Metropolitan Stock Exchange of India Ltd.

Currency Derivatives

Non FIX Connect Application Programming Interface

Version 11.19
08/03/2022

Revision History

Ver. No.	Description	Revised Date
10.11	The following section is updated : Application host look up Message 8060 - Exchange Multi-Leg order cancellation • Order Attributes field is removed • Byte Size along with Description of Individual Leg Order Details is updated	04/08/2009
10.12	31038 – Market Picture • Reserved –Short field removed from message. • Message size modified to 248 from 250 Order by Price • Total No. of Trades- Type modified as Long	27/08/2009
10.13	The total number of bytes in message 7550 - Order Entry Rejection updated to reflect the correct value. Reserved field removed from Message 31038 – Market Picture	04/09/2009
10.14	• Message 31278 : Currency Conversion Rate Message Code is changed from 8070 to 31278 and Message Header is changed to Broadcast Message Header. Following messages are shifted from Broadcast Message portion to Unsolicited Messages portion • Message 8100: Market Wide OI Violation UMS • Message 8101:Market Wide OI Alert UMS List of Unsolicited Messages is updated	07/09/2009
10.15	• Type of Order value changed for Message 7800 - Multi-Leg order entry request • Order Attributes values changed for Nested Structure : Individual Leg Request Details	11/09/2009
10.16	• Logon Status description changed for Message 5002 – Successful/Failure Logon Response • System Information Download Request removed from Sequence of Operations. • Description is changed for Common Standards for the Document.	25/02/2010
10.20	• Status field in Trade Notification is modified. Trade Split Number is added in the following messages • Trade Notification	18/03/2010

Ver. No.	Description	Revised Date
	• Resubmit Trades For Approval • Trade Modification Acceptance • Trade Modification Request • Trade Modification Confirmation • Trade Modification Rejection • Institutional Trade Acceptance • Institutional Trade Rejection Size of the following structures are changed • 8000 - Trade Download / Notification • 8002 - Spread Trade Download / Notification • 8016 –Multi-Leg Trade Download / Notification • 8000 – Trade Download / Notification • 8002 - Spread Trade Download / Notification • 8500 – Resubmit for Approval Request • 8505 –Resubmit for Approval Confirmation • 8510 –Resubmit for Approval Rejection The List of Transaction Messages with possible responses is updated List of Unsolicited Messages is updated.	
10.21	Product Month field added in File format for Instrument Master	28/10/2010
11.00	All transactional messages are optimized to remove unnecessary or redundant fields. One of the examples being henceforth, system will function with Instrument Identifier only instead of whole Instrument Information.	15/01/2011
11.10	• 8105 – Trade Cancellation UMS is added. • Status field description is changed in Trade Notification. • Terminal Info field is introduced in Trade Notification. • Following fields are added in File format for Instrument Master. 1) Reserved 2) Group Id 3) Matching Type 4) Spread Type Combination • Message 4100 - System Information Download – Reserved fields added • Following message is added in Market to Limit Confirmation - Message 7875 – Market Order Price Confirmation • Following changes in nested structure	15/01/2011

Ver. No.	Description	Revised Date
	Conditional Order Cancellation Terms: 1) Reserved bit size is reduced to 5 from 6. • Following messages are introduced to accommodate Group Level Halt Functionality. 1) Message 9475 – Start Of Group Level Halt Download 2) Message 9500 – Group Level Halt Info 3) Message 9525 – End Of Group Level Halt Download • List of Transaction Messages is updated with 7875 – Market Order Price Confirmation. • List of Unsolicited Messages is update with the following messages: 1) Trade Cancellation UMS • 31067 – Change of Daily Price Range Notification is removed from Broadcast Messages and introduced in Unsolicited Messages section. • Where ever Spread Product is applicable the document is updated to indicate the Spread products also. • List of Unsolicited Messages is updated to incorporate Daily Price Range Notification on interactive channel. • Unique Identifier is added in Message - Logon Request. • Rule for Terminal Info is updated • Block Deal has been removed. • Broadcast message header message changed.	
11.11	• Broadcast message header message changed.	07/02/2011
11.12	• Change done in download Message 9500 – Group Level Halt Info. Possible values for the Status field updated. • Change done in unsolicited Message 9500 – Group Level Halt Info. Possible values for the Status field updated. • Note for Order with IOC Attribute under the Message 7500 - Order Entry Request is updated. • Replaced Message code 80033 with Message code 8033 in the Message 8036 - DI Cancel Request. • Change done in Message 8025 – Notification of Stop Loss Order Triggered. Data Type of Order Number modified to Unsigned int64	21/06/2011

