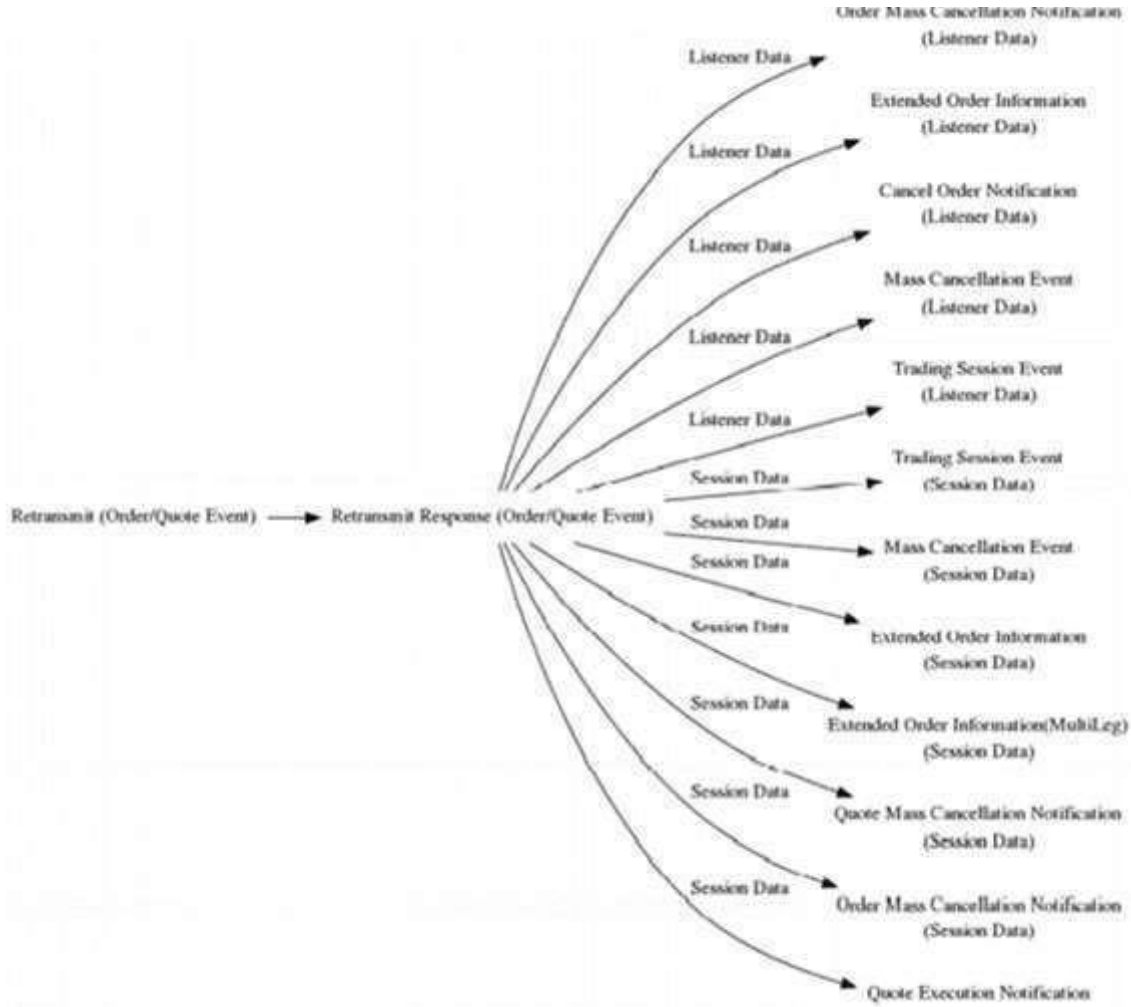
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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
1357	RefApplLastSeqNum	N	8	40	SeqNum	Last application sequence number known by the MCX system for a certain scope of RefApplID, SubscriptionScope and PartitionID."no value" means that there is no data persisted yet for the requested stream/subscription scope.
1349	ApplTotalMessageCount	Y	2	48	unsigned int	Total number of messages (fragments) included in transmission.
39060	Pad6	N	6	50	Fixed String	Not Used.

5.6.5 Retransmit (Order Event)-10026

This message is used for re-transmission of recoverable order/quote event data for recovery purposes.The specified application message identifier range will lead to the retransmission of data whose application message identifier is > ApplBegMsgID (28718) and <= ApplEndMsgID (28719).

This message is sent to the service “Retransmission of Order and Quote Events”.



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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
	<MessageHeaderIn>					
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10026 (ApplicationMessageRequest, MsgType = BW)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used
39020	Pad2	U	2	14	Fixed String	not used
	<RequestHeader>					
34	MsgSeqNum	Y	4	16	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
50	SenderSubID	U	4	20	unsigned int	User ID
	<MessageBody>					
25001	SubscriptionScope	N	4	24	unsigned int	Retransmission scope(for the supported RefApplIds): 4- Session Data "no value" 5-Listener Data:session ID
5948	PartitionID	Y	2	28	unsigned int	Application message identifiers are only unique per RefApplID, SubcriptionScope and PartitionID.Therefore, the PartitionID is required to define the scope of a Retransmit request.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
1355	RefApplID	Y	1	30	unsigned int	Application identifier of a MCX ETI data stream. Value: 4 – Session Data; 5 – Listener Data
28718	ApplBegMsgID	N	16	31	data	Beginning range of application message identifiers; 'no value' indicates first known application message identifier.
28719	ApplEndMsgID	N	16	47	data	Ending range of application message identifiers; "no value" means last known application message identifier.
39000	Pad1	N	1	63	Fixed String	Not Used.

5.6.6 Retransmit Response (Order Event)-10027

This message confirms the Retransmit (Order/Quote Event) request and delivers only a fixed number of the requested data packages. So the requesting client would have to send a new Retransmit (Order/Quote Event) request (with updated application message identifiers), if the captured response does not contain all requested data.(See below: ApplEndMsgID (28719)). The field ApplTotalMessageCount (1349) indicates how many retransmitted broadcast messages will follow.For fragmented messages, each fragment counts as one message. They will not be interrupted by other messages.
All these messages will consist of:

- <MessageHeaderOut>.
- < RBCHeaderME>, where ApplSubID (28727) is always set to “no value”, TrdRegTSTimeOut (21003) is always set to “no value”, and ApplResendFlag (1352) is always set to True (indicating a retransmission message).
- <MessageBody>, which is specific for the TemplateID (28500) in <MessageHeaderOut>.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10027 (ApplicationMessageRequestAck, MsgType = BX)
39020	Pad2	U	2	6	Fixed String	not used
<ResponseHeader>						
5979	RequestTime	Y	8	8	UTCTimestamp	Time when request was considered for processing
52	SendingTime	Y	8	16	UTCTimestamp	Gateway response out timestamp.
34	MsgSeqNum	Y	4	24	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
39040	Pad4	N	4	28	Fixed String	Not Used.
<MessageBody>						
1349	ApplTotalMessage-Count	Y	2	32	unsigned int	Total number of messages (fragments) included in transmission.

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
28719	ApplEndMsgID	N	16	34	data	Ending range of application message identifiers.If it is not set to the related request's ApplEndMsgID, the client will have to send another Retransmit request (with an updated ApplBeg-MsgID).
28722	RefApplLastMsgID	N	16	50	data	Last application message identifier known by the MCX system for a certain scope of RefApplID, SubscriptionScope and PartitionID.
39060	Pad6	N	6	66	Fixed String	Not Used.