Ver. No.	Description	Revised Date
	• Change done in Message 8040 – DI Acceptance. Byte Size of Instrument Information updated to 19	
11.13	• Section 8 for THRU Connectivity has been added	09/10/2012
11.14	Description for Session Id field for the following messages is updated • Message 7525 - Order Entry Confirmation • Message 7550 - Order Entry Rejection • Message 9100 - Orders Download SLBM Order Identifier field is added in following Messages • Message 7500 - Order Entry Request. • Message 9100 - Order Download. • Messages 7525 - Order Entry Confirmation • Messages 7550 - Order Entry Rejection SLBM Order Identifier field is added in Nested Structure 'Trade Notification' so following messages are impacted due to this • Message 8000 - Trade Download / Notification. • Message 8002 – Spread Trade Download / Notification. • Message 8016 – Multi-Leg Trade Download / Notification. Following changes are done in 'File format for Instrument Master' • New field 'IRFConfig Factor' has been introduced • New field 'SLBM Eligibility' has been introduced • New field 'Value Method' has been introduced • 4 new fields as 'Reserved' has been introduced Description of 'Terms of Daily Price Range' field has been changed • Description of 'Upper Daily Price Range' field has been changed • Description of 'Lower Daily Price Range' field has been changed Following Messages have been removed: • 31038 – Market Picture • 1833 – Market Close Statistics • Nested Structure- Broadcast Instrument Information • 6501 – Exchange Messages • 7215 – Most Active Products By Volume and Value Info • Nested Structure – Most Active Instrument Info	21/12/2012

Ver. No.	Description	Revised Date
	• 7216 – Top Gainers Losers Product Info • 31278 – Currency Conversion Rate • Nested Structure – Broadcast Message Header Formation of Broadcast Messages is removed which comes under 'Application Host Look Up' Application host look up New fields named 'Strategy Id' and 'Strategy Trigger Sequence No' have been added in the following messages • Message 7500 - Order Entry Request. • Message 7575 - Order Modification Request • Message 7650 - Order Cancellation Request • Message 7800 - Multi-Leg order entry request • Message 7725 - COC Request Market Protection Percentage field is added in the following messages • Message 7500 - Order Entry Request. • Message 7525 – Order Entry Confirmation • Message 7550 – Order Entry Rejection • Message 7575 - Order Modification Request • Message 7600 – Order Modification Confirmation • Message 7625 – Order Modification Rejection • Message 9100 – Orders Download • Message 7800 - Multi-Leg Order Entry Request • Message 7825 - Multi-Leg Order Entry Confirmation • Message 7850 - Multi-Leg Order Entry Error • Message 9101 - Multi-Leg Order Download • 8060 - Exchange Multi-Leg order cancellation Instrument Type field is added in the following messages • OI Violation Message • OI Alert Message • 8100 – Market Wide OI Violation UMS • 8101 – Market Wide OI Alerts UMS One Reserved field has been added in message 9050 - Message Download Request Two Reserved fields have been added in the following messages • 9100 – Orders Download • 7525 - Order Entry Confirmation • 7550 - Order Entry Rejection Description on Trade Value computation removed from Section System Behavior & Exceptions and provided as Notes to Value Method in File format for Instrument Master	