5.6.7 Gap Fill-10032

This message informs that the provided message must be skipped over, due to the fact that the MCX system is not able to provide the functional data to the participant.The exchange may be contacted for further error analysis.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10032 (ApplicationMessageReport, MsgType = BY)
39020	Pad2	U	2	6	Fixed String	not used
<NotifHeader>						
52	SendingTime	Y	8	8	UTCTimestamp	Outgoing timestamp; filled always by the gateway
<MessageBody>						
28724	ApplIDStatus	Y	4	16	unsigned int	Application sequencing related error code. Value: Description 105: Error converting response or broadcast 106: Other values are possible
28728	RefApplSubID	N	4	20	unsigned int	Unique ID for the subscription instance assigned by the MCX system during broadcast subscription.
30354	VarTextLen	Y	2	24	Counter	Number of used bytes for field VarText (30355).

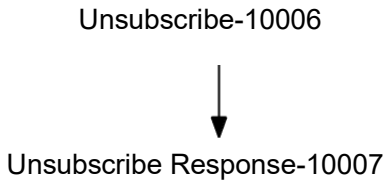
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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>1355</td><td>RefApplID</td><td>Y</td><td>1</td><td>26</td><td>unsigned int</td><td>Application identifier of a MCX ETI data stream.<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Trade</td></tr><tr><td>2</td><td>News</td></tr><tr><td>3</td><td>Service Availability</td></tr><tr><td>4</td><td>Session Data</td></tr><tr><td>5</td><td>Listener Data</td></tr><tr><td>12</td><td>Ex/Dex</td></tr></table></td></tr>
<tr><td>1409</td><td>SessionStatus</td><td>Y</td><td>1</td><td>27</td><td>unsigned int</td><td>Session status.<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>Session active</td></tr><tr><td>4</td><td>Session logout complete</td></tr></table></td></tr>
<tr><td>39040</td><td>Pad4</td><td>N</td><td>4</td><td>28</td><td>Fixed String</td><td>Not Used.</td></tr>
<tr><td>30355</td><td>VarText</td><td>Y</td><td>2000</td><td>32</td><td>Variable String</td><td>News text. Actual violation/Alert text
Valid characters: \x09, \x0A, \x0D, \x20-\x7B, \x7D, \x7E</td></tr>
</table>

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5.6.8 Unsubscribe-10006

This message is used to revoke a broadcast subscription.



Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderIn>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10006 (ApplicationMessageRequest, MsgType = BW)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used
39020	Pad2	U	2	14	Fixed String	not used
<RequestHeader>						
34	MsgSeqNum	Y	4	16	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
50	SenderSubID	U	4	20	unsigned int	User ID
<MessageBody>						
28728	RefApplSubID	Y	4	24	unsigned int	Unique ID for the subscription instance assigned by the MCX system during broadcast subscription.
39040	Pad4	N	4	28	Fixed String	Not Used.

Confidential

5.6.9 Unsubscribe Response-10007

The Unsubscribe Broadcast Response message is used to confirm the revocation of a broadcast subscription.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10007 (ApplicationMessageRequestAck, MsgType = BX)
39020	Pad2	U	2	6	Fixed String	not used
<ResponseHeader>						
5979	RequestTime	Y	8	8	UTCTimestamp	Time when request was considered for processing
52	SendingTime	Y	8	16	UTCTimestamp	Gateway response out timestamp.
34	MsgSeqNum	Y	4	24	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
39040	Pad4	N	4	28	Fixed String	Not Used.

Confidential

5.6.10 Mass Cancellation Event-10308

This message informs about an event that implicitly led to the mass cancellation of orders.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10308 (OrderMassActionReport, MsgType = BZ)
39020	Pad2	U	2	6	Fixed String	not used
<RBCHeaderME>						
21003	Reserve2	N	8	8	UTCTimestamp	Not Used.
52	SendingTime	Y	8	16	UTCTimestamp	Outgoing timestamp; filled always by the gateway
28727	ApplSubID	N	4	24	unsigned int	Unique ID assigned by the MCX system during broadcast subscription in order to link broadcasts to the related subscription.
5948	PartitionID	Y	2	28	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.
28704	ApplMsgID	N	16	30	data	Application message identifier assigned to an order or quote event.
1180	ApplID	Y	1	46	unsigned int	Identifier for an ETI data stream. Value: 4 – Session Data Value: 5 – Listener Data
1352	ApplResendFlag	Y	1	47	unsigned int	Indicates a retransmission message. Value: 0 – False Value: 1 – True
893	LastFragment	Y	1	48	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 1 – Last Message
39070	Pad7	N	7	49	Fixed String	Not Used.
<MessageBody>						

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>1369</td><td>MassActionReportID</td><td>Y</td><td>8</td><td>56</td><td>UTCTimestam-p</td><td>Last Update timestamp.</td></tr>
<tr><td>48</td><td>SecurityID</td><td>N</td><td>8</td><td>64</td><td>signed int</td><td>Instrument identifier.</td></tr>
<tr><td>1300</td><td>MarketSegmentID</td><td>Y</td><td>4</td><td>72</td><td>signed int</td><td>Product identifier.</td></tr>
<tr><td>28721</td><td>MassActionReason</td><td>Y</td><td>1</td><td>76</td><td>unsigned int</td><td>Reason for mass cancellation.
<table><tr><td>Value</td><td>Description</td></tr><tr><td>105</td><td>Product State Halt</td></tr><tr><td>106</td><td>Product State Holiday</td></tr><tr><td>107</td><td>Instrument Suspended</td></tr><tr><td>109</td><td>Complex Instrument Deletion</td></tr><tr><td>111</td><td>Product temporarily not tradeable</td></tr></table></td></tr>
<tr><td>18</td><td>ExecInst</td><td>N</td><td>1</td><td>77</td><td>unsigned int</td><td>Cancellation scope for orders. Quotes are always cancelled by Mass Cancel-lation Events.'No value' indicates no order cancellation.
<table><tr><td>Value</td><td>Description</td></tr><tr><td>1</td><td>Persistent Order(FIX value-H)</td></tr><tr><td>2</td><td>Non-Persistent Order(FIX value-Q)</td></tr><tr><td>3</td><td>Persistent and Non-Persistent Order(FIX value-H,Q)</td></tr></table></td></tr>
<tr><td>39020</td><td>Pad2</td><td>N</td><td>2</td><td>78</td><td>Fixed String</td><td>Not Used.</td></tr>
</table>

Confidential

5.6.11 Trade Notification Status-10501

This message informs about the end of the Trade Notification stream for the respective business day.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10501 (TradingSessionStatus, MsgType = h)
39020	Pad2	U	2	6	Fixed String	not used
<RBCHeader>						
52	SendingTime	Y	8	8	UTCTimestamp	Outgoing timestamp; filled always by the gateway
1181	ApplSeqNum	Y	8	16	unsigned int	Application sequence number assigned to a non-order related MCX ETI data stream.
28727	ApplSubID	N	4	24	unsigned int	Unique ID assigned by the MCX system during broadcast subscription in order to link broadcasts to the related subscription.
5948	PartitionID	Y	2	28	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.
1352	ApplResendFlag	Y	1	30	unsigned int	Indicates a retransmission message. Value: 0 – False; 1 – True
1180	ApplID	Y	1	31	unsigned int	Identifier for an ETI data stream. Value: 1 – Trade
893	LastFragment	Y	1	32	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 1 – Last Message
39070	Pad7	N	7	33	Fixed String	Not Used.
<MessageBody>						

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
1368	TradSesEvent	Y	1	40	unsigned int	Trading session event type. Value: Description 104: End of Service
39070	Pad7	N	7	41	Fixed String	Not Used.