Ver. No.	Description	Revised Date
11.15	Three 'Reserved' fields have been added in Message Instrument Margin Attributes Due to change in above message, total size of below mentioned messages have been changed: • 4025 – Margin Change Notification • Instrument Margin Information	16/02/2016
11.16	New field for 'Options Pricing Model' added in 'File format for Instrument Master'.	01/07/2016
11.17	New rule 'Rules for Free Flow Text' applicable to field User Reference Text added in section Rules to be applied for the Messages. Hence, description of field User Reference Text updated in following messages: • 9100 - Orders Download • 9101 - Multi-Leg Order Download • 7500 - Order Entry Request • 7575 - Order Modification Request • 7725 - COC Request • 8005 - Trade Modification Request • 8030 - DI Entry Request • 8033 - DI Modification Request • 8036 - DI Cancel Request • 7800 - Multi-Leg order entry request Description of message 8050 - Exchange Order Cancellation Notification has been updated for Self-Match Prevention. Rule for Self – Match Prevention added in section Rules to be applied for the Messages New field for **'SMPF Order Identifier'** added in following messages: • 7500 - Order Entry Request • 7525 - Order Entry Confirmation • 7550 - Order Entry Rejection • 7575 - Order Modification Request • 7600 - Order Modification Confirmation • 7625 - Order Modification Rejection • 9100 – Orders Download	20/03/2017
11.18	Rules For Terminal Info have been updated for identification of orders emanating from Colocation	19/03/2018
11.19	New field having name 'Reserved' has been introduced in 'File format for Instrument Master'. Change in structure of Below mentioned Messages • 5001 - Logon Request	08/03/2022

Ver. No.	Description	Revised Date
	• 101 - Application Host Lookup Request Below mentioned New Nested Message introduced • LOGON REQUEST PASSWORD INFO • Application Host Lookup Request Password Info Changes made in System Behavior & Exceptions for Password Policy Below mentioned Rule introduced Rules for Encryption of Message	

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1 Introduction

This document describes the NonFIX API specifications for communicating with NonFIX Connect. NonFIX API specifications are based on the NonFIX protocol and cover transaction handling only. NonFIX Connect currently provides for translation of NonFIX messages only and does not provide the complete functionality provided by a NonFIX engine.

The exchange requires that the vendor/exchange's member undergo a conformance test upon completing development of the interface. The vendor/exchange's member must contact the exchange to schedule an appropriate period for testing.

The vendor/exchange's member may contact the Information Technology Division of the exchange to seek clarification at:

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3 Target Audience

This document is generated for information technology personnel, specially system designers and programmers of user organisations and third party software developers (referred as vendor).

4 Common Standards for the Document

- Inbound and Outbound are with reference to exchange i.e. inbound means as received by exchange and outbound means as sent by exchange.
- All fields are inbound fields unless specified.
- All outbound fields should be set to ‘0’ (for numeric) and blanks (for string) unless specified
- For dual fields input should be ‘0’ (for numeric) and blank (for string) unless specified.
- All the messages contain a message header at start of the message.
- All date time fields shall be specified in number of seconds since ’01-01-1970 00:00:00’ Hrs (Local time of Exchange and not UTC). This is applicable to inbound and outbound fields.
- All price fields shall be subject to implicit decimal as identified in Decimal Locator Field of Instrument master. E.g. Rs. 5974.50 will be specified as 597450 with value in Decimal Locator as 100
- All numeric fields are unsigned unless specified.
- All string fields should be filled with trailing spaces terminated by a null character.
- Incase of any invalid field or value within field or incorrect message length the message shall be rejected.
- All messages shall be byte aligned.
- Valid characters in string for request messages are: 0 – 9, A – Z, a – z, <, >, =, -, @ and <space>.
- All reserved fields shall contain space for string and ‘0’ for numeric unless specified.
- All numeric fields are denoted in decimal system.

5 System behavior & Exceptions

- If the order price of the outstanding order of any validity goes beyond the daily price band, then the order is cancelled on the next startup of the system.
- Password Policy
  - The password policy requires that :
    - It should be Minimum of 8 characters in length.
    - It must be composed of following three character sets:
      - ✓ Upper / Lower 26 letters of English Alphabet [A-Z][a-z]
      - ✓ Ten digits [0-9]
      - ✓ Special Characters (32 characters) - (` ~ ! @ # $ % ^ & * ( ) _ + - = { } | [ ] \ : ; ' < > ? , . /)
    - The password will be checked against Login ID. The numeric part of the password should not be fully composed ONLY of numeric that is in Login ID.

      For instance, login id is "21356", the following are INVALID passwords:

      min653? [digits are only from "21356"]

      KM5P6T% [digits are only from "21356"]

      "ADP17:", "PO~ad159", "A$$8MC" etc. would be strong passwords.
    - Space is not a valid password character.