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5.6.12 Trading Session Event-10307

This message informs about session related events

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10307 (TradingSessionStatus, MsgType = h)
39020	Pad2	U	2	6	Fixed String	not used
<RBCHeaderME>						
21003	Reserve2	N	8	8	UTCTimestamp	Not Used.
52	SendingTime	Y	8	16	UTCTimestamp	Outgoing timestamp; filled always by the gateway
28727	ApplSubID	N	4	24	unsigned int	Only set for Listener Data.
5948	PartitionID	Y	2	28	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.
28704	ApplMsgID	Y	16	30	data	Application message identifier assigned to an order or quote event.
1180	ApplID	Y	1	46	unsigned int	Identifier for an ETI data stream. Value: Description 4: Session Data 5: Listener Data
1352	ApplResendFlag	Y	1	47	unsigned int	Indicates a retransmission message. Value: Description 0: False 1: True
893	LastFragment	Y	1	48	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: Description 1: Last Message
39070	Pad7	N	7	49	Fixed String	Not Used.
<MessageBody>						
1300	MarketSegmentID	N	4	56	signed int	Product identifier.
75	TradeDate	N	4	60	LocalMktDate	Business date.

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>1368</td><td>TradSesEvent</td><td>Y</td><td>1</td><td>64</td><td>unsigned int</td><td>Trading session event type.<table><tr><th>Value</th><th>Description</th></tr><tr><td>101</td><td>Start of Service</td></tr><tr><td>102</td><td>Market Reset</td></tr><tr><td>103</td><td>End of Restatement</td></tr><tr><td>104</td><td>End of Service</td></tr><tr><td>105</td><td>Service Resumed</td></tr></table></td></tr>
<tr><td>28722</td><td>RefApplLastMsgID</td><td>N</td><td>16</td><td>65</td><td>data</td><td>Last persisted application message identifier in case of a Market Reset event.</td></tr>
<tr><td>39070</td><td>Pad7</td><td>N</td><td>7</td><td>81</td><td>Fixed String</td><td>Not Used.</td></tr>
</table>

5.6.13 News-10031

The News message provides public information from the MCX market supervision. News messages distributed without an ApplSeqNum are not part of the retransmission responses.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10031 (News, MsgType = B)
39020	Pad2	U	2	6	Fixed String	not used
<RBCHeader>						
52	SendingTime	Y	8	8	UTCTimestamp	Gateway response out timestamp.
1181	ApplSeqNum	N	8	16	unsigned int	Application sequence number assigned to a non-order related MCX ETI data stream.
28727	ApplSubID	N	4	24	unsigned int	Unique ID assigned by the MCX system during broadcast subscription in order to link broadcasts to the related subscription.
5948	PartitionID	Y	2	28	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.
1352	ApplResendFlag	Y	1	30	unsigned int	Indicates a retransmission message. Value: Description 0: False 1: True
1180	ApplID	Y	1	31	unsigned int	Identifier for an ETI data stream. Value: Description 2: News
893	LastFragment	Y	1	32	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: Description 1: Last Message
39070	Pad7	N	7	33	Fixed String	Not Used.
<MessageBody>						
42	OrigTime	Y	8	40	UTCTimestamp	Creation timestamp of the News message.

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
30354	VarTextLen	Y	2	48	Counter	Number of used bytes for field VarText (30355).
148	Headline	Y	256	50	Fixed String	The headline of a News message. Valid characters: \x20, \x22-\x7B, \x7D, \x7E
39060	Pad6	N	6	306	Fixed String	Not Used.
30355	VarText	N	2000	312	Variable String	News text. Valid characters: \x09, \x0A, \x0D, \x20-\x7B, \x7D, \x7E

5.6.14 Market Wide OI Violation-8100

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 8100 (MarketWideOIViolation, MsgType = U88)
39020	Pad2	U	2	6	Fixed String	not used
<RBCHeader>						
52	SendingTime	Y	8	8	UTCTimestamp	Gateway response out timestamp.
1181	ApplSeqNum	Y	8	16	unsigned int	Application sequence number assigned to a non-order related MCX ETI data stream.
28727	ApplSubID	Y	4	24	unsigned int	Unique ID assigned by the MCX system during broadcast subscription in order to link broadcasts to the related subscription.
5948	PartitionID	Y	2	28	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.
1352	ApplResendFlag	Y	1	30	unsigned int	Indicates a retransmission message. Value: Description 0: False 1: True
1180	ApplID	Y	1	31	unsigned int	Identifier for an ETI data stream. Value: Description 2: News
893	LastFragment	Y	1	32	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: Description 1: Last Message
39070	Pad7	N	7	33	Fixed String	Not Used.
<MessageBody>						
42	OrigTime	Y	8	40	UTCTimestamp	Creation timestamp of the News message.
774	LastUpdateDate	Y	8	48	UTCTimestamp	This contains the latest time for which message is received.

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
900	OIPercentageLimit	Y	8	56	floatDecimal6	This defines OI% Limit in terms of % Market wide Open interest for particular Asset Type and Instrument Identifier
541	MaturityDate	N	4	64	LocalMktDate	Maturity Date of instrument in terms of seconds from 01-01-1970 00:00:00 hours.When Asset type is 2 – Underlying and Security Type is Options (3), this will suggest violation at Option Expiry Level. For other cases, it can be zero.
30048	SimpleSecurityID	N	4	68	unsigned int	Instrument Identifier.
798	OIQuantityLimit	Y	4	72	unsigned int	This defines the fixed quantity limit of % market wide open interest for particular Asset Type and Instrument Identifier
800	EffectiveOILimit	Y	4	76	unsigned int	This defines OI% Limit in terms of % Market wide Open interest for particular Asset Type and Instrument Identifier
801	ActualOIQuantity	Y	4	80	unsigned int	This defines actual OI Quantity for Particular Asset Type and Instrument Identifier for which Violation has been generated
30354	VarTextLen	Y	2	84	Counter	Number of used bytes for field VarText (30355).
808	SecurityType	N	2	86	unsigned int	<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>Cummulative at AssetType Level</td></tr><tr><td>1</td><td>Underlying Futures</td></tr><tr><td>3</td><td>Options</td></tr><tr><td>4</td><td>Futures</td></tr><tr><td>5</td><td>Auctions</td></tr></table>

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>796</td><td>AssetType</td><td>Y</td><td>1</td><td>88</td><td>unsigned int</td><td><table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>Asset Class</td></tr><tr><td>1</td><td>Asset</td></tr><tr><td>2</td><td>Underlying</td></tr><tr><td>3</td><td>Product</td></tr></table></td></tr>
<tr><td>797</td><td>ViolationStatus</td><td>Y</td><td>1</td><td>89</td><td>unsigned int</td><td><table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>active Indicates violation status is Active</td></tr><tr><td>1</td><td>This means received message is for change of status from active status to violated</td></tr></table></td></tr>
<tr><td>39060</td><td>Pad6</td><td>N</td><td>6</td><td>90</td><td>Fixed String</td><td>Not used.</td></tr>
<tr><td>148</td><td>Headline</td><td>Y</td><td>256</td><td>96</td><td>Fixed String</td><td>The headline of a News message.
Valid characters: \x20, \x22-\x7B, \x7D, \x7E</td></tr>
<tr><td>30355</td><td>VarText</td><td>Y</td><td>2000</td><td>352</td><td>Variable String</td><td>News text. Actual violation/Alert text
Valid characters: \x09, \x0A, \x0D \x20-\x7B, \x7D, \x7E</td></tr>
</table>

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5.6.15 Market Wide OI Alert-8101

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 8101 (MarketWideOIAlert, MsgType = U89)
39020	Pad2	U	2	6	Fixed String	not used
<RBCHeader>						
52	SendingTime	Y	8	8	UTCTimestamp	Gateway response out timestamp.
1181	ApplSeqNum	Y	8	16	unsigned int	Application sequence number assigned to a non-order related MCX ETI data stream.
28727	ApplSubID	Y	4	24	unsigned int	Unique ID assigned by the MCX system during broadcast subscription in order to link broadcasts to the related subscription.
5948	PartitionID	Y	2	28	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.
1352	ApplResendFlag	Y	1	30	unsigned int	Indicates a retransmission message. Value: 0 – False; 1 – True
1180	ApplID	Y	1	31	unsigned int	Identifier for an ETI data stream. Value: 2 – News
893	LastFragment	Y	1	32	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 1 – Last Message
39070	Pad7	N	7	33	Fixed String	Not Used.
<MessageBody>						
42	OrigTime	Y	8	40	UTCTimestamp	Creation timestamp of the News message.

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
807	LastModifyDate	Y	8	48	UTCTimestamp	This contains the latest time for which message is received
48	SecurityID	Y	8	56	signed int	Instrument identifier.
805	AlertPercentage	Y	8	64	floatDecimal6	Indicates % of each alert level
806	UtilizedAlertPercenta-ge	Y	8	72	floatDecimal6	Utilized % for particular Asset Type and Instrument Identifier
541	MaturityDate	N	4	80	LocalMktDate	Maturity Date of instrument in terms of seconds from 01-01-1970 00:00:00 hours.When Asset type is 2 – Underlying and Security Type is Options (3), this will suggest violation at Option Expiry Level. For other cases it can be zero.
30354	VarTextLen	Y	2	84	Counter	Number of used bytes for field VarText (30355)
808	SecurityType	N	2	86	unsigned int	Value / Description: 0 Cummulative at AssetType level; 1 Underlying Futures; 3 Options; 4 Futures; 5 Auctions
796	AssetType	Y	1	88	unsigned int	Value / Description: 0 Asset Class; 1 Asset; 2 Underlying; 3 Product
804	AlertLevel	Y	1	89	unsigned int	Value / Description: 1 1st (Lowest) of 3 Alerts set for OI; 2 2nd of 3 Alert set for OI; 3 3rd (Highest) of 3 alerts set for OI; 4 alert for 100% breach of OI
39060	Pad6	U	6	90	Fixed String	not used
148	Headline	Y	256	96	Fixed String	The headline of a News message. Valid characters: \x20, \x22-\x7B, \x7D, \x7E
30355	VarText	Y	2000	352	VariableString	News text. Actual violation/Alert text Valid characters: \x09, \x0A, \x0D, Valid characters: \x09, \x0A, \x0D,

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5.6.16 Market Status Notification-4125

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 4125 (MarketStatusNotification , MsgType = U90)
39020	Pad2	U	2	6	Fixed String	not used
<RBCHeaderME>						
21003	Reserve2	N	8	8	UTCTimestamp	Matching engine out timestamp.
52	SendingTime	Y	8	16	UTCTimestamp	Gateway response out timestamp.
28727	ApplSubID	Y	4	24	unsigned int	Unique ID assigned by the MCX system during broadcast subscription in order to link broadcasts to the related subscription.
5948	PartitionID	Y	2	28	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.
28704	ApplMsgID	N	16	30	data	Application message identifier assigned to an order or quote event.
1180	ApplID	Y	1	46	unsigned int	value: 2 – Description: News
1352	ApplResendFlag	Y	1	47	Unsigned int	value: 0 – Description: False value: 1 – Description: True
893	Last Fragment	Y	1	48	Unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated Transaction value: 0 – Description: Not Last Message value: 1 – Description: Last Message
39070	Pad7	U	7	49	Fixed String	Not used.
<MessageBody>						
1300	MarketSegmentID	N	4	56	Signed int	Product Identifier

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>817</td><td>GroupID</td><td>N</td><td>2</td><td>60</td><td>unsigned int</td><td>0 – Indicates applicable for all groups
Nonzero indicates for specific product group
<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>Indicates applicable for all groups</td></tr></table></td></tr>
<tr><td>818</td><td>Status</td><td>Y</td><td>2</td><td>62</td><td>unsigned int</td><td><table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Open</td></tr><tr><td>2</td><td>Closed</td></tr><tr><td>3</td><td>Halt</td></tr></table></td></tr>
<tr><td>819</td><td>TradingSessionID</td><td>Y</td><td>2</td><td>64</td><td>unsigned int</td><td>Not used.</td></tr>
<tr><td>625</td><td>TradingSessionSubID</td><td>Y</td><td>1</td><td>66</td><td>unsigned int</td><td>Used.
<table><tr><th>Value</th><th>Description</th></tr><tr><td>1</td><td>Start of Day</td></tr><tr><td>2</td><td>Pre-Trading</td></tr><tr><td>3</td><td>Trading</td></tr><tr><td>4</td><td>Closing or closing auction</td></tr><tr><td>5</td><td>Post-Trading</td></tr><tr><td>6</td><td>End of Day</td></tr><tr><td>7</td><td>Post End of Day</td></tr><tr><td>8</td><td>Halt</td></tr></table></td></tr>
<tr><td>39050</td><td>Pad5</td><td>N</td><td>5</td><td>67</td><td>Fixed String</td><td>.
Not used</td></tr>
</table>

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5.6.17 General Messages-Margin Change Notification – 4025

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a ETI message layout. Value: 4025(MarginChangeNotification , MsgType = U91)
39020	Pad2	U	2	6	Fixed String	not used
<RBCHeader>						
52	SendingTime	Y	8	8	UTCTimestamp	Outgoing timestamp; filled always by the gateway
1181	ApplSeqNum	Y	8	16	unsigned int	Application sequence number as- signed to a non-order related MCX ETI data stream.
28727	ApplSubID	Y	4	24	unsigned int	Unique ID assigned by the MCX system during broadcast subscription in order to link broadcasts to the related subscription.
5948	PartitionID	Y	2	28	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.
1352	ApplResendFlag	Y	1	30	unsigned int	Indicates a retransmission message. Value: 0 = False; 1 = True
1180	ApplID	Y	1	31	unsigned int	Value: 1 = Trade; 4 = Session Data

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
893	LastFragment	Y	1	32	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 1 – Description: Last Message
39070	Pad7	N	7	33	Fixed String	Not used.
<MessageBody>						
775	NoMarginChange	Y	1	40	Counter	
39070	Pad7	N	7	42	Fixed String	not used
<MarginChangeRptGrp>						*Cardinality:0-65534,Record counter: NoMarginChange*
743	InstrumentIdentifier	Y	8	48	unsigned int	The U/L Asset / producer Identifier is specified by Exchange for permitted U/L Asset / products for trading
777	OldInitialBuyMargin-Rate	N	8	56	floatDecimal6	Initial Margin on Buy position with implicit 2 decimal
778	OldInitialSellMargin-Rate	N	8	64	floatDecimal6	Initiall Margin on Sell position with implicit 2 decimal
781	OldSpecialBuyMargin-Rate	N	8	72	floatDecimal6	Special Margin on Buy position with implicit 2 decimal
782	OldSpecialSellMargin-Rate	N	8	80	floatDecimal6	Special Margin on Sell position withimplicit 2 decimal
784	OldExtremeLossBuy -MarginRate	N	8	88	floatDecimal6	Extreme Loss Margin on Buy positionwith implicit 2 decimal
785	OldExtremeLossSell -MarginRate	N	8	96	floatDecimal6	Extreme Loss Margin on Sell positionwith implicit 2 decimal
787	NewInitialBuyMargin-Rate	N	8	104	floatDecimal6	Initial Margin on Buy position with implicit 2 decimal
788	NewInitialSellMargin-Rate	N	8	112	floatDecimal6	Initiall Margin on Sell position with implicit 2 decimal