- All the Quantity in the system will be in terms of LOT only.
  - For example, if for a U/L Asset, the product size is of 5 KGs and the quotation is per 10 Grams and if the User wishes to buy 15 KGs, then he will put 3 lots. The quantity 3 should be sent to exchange without any conversion.
  - To compute the value of the trade, following formula should be used

    Trade Value = Round(Rate * (Price Numerator / Price Denominator) * Quantity * Lot size * (General Numerator / General Denominator), 2)

In case of Options, wherever only premium is used to ascertain value, in the above formula, rate should be replaced with premium. Wherever only Strike Price is used to ascertain value, in the above formula, rate should be replaced with Strike Price and wherever (Strike Price + Premium) is used to ascertain value, in the above formula, rate should be replaced with (Strike + Premium).

For example, if Futures product of Silver is to be traded in lots of 30 KGs, Quotation Price is per ounce and the Price is in Cents then with following data:

Rate = 705.85 Cents (i.e. 7.0585$)
Trading Unit : KGs

Lot Size = 30
Price Numerator = 1 (multiplier to convert value from Cents to $)
Price Denominator = 100
General Numerator = 3215075 (alternatively can be 32.15075)
General Denominator = 100000 (alternatively can be 1 based on numerator)

Trade Value = ROUND(705.85 * (1 / 100) * 1 * 30 * (3215075 / 100000),2) = 6808.08

- The Options product shall have underlying as Futures Product.
- Trade Modification is allowed for Institutional Trade also.
- In case Order is entered / modified / cancelled from Member Admin corresponding request message will be passed to Vendor.
- In case of defaults of custodian / institution, the position will be closed out without conducting the Auction.
- The provision for Auction Trading for Buy In and Auction Trading Sell Out is also made in the structure, the business interpretation shall be circulated separately whenever the exchange plans to implement the same.
- In case of Auction, the exchange will not allow order cancellation *n seconds* before the close of Auction session. Also during the last *n seconds,* order modification is allowed only for betterment of price or quantity i.e. for the sell order, price can be decreased but cannot be increased while for buy order, price can be increased but cannot be decreased. For both the buy and sell order, quantity can be increased but cannot be decreased. The exact value for *n seconds* shall be communicated by the exchange through the circular at the appropriate time.
- In Post Close Session, the Best Five of the instrument will get cleared off on first order request of that instrument. The pending GTD/GTC orders will not be considered for matching in post close. All the pending orders of Post Close session will get cancelled at the end of the session. Market Close Statistics will not have data of Post Close Trades.

6 Sequence of Operations

Following sequence of operation should be followed:

- Logon Request
- Error Code Download Request
- Message Download Request
- Limits Download Request
- Order Entry / Modification / Cancellation Request
- Logoff Request

Note that no request should be sent until the response for the earlier request is received from the exchange.

- The system will not allow more than one download or triggered alert history request for connection established. It would be necessary to close the connection and re-login for next request for downloads.

The exchange has a threshold limit to receive number of requests from one connection. If this limit is breached, the exchange would disconnect the connection. The limit can be obtained from the exchange.

The Vendor should ensure that if they do not get response from the exchange for ‘n’ numbers of requests send by them, then they should stop sending fresh request to the exchange. The figure for the same can be obtained from the exchange.

7 Network and Protocol

- Separate socket shall be used for Interactive and Broadcast messages.
- The IP address and port number to connect to Exchange for Interactive messages and Broadcast messages shall be provided once the vendor has completed the empanelment procedures and is ready for testing the application. The IP address for Interactive and Broadcast may be same or differ. The port number would be different for Interactive and Broadcast.
- All messages sent to exchange should be compressed using Xceed Zip version 4.2
- All messages received should be uncompressed using Xceed Zip version 4.2

  Note : Xceed Zip compression functionality is provided by Xceedzip.dll (COM Component 4.2) in class XceedCompressionClass which resides under XceedZipLib (Namespace). Methods used are Compress and Uncompress for compressing and decompressing data respectively.