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
791	NewSpecialBuy-MarginRate	N	8	120	floatDecimal6	Special Margin on Buy position with implicit2 decimal
792	NewSpecialSell-MarginRate	N	8	128	floatDecimal6	Special Margin on Sell position with implicit 2 decimal
794	NewExtremeLossBuy-MarginRate	N	8	136	floatDecimal6	Extreme Loss Margin on Buy position with implicit 2 decimal
795	NewExtremeLossSell-MarginRate	N	8	144	floatDecimal6	Extreme Loss Margin on Sell position with implicit 2 decimal
776	OldInitMarginFlatPerc	N	2	152	unsigned int	Old Initial Margin Percentage
901	OldInitialMargin-SpreadBenefitonorOff-Flag	N	2	154	unsigned int	Value: 0 – Off; 1 – On
780	OldSpecialMarginFlat-Perc	N	2	156	unsigned int	Old Special Margin Percentage
783	OldConfigurationfor-ExtremeLossMargin	N	2	158	unsigned int	1 – Extreme loss margin in percentage with 2 decimals
786	NewInitMarginFlat-Perc	N	2	160	unsigned int	New Initial Margin Percentage
789	NewInitialMargin-SpreadBenefitOnor-OffFlag	N	2	162	unsigned int	0 – Off, 1 – ON
790	NewSpecialMargin-FlatPerc	N	2	164	unsigned int	New Special Margin Percentage
793	NewConfigurationfor-ExtremeLossMargin	N	2	166	unsigned int	1 – Extreme loss margin in percentage with 2 decimals

5.6.18 Service Availability-10030

The Service Availability message provides information on the availability of a partition.

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 10030 (UserNotification, MsgType = CB)
39020	Pad2	U	2	6	Fixed String	not used
<NRBCHeader>						
52	SendingTime	Y	8	8	UTCTimestamp	Gateway response out timestamp.
28727	ApplSubID	Y	4	16	unsigned int	Unique ID assigned by the MCX system during broadcast subscription in order to link broadcasts to the related subscription.
1180	ApplID	Y	1	20	unsigned int	Identifier for an ETI data stream. Value: 3 – Description: Service Availability
893	LastFragment	Y	1	21	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 0 – Description: Not Last Message Value: 1 – Description: Last Message
39020	Pad2	N	2	22	Fixed String	Not Used.
<MessageBody>						
25030	MatchingEngine-TradeDate	N	4	24	LocalMktDate	Current business day for Order/Quote Management service.
25031	TradeManagerTrade-Date	N	4	28	LocalMktDate	Current business day of Trades service.
25032	ApplSeqTradeDate	N	4	32	LocalMktDate	Current business day of Retransmission of Order/Quote Events service.
5948	PartitionID	Y	2	36	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.

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<table>
<tr><th>Tag</th><th>Field Name</th><th>Req'd</th><th>Len</th><th>Ofs</th><th>Data Type</th><th>Description</th></tr>
<tr><td>25005</td><td>MatchingEngine-Status</td><td>Y</td><td>1</td><td>38</td><td>unsigned int</td><td>Order/Quote Management service: Informs if trading is active for grouping of MCX products.<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>Unavailable</td></tr><tr><td>1</td><td>Available</td></tr></table></td></tr>
<tr><td>25006</td><td>TradeManagerStatus</td><td>Y</td><td>1</td><td>39</td><td>unsigned int</td><td>Trades service: Informs about the availability of the retransmission service of trades for a grouping of MCX products.<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>Unavailable</td></tr><tr><td>1</td><td>Available</td></tr></table></td></tr>
<tr><td>28732</td><td>ApplSeqStatus</td><td>Y</td><td>1</td><td>40</td><td>unsigned int</td><td>Informs about the availability of the retransmission services for order events (session data and listener data).<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>Unavailable</td></tr><tr><td>1</td><td>Available</td></tr></table></td></tr>
<tr><td>39070</td><td>Pad7</td><td>N</td><td>7</td><td>41</td><td>Fixed String</td><td>Not Used.</td></tr>
</table>

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5.6.19 Auction Notification-11028

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a ETI message layout. Value: 11028 (NotificationAuctionRequest , MsgType = U44)
39020	Pad2	U	2	6	Fixed String	not used
<RBCHeader>						
52	SendingTime	Y	8	8	UTCTimestamp	Outgoing timestamp; filled always by the gateway
1181	ApplSeqNum	Y	8	16	unsigned int	Application sequence number as- signed to a non-order related MCX ETI data stream.
28727	ApplSubID	Y	4	24	unsigned int	Unique ID assigned by the MCX system during broadcast subscription in order to link broadcasts to the related subscription.
5948	PartitionID	Y	2	28	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.
1352	ApplResendFlag	Y	1	30	unsigned int	Indicates a retransmission message. Value: 0 – False; 1 – True

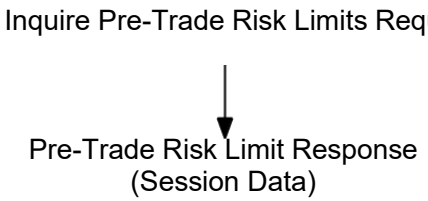
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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
893	LastFragment	Y	1	32	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 1 – Description: Last Message
39070	Pad7	N	7	33	Fixed String	Not used.
	<MessageBody>					
723	LstUpdtTime	Y	8	40	UTCTimestamp	Last updated time.
38	OrderQty	Y	8	48	Qty	Total Order Quantity.
44	Price	N	8	56	PriceType	
14	CumQty	Y	8	64	Qty	Cumulated executed quantity of an order.
1300	MarketSegmentID	Y	4	72	signed int	Product identifier.
30048	SimpleSecurityID	Y	4	76	unsigned int	Instrument identifier for simple instruments.
819	TradingSessionID	Y	2	80	unsigned int	Session No. for the market type Specified above for which open message is send.
25056	AuctionEnquiry-TradingStatus	Y	1	82	unsigned int	Value: 0 – Description: Not_Defined Value: 1 – Description: Open Value: 2 – Description: Closed
39050	Pad5	N	5	83	Fixed String	Not used.

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5.6.20 Inquire Pre-Trade Risk Limits Request-10311

This message is sent to the service “Order and Quote Management”.



Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
	<MessageHeaderIn>					
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a ETI message layout. Value: 10311 (PartyRiskLimitsRequest, MsgType = CL)
25028	NetworkMsgID	U	8	6	Fixed String (0-terminable)	not used
39020	Pad2	U	2	14	Fixed String	not used
	<RequestHeader>					
34	MsgSeqNum	Y	4	16	unsigned int	Message sequence number used by the participant for requests sent to the gateway.
50	SenderSubID	Y	4	20	unsigned int	User ID.
	<MessageBody>					
1300	MarketSegmentID	Y	4	24	signed int	Product identifier.
20412	RootParty-IDExecutingTrader	N	4	28	unsigned int	Owning User ID.
1533	RiskLimitPlatform	Y	1	32	unsigned int	Scope for Pre-Trade risk limits Value: 0 – On-Book; 1 – Off-Book
22059	PartyExecutingUnit	N	5	33	Fixed String (0-terminable)	Executing BusinessUnit name Valid characters: \x01-\x7E
28775	RiskLimitGroup	N	3	38	Fixed String	User Pre-Trade risk group Valid characters: A-Z, 0-9, \x20
39070	Pad7	N	7	41	Fixed String	Not used.

5.6.21 Pre-Trade Risk Limit Response-10313

This message is sent to the service “Order and Quote Management”.

Tag	Field Name	Req’d	Len	Ofs	Data Type	Description
<MessageHeaderOut>						
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, in-cluding this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI mes-sage layout. Value: 10313 (PartyRiskLimitsReport, MsgType = CM)
39020	Pad2	U	2	6	Fixed String	not used
<ResponseHeader>						
5979	RequestTime	Y	8	8	UTCTimestamp	Gateway request in timestamp.
52	SendingTime	Y	8	16	UTCTimestamp	Outgoing timestamp; filled always by the gateway
34	MsgSeqNum	Y	4	24	unsigned int	Message sequence number used by theparticipant for requests sent to the gateway.
39040	Pad4	N	4	28	Fixed String	Not used.
<MessageBody>						
1667	RiskLimitReportID	Y	8	32	unsigned int	ID of a PartyRiskLimitReport
20412	RootParty-IDExecutingTrader	N	4	40	unsigned int	Owning User ID.
710	Filler2	N	4	44	signed int	
1669	NoRiskLimits	Y	1	48	Counter	

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
1672	PartyDetailStatus	Y	1	49	unsigned int	Member status. Value: 0 – Active; 1 – Suspend
1533	RiskLimitPlatform	Y	1	50	unsigned int	Scope for Pre-Trade risk limits Value: 0 – On-Book; 1 – Off-Book
22259	PartyDetailExecuting-Unit	Y	5	51	Fixed String	Detail BusinessUnit name Valid characters: A-Z, 0-9, \x20
<RiskLimitsRptGrp>						Cardinality: 0-64, Record counter: NoRiskLimits
28777	>RiskLimitQty	N	8	56	Qty	Risk limit quantity
1300	>MarketSegmentID	N	4	64	Signed int	Product Identifier.
1530	>RiskLimitType	Y	1	68	unsigned int	Type of risk limits Value: 4 – Long limit; 5 – Short limit
461	>ProductLine	Y	1	69	char	F – Future, O – Option Valid characters: A-Z
39020	>Pad2	N	2	70	Fixed String	Not Used.

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5.6.22 System Information Download-4100

Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
	<MessageHeaderOut>					
9	BodyLen	Y	4	0	unsigned int	Number of bytes for the message, including this field.
28500	TemplateID	Y	2	4	unsigned int	Unique identifier for a MCX ETI message layout. Value: 4100 (SystemInformation, MsgType = U79)
39020	Pad2	U	2	6	Fixed String	not used
	<RBCHeader>					
52	SendingTime	Y	8	8	UTCTimestamp	Outgoing timestamp; filled always by the gateway
1181	ApplSeqNum	Y	8	16	unsigned int	Application sequence number assigned to a non-order related MCX ETI data stream.
28727	ApplSubID	Y	4	24	unsigned int	Unique ID assigned by the MCX system during broadcast subscription in order to link broadcasts to the related subscription.
5948	PartitionID	Y	2	28	unsigned int	Grouping of MCX products. Belongs to the scope of Service Availability and Retransmit requests.
1352	ApplResendFlag	Y	1	30	unsigned int	Indicates a retransmission message. Value: 0 – False; 1 – True
1180	ApplID	Y	1	31	unsigned int	Identifier for an ETI data stream. Value: 2 – News

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Tag	Field Name	Req'd	Len	Ofs	Data Type	Description
893	LastFragment	Y	1	32	unsigned int	Indicates whether this message is the last fragment (part) of a sequence of messages belonging to one dedicated transaction. Value: 1 – Description: Last Message
39070	Pad7	N	7	33	Fixed String	Not used.
<Message Body>						
40075	DisclosedQuantity-PercentAllowed	Y	8	40	Qty	Minimum Disclosed Quantity percentage allowed on current Quantity.
40076	TradeModification-TimeIndicator	Y	2	48	unsigned int	0-In case trade modification acceptance time has not elapsed. 1- In case trade modification acceptance time has elapsed.
40077	DeliveryInstruction-ModificationTime-Indicator	Y	2	50	unsigned int	0-In case acceptance time has not elapsed. 1- In case acceptance time has elapsed.
818	Status	Y	2	52	unsigned int	Value: 1 – Description: Open Value: 2 – Description: Closed Value: 3 – Description: Halt
39020	Pad2	N	2	54	Fixed String	Not used.

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6. Appendix

Code Snippet - c++

Password must be encrypted as per RSA token.

/** The sample code is provided *AS-IS* basis as an reference. The code is not be used in your application or system without* fully testing and validating the readiness of your application or system.*/

```
#include <openssl/pem.h>
#include <openssl/ssl.h>
#include <openssl/rsa.h>
#include <openssl/evp.h>
#include <openssl/bio.h>
#include <openssl/err.h>
#include <stdio.h>
#include <math.h>
#include <iostream>
#include <fstream>

using namespace std;

int padding = RSA_PKCS1_PADDING;

int Base64Encode(const char* message, char** buffer, int length) { //Encodes
a string to base64

BIO *bio, *b64;

FILE* stream;

int encodedSize = 4*ceil((double)length/3);

*buffer = (char *)malloc(encodedSize+1);

stream = fmemopen(*buffer, encodedSize+1, "w");

b64 = BIO_new(BIO_f_base64());

bio = BIO_new_fp(stream, BIO_NOCLOSE);

bio = BIO_push(b64, bio);

BIO_set_flags(bio, BIO_FLAGS_BASE64_NO_NL); //Ignore newlines - write
everything in one line

BIO_write(bio, message, length);

BIO_flush(bio);

BIO_free_all(bio);

fclose(stream);
```

```
return (0); //success

}

int calcDecodeLength(const char* b64input) { //Calculates the length of a
decoded base64 string

int len = strlen(b64input);

int padding = 0;

if (b64input[len-1] == '=' && b64input[len-2] == '=') //last two chars are =
padding = 2;

else if (b64input[len-1] == '=') //last char is =

padding = 1;

return (int)len*0.75 - padding;

}

int Base64Decode(char* b64message, char** buffer) { //Decodes a base64
encoded string BIO *bio, *b64;

int decodeLen = calcDecodeLength(b64message),

len = 0;

*buffer = (char*)malloc(decodeLen+1);

FILE* stream = fmemopen(b64message, strlen(b64message), "r"); b64 =
BIO_new(BIO_f_base64());

bio = BIO_new_fp(stream, BIO_NOCLOSE);


bio = BIO_push(b64, bio);

BIO_set_flags(bio, BIO_FLAGS_BASE64_NO_NL); //Do not use newlines to flush
buffer len = BIO_read(bio, *buffer, strlen(b64message));

//Can test here if len == decodeLen - if not, then return an error

(*buffer)[len] = '\0';

BIO_free_all(bio);

fclose(stream);

return (0); //success

}

RSA * createRSAWithFilename(char * filename,int spublic)

{

FILE * fp = fopen(filename,"rb");
```

```
if(fp == NULL)

{

printf("Unable to open file %s \n",filename);

return NULL;

}

RSA *rsa= RSA_new() ;

if(spublic)

{

rsa = PEM_read_RSA_PUBKEY(fp, &rsa,NULL, NULL);

}

else

{

rsa = PEM_read_RSAPrivateKey(fp, &rsa,NULL, NULL);

}

return rsa;

}

//Function encrypts the value returns length of encrypted text

int public_encrypt(unsigned char * data,int data_len, unsigned char
*encrypted)

{

RSA * rsa =
createRSAWithFilename((char*)"/home/a1783558/public.pem",1);//Path of public
key int result = RSA_public_encrypt(data_len,data,encrypted,rsa,padding);
return result;

}

void printLastError(char *msg)

{

char * err;

ERR_load_crypto_strings();

ERR_error_string(ERR_get_error(), err);

printf("%s ERROR: %s\n",msg, err);
```

```
free(err);

}

int main(){

//Text to be encrypted

char plainText[2048/8] = "Hello this is Ravi"; //key length : 2048 unsigned
char encrypted[4098]={};

int encrypted_length= public_encrypt((unsigned
char*)plainText,strlen(plainText),encrypted);

if(encrypted_length == -1){

printLastError("Public Encrypt failed ");

exit(0);

}

printf("Encrypted length =%d\n",encrypted_length);

//Copy char array to pointer

char * enc = (char*)encrypted;

//Base64 Encoding

Base64Encode(enc ,&enc, encrypted_length);

cout<<enc<<"\n";

}
```