7.1 Application Host Look Up

The third party applications are expected to first connect to application host look up service with authentic logon user credentials. On successful validation, the host details (IP address and port numbers) will be sent to the connecting ISV application along with private token key which will be used to connect to the actual messaging gateways. The ISV application is expected to disconnect from application host lookup service after receiving the host details.

It is recommended that the ISV applications provide a facility in their system whereby they can connect to a previously received gateway details and token. This feature will be used only in case the ISV application is not able to connect to the application host lookup.

<u>Formation of Transaction Messages</u>

- The first 5 characters of the message shall be uncompressed and shall contain the length of message which is compressed. The rest of the data is message which should be read after uncompressing. The message length in first five characters shall be padded with zeros. For example : <00156><actual message in compressed form> where 00156 is length of the message after compression.
- Similarly, while sending the message to the exchange, the message should be compressed and then should be prefixed with the compressed message length in uncompressed form of 5 characters. The message length in first five characters should be padded with zeros.

8 THRU Connectivity

THRU - Trading **Hub** and Router application will be hosted at member premises to ensure better performance and effective utilization of bandwidth.

ISV Applications hence forth will have to provide following options to users

1. As per current implementation, direct connection to exchange.
2. Connecting to exchange via THRU instead of direct connection.

ISV application will connect to THRU which will host TCP ports for Host Lookup and Gateway(s). The Logon sequence will remain the same.

THRU implements invitation based protocol, here ISV application on successful connection will receive a default invitation response. Invitation response will contain invitations for maximum no of messages ISV application can send to exchange via THRU. These will be predetermined maximum no of messages for which an invitation response can be sent from THRU. Once the specified invitations are consumed by ISV application, THRU will send the next invitation response.

- ISV application sending any message (except special invitation request message) without invitation will be responded with an Error Response and will be disconnected.
- In case, ISV receives messages more than available invitation numbers, ISV application can send special invitation request with the required invitation numbers (i.e. Total messages received by ISV application - Available invitation numbers).
- THRU will send response to special invitation request with requested numbers or less.
- ISV application can send request for special invitation once it receives response of any earlier request for special invitation.
- In case, ISV application receives response of special invitation request with numbers less than requested, ISV application needs to send one more special invitation for the shortfall.
- THRU will reject request for special invitation in case previously sent special invitation request has not been responded.

Note
All message sent to or received from THRU shall be non-compressed message.

Format of the message will be as follows

- The first 5 characters of the message shall contain the length of message. The rest of the data is actual message. The message length in first five characters shall be padded with zeros. For example : <00135><Order Entry Message> where 00135 is length of the message.
- Similarly, while receiving the message from THRU it will be prefixed with 5 characters message length. The message length in first five

characters will be padded with zeros. For example : <00153><Order Entry Confirmation Message> where 00153 is length of the message.

Connectivity diagram

Steps to perform

1. ISV Application (Non FIX Vendor) connection mechanism
    a. IP of THRU and Port provided by exchange will be used to exchange messages with Host Lookup.
    b. ON connection, THRU will send an Invitation response to ISV Application.
    c. ISV Applications on receiving invitation response checks no. of invitations and sends next message i.e. Host Lookup Request Message to THRU.
    d. THRU responds with Host Lookup Response and disconnects ISV application.
    e. ISV application opens Host Lookup Response message and reads IP and port information. The IP/Port specified is IP/Port of THRU.
    f. ISV application connects to the IP and port specified by THRU.
2. On successful connection, THRU sends Invitation response to ISV application.
3. On receiving Invitation, ISV application checks the no. of invitation, depending on no. in invitation response ISV application can send the messages. For example, if no. sent by THRU =1, ISV application can send only one message.
4. THRU sends next invitation as per the predetermined value.
5. In reply to invitation response received in step 4, ISV application sends next message.