Code Snippet - java

Password has to be encrypted as per RSA token.

/** The sample code is provided *AS-IS* basis as an reference. The code is not be used in your application or system without* fully testing and validating the readiness of your application or system.*/

```
package com.mcx;
import javax.crypto.BadPaddingException;
import javax.crypto.Cipher;
import javax.crypto.IllegalBlockSizeException;
import javax.crypto.NoSuchPaddingException;
import java.nio.charset.StandardCharsets;
import java.security.*;
import java.security.spec.InvalidKeySpecException;
import java.security.spec.PKCS8EncodedKeySpec;
import java.security.spec.X509EncodedKeySpec;
import java.util.Base64;
public class SampleCodeJava {

public static void main(String[] args) throws NoSuchAlgorithmException,
NoSuchPaddingException, InvalidKeySpecException, //Ciphper encoding
```

```
Cipher cipher = Cipher.getInstance("RSA/ECB/PKCS1Padding");

String clearTextPwd = "MyPassword";

PublicKey publicKey = loadPublicKey();

cipher.init(Cipher.ENCRYPT_MODE, publicKey);

byte[] encrypted =
cipher.doFinal(clearTextPwd.getBytes(StandardCharsets.UTF_8)); String
encryptedPwd = Base64.getEncoder().encodeToString(encrypted)

System.out.println("ClearText Password: " + clearTextPwd);

System.out.println("Encrypted Password: " + encryptedPwd);

}

private static PublicKey       loadPublicKey() throws
InvalidKeySpecException, NoSuchAlgorithmException {

//      The below working sample public key provided as inline key. However
in production region, PEM encoded Public Key of MCX to be downloaded from
MCX FTP server.

String publicKeyPEM =
"MIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA0gzs2VUrYlrnDPDrsSJf\n" +
"G2VGjos7/WuF5LWn28O0ET/RWkq4R1PiQCG8Dur15u+KuBt3vIQTE4n7S/Q5FtlU\n" +
"p2/QWjQchKhnnIAeblpBlIXTdGdIzZLakSSFN6+H66lWFPkYL8d+F8Koizt2KBC/\n" +
"4Dl5RR8hHeIKneeSa23S8YsA06blqmFw5uL95LNtL9dtXNzw+sIt72iYcmMl4cC2\n" +
"e8tNGcG0GWYqV4N4MGAdX0gHaZtsEDM1UU4D6fM1tU5ddfLtGPEqAcYaY13znSVW\n" +
"XU2jeORt9zdfJ2+48dylWc6slfJ0O3sQBVWytM1L09TIXZ/v+DK4kAeIQlxI3BaU\n" +
"bQIDAQAB";

publicKeyPEM = publicKeyPEM.replaceAll("\\s", "");

// decode to get the binary DER representation

byte[] publicKeyDER = Base64.getDecoder().decode(publicKeyPEM); KeyFactory
keyFactory = KeyFactory.getInstance("RSA");

PublicKey publicKey = keyFactory.generatePublic(new
X509EncodedKeySpec(publicKeyDER)); return publicKey;

}
}
```

Code Snippet - CSharp

Password has to be encrypted as per RSA token.

/** The sample code is provided *AS-IS* basis as an reference. The code is not be used in your application or system without* fully testing and validating the readiness of your application or system.*/

```
using System;
using System.Text;
using Org.BouncyCastle.Crypto;
using Org.BouncyCastle.OpenSsl;
```

```
using Org.BouncyCastle.Crypto.Encodings;
using Org.BouncyCastle.Crypto.Engines;
using System.IO;

namespace SampleCodeCSharp

{

class Program

{

public static string publicKey = "-----BEGIN PUBLIC KEY-----MIIBIjANB" +

"gkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA0gzs2VUrYlrnDPDrsSJfG2VGjos7/WuF" +
"5LWn28O0ET/RWkq4R1PiQCG8Dur15u+KuBt3vIQTE4n7S/Q5FtlUp2/QWjQchKhnnIAebl" +
"pBlIXTdGdIzZLakSSFN6+H66lWFPkYL8d+F8Koizt2KBC/4Dl5RR8hHeIKneeSa23S8" +
"YsA06blqmFw5uL95LNtL9dtXNzw+sIt72iYcmMl4cC2e8tNGcG0GWYqV4N4MGAdX0gHaZt" +
"sEDM1UU4D6fM1tU5ddfLtGPEqAcYaY13znSVWXU2jeORt9zdfJ2+48dylWc6slfJ0O3sQB" +
"VWytM1L09TIXZ/v+DK4kAeIQlxI3BaUbQIDAQAB-----END PUBLIC KEY-----";

public static string PasswordPlainText = "MyPassword";

static void Main(string[] args)

{

Program prg = new Program();

string EncryptedText = prg.RsaEncryptWithPublic(PasswordPlainText,
publicKey);

Console.WriteLine(EncryptedText);

Console.ReadLine();

}

public string RsaEncryptWithPublic(string clearText, string publicKey)

{

try

{

var bytesToEncrypt = Encoding.UTF8.GetBytes(clearText);

var encryptEngine = new Pkcs1Encoding(new RsaEngine());

using (var txtreader = new StringReader(publicKey))

{

var keyParameter = (AsymmetricKeyParameter)new
PemReader(txtreader).ReadObject(); encryptEngine.Init(true, keyParameter);

}
```

```
var encrypted =
Convert.ToBase64String(encryptEngine.ProcessBlock(bytesToEncrypt, 0,
bytesToEncrypt.Length)) return encrypted;

}



catch (Exception ex)

{

throw ex;
}
}
}
}
```

7. Annexure for Encryption/Decryption

For symmetric encryption/decryption methodology –**A. Encryption:**

Initialization→

```
void encrypt_EVP_aes_256_gcm_init(EVP_CIPHER_CTX **ctx, unsigned char
*key, unsigned char *iv)
{
if(!(*ctx = EVP_CIPHER_CTX_new()))
handleErrors();
if(1 != EVP_EncryptInit_ex(*ctx, EVP_aes_256_gcm(), NULL, key, iv))
handleErrors();
}
```

Encryption→

```
void encrypt(EVP_CIPHER_CTX *ctx, unsigned char *plaintext, int
plaintext_len, unsigned char *ciphertext, int *ciphertext_len)
{
int len;
if(1 != EVP_EncryptUpdate(ctx, ciphertext, &len, plaintext, plaintext_len))
handleErrors();
*ciphertext_len = len;
}
```

B. Decryption:

Initialization→

```
void decrypt_EVP_aes_256_gcm_init(EVP_CIPHER_CTX **ctx, unsigned char
*key, unsigned char *iv)
{
if(!(*ctx = EVP_CIPHER_CTX_new()))
handleErrors();
if(1 != EVP_DecryptInit_ex(*ctx, EVP_aes_256_gcm(), NULL, key, iv))
handleErrors();
}
```

Decryption→

```
int decrypt(EVP_CIPHER_CTX *ctx, unsigned char *ciphertext, int
ciphertext_len, unsigned char *plaintext, int *plaintext_len)
{
int len;
if(1 != EVP_DecryptUpdate(ctx, plaintext, &len, ciphertext,
ciphertext_len))
handleErrors();
*plaintext_len = len;
}
```

Example: Encryption using GCM mode

Code Snippet - C++

```
int gcm_encrypt(unsigned char *plaintext, int plaintext_len,
                unsigned char *aad, int aad_len,
                unsigned char *key,
                unsigned char *iv, int iv_len,
                unsigned char *ciphertext,
                unsigned char *tag)
{
    EVP_CIPHER_CTX *ctx;

    int len;

    int ciphertext_len;


    /* Create and initialise the context */
    if(!(ctx = EVP_CIPHER_CTX_new()))
        handleErrors();

    /* Initialise the encryption operation. */
    if(1 != EVP_EncryptInit_ex(ctx, EVP_aes_256_gcm(), NULL, NULL, NULL))
        handleErrors();

    /*
     * Set IV length if default 12 bytes (96 bits) is not appropriate
     */
    if(1 != EVP_CIPHER_CTX_ctrl(ctx, EVP_CTRL_GCM_SET_IVLEN, iv_len, NULL))
        handleErrors();

    /* Initialise key and IV */
    if(1 != EVP_EncryptInit_ex(ctx, NULL, NULL, key, iv))
        handleErrors();

    /*
     * Provide any AAD data. This can be called zero or more times as
     * required
     */
    if(1 != EVP_EncryptUpdate(ctx, NULL, &len, aad, aad_len))
```

```
        handleErrors();

    /*
     * Provide the message to be encrypted, and obtain the encrypted output.
     * EVP_EncryptUpdate can be called multiple times if necessary
     */
    if(1 != EVP_EncryptUpdate(ctx, ciphertext, &len, plaintext, plaintext_len))
        handleErrors();
    ciphertext_len = len;

    /*
     * Finalise the encryption. Normally ciphertext bytes may be written at
     * this stage, but this does not occur in GCM mode
     */
    if(1 != EVP_EncryptFinal_ex(ctx, ciphertext + len, &len))
        handleErrors();
    ciphertext_len += len;

    /* Get the tag */
    if(1 != EVP_CIPHER_CTX_ctrl(ctx, EVP_CTRL_GCM_GET_TAG, 16, tag))
        handleErrors();

    /* Clean up */
    EVP_CIPHER_CTX_free(ctx);

    return ciphertext_len;
}
```

Code Snippet – C#

```
public byte[] AESGCMEncryptionNew(byte[] dataToEncrypt)
        {
            byte[] resultWithNoTag;
            GcmBlockCipher cipher = new GcmBlockCipher(new AesFastEngine());


            cipher.Init(true, new AeadParameters(new
KeyParameter(Encoding.UTF8.GetBytes("ABCGFEDTHGYJSTFGABCGFEDTHGYJSTFG")), 128,
Encoding.UTF8.GetBytes("dsfrehbndrft")));
            byte[] encryptedResult = new
byte[cipher.GetOutputSize(dataToEncrypt.Length)];
            int lenRes = cipher.ProcessBytes(dataToEncrypt, 0,
dataToEncrypt.Length, encryptedResult, 0);
            cipher.DoFinal(encryptedResult, lenRes);
            resultWithNoTag = new byte[encryptedResult.Length - 16];
            Array.Copy(encryptedResult, resultWithNoTag,
resultWithNoTag.Length);
            return resultWithNoTag;
        }
```

Example: Decryption using GCM mode

Code Snippet - C++

```
int gcm_decrypt(unsigned char *ciphertext, int ciphertext_len,
                unsigned char *aad, int aad_len,
                unsigned char *tag,
                unsigned char *key,
                unsigned char *iv, int iv_len,
                unsigned char *plaintext)
{
    EVP_CIPHER_CTX *ctx;
    int len;
    int plaintext_len;
    int ret;

    /* Create and initialise the context */
    if(!(ctx = EVP_CIPHER_CTX_new()))
        handleErrors();

    /* Initialise the decryption operation. */
    if(!EVP_DecryptInit_ex(ctx, EVP_aes_256_gcm(), NULL, NULL, NULL))
        handleErrors();

    /* Set IV length. Not necessary if this is 12 bytes (96 bits) */
    if(!EVP_CIPHER_CTX_ctrl(ctx, EVP_CTRL_GCM_SET_IVLEN, iv_len, NULL))
        handleErrors();

    /* Initialise key and IV */
    if(!EVP_DecryptInit_ex(ctx, NULL, NULL, key, iv))
        handleErrors();

    /*
     * Provide any AAD data. This can be called zero or more times as
     * required
     */
    if(!EVP_DecryptUpdate(ctx, NULL, &len, aad, aad_len))
        handleErrors();

    /*
     * Provide the message to be decrypted, and obtain the plaintext output.
     * EVP_DecryptUpdate can be called multiple times if necessary
     */
    if(!EVP_DecryptUpdate(ctx, plaintext, &len, ciphertext, ciphertext_len))
        handleErrors();
    plaintext_len = len;

    /* Set expected tag value. Works in OpenSSL 1.0.1d and later */
    if(!EVP_CIPHER_CTX_ctrl(ctx, EVP_CTRL_GCM_SET_TAG, 16, tag))
        handleErrors();

    /*
     * Finalise the decryption. A positive return value indicates success,
     * anything else is a failure - the plaintext is not trustworthy.
     */
    ret = EVP_DecryptFinal_ex(ctx, plaintext + len, &len);
```

```
    /* Clean up */
    EVP_CIPHER_CTX_free(ctx);

    if(ret > 0) {
        /* Success */
        plaintext_len += len;
        return plaintext_len;
    } else {
        /* Verify failed */
        return -1;
    }
}
```

Code Snippet – C#

```
public byte[] AESGCMDecryptionNew(byte[] dataToDecrypt)
        {
            byte[] resultWithNoTag;
            GcmBlockCipher cipher = new GcmBlockCipher(new AesFastEngine());
            cipher.Init(true, new AeadParameters(new
KeyParameter(Encoding.UTF8.GetBytes("ABCGFEDTHGYJSTFGABCGFEDTHGYJSTFG")), 128,
Encoding.UTF8.GetBytes("dsfrehbndrft")));
            byte[] decryptedResult = new
byte[cipher.GetOutputSize(dataToDecrypt.Length)];
            int lenRes = cipher.ProcessBytes(dataToDecrypt, 0,
dataToDecrypt.Length, decryptedResult, 0);
            cipher.DoFinal(decryptedResult, lenRes);
            resultWithNoTag = new byte[decryptedResult.Length - 16];
            Array.Copy(decryptedResult, resultWithNoTag,
resultWithNoTag.Length);
            return resultWithNoTag;
        }
```