8.1 List of Messages Supported

8.1.1 31521 - Invitation Request

Message Code : 31521
Source : Vendor

Name	Type	Byte Size	Description
Message	Nested	12	

Header	Structure		
Message ID	Long	4	Unique message id of this request
Invitations	Short	2	No of invitations to allocate for the connected ISV application.
Total		18	

8.1.2 31522 – Invitation Response

Message Code : 31522
Source : THRU

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	Error Code field in the structure will indicate the numeric representation of error.
Message ID	Long	4	Message ID from Invitation Request will be set here. If this is THRU generated invitation it will set as -1
Invitations	Short	2	No of invitations allocated to connected ISV application.
Total		18	

8.1.3 31523 – Error Response

Message Code : 31523
Source : THRU

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	Error Code field in the structure will indicate the numeric representation of error.
Message Data	Bytes	1024	Max length is 1024 in bytes. Message Data contains request sent by ISV application rejected by THRU due to error.
Total		1036	

9 Rules to be applied for the Messages

The vendor should implement the rules in their system to ensure that orders breaching the rules are not forwarded to exchange.

The vendor should keep track of Total Order Quantity, Quantity Traded, Total Disclosed Quantity, Pending Disclosed Quantity, Quantity Traded for the Day, Total Pending Quantity and Order Time for sending it along with order modification or cancellation request. This should be updated on every trade confirmation and/or order modification/cancellation.

For all timestamp validation, the Exchange Time Stamp in Message Header should be referred.

1. General Rule for Order Entry
   1. Order Entry is not allowed in the following conditions
      - Product has expired
      - Product does not exists in the system
   2. Order Quantity
      - Order Quantity should be greater than zero.
      - Order Quantity should be in multiple of marketable lots
   3. Disclosed Quantity
      - Disclosed Quantity should not be more than the ordered Quantity.
      - Disclosed Quantity should be >= zero.
      - Disclosed Quantity should be in multiple of marketable lots
      - If Disclosed Quantity is zero, it will be treated as no disclose Quantity and the entire order quantity shall be visible to the market.
      - After the initial disclosed quantity is matched, subsequent disclosed quantity shall be visible to the market.
      - The minimum disclose quantity percentage shall be validated by the exchange and order would be rejected by exchange in case the condition is not fulfilled.
   4. Order Price
      - Order Price should be >= zero for non-spread products. In case of Spread instrument or Spread IOC orders, negative and zero price are allowed.
      - In case order price is zero, it will be treated as market order, for non-spread order. For spread instruments, zero will be taken as valid price. Only Order attributes shall be used for identify market order. Market Price is not a valid attribute for Spread IOC Orders.
      - Order Price should be in multiple of Price tick.
      - The validation of the Daily Price Band shall be done by the exchange system.

- In Post Close Session, order should always carry price as zero and the Order attribute should identify the order as market order.

5. Trigger Price

   - Trigger Price is mandatory for Stop Loss Order i.e. Type of Order as 3
   - Trigger Price should be greater than zero.
   - Trigger Price should be in multiple of Price Tick.
   - Trigger Price should be <= Order Price for Buy Order.
   - Trigger Price should be >= Order Price for Sell Order

6. Participant ID

   - Particpant ID is allowed for orders of type INST

2. General Rule for Order Modification

   Following values are allowed for modification for outstanding Orders

   - Order Price
   - Trigger Price (in case of Stop Loss Order)
   - Pending Quantity
   - Disclosed Quantity
   - Type of Order (only from Stop Loss to Regular Order)
   - Order Validity

   Effect of Order Modification on Price/Time priority

FIELD	COMMENTS
Order Price	Changing the order price will always result in the order losing its time priority.
Order Quantity	The Quantity of an order can be reduced any number of times without the order losing its time priority. However, increasing the Quantity of an order will always result in the order losing its time priority.
Order Validity	Changing order validity retains time priority
Disclose Quantity	Same as in Quantity. In addition, the changed Disclosed Quantity should not be more than the remaining order Quantity.
Stop Loss	A Stop Loss order can be changed to a normal limit order by removing the Stop Loss attribute. The Stop Loss limit and trigger price can also be changed. In each of these cases the order loses its time priority.

2. Order Types

The valid order types are :

1. Regular Lot : Market or Limits Orders with validity. In case of Auction and Spread IOC orders, only Regular Lot is allowed.
2. Stop Loss : Orders with Trigger price

3. Order Validity

The order validity is informed to the exchange using OrderAttributes. Each request should have only one validity and the same should be validated by the vendor before forwarding the request to the exchange. Note that in case of Auction, valid validity is only EOS while in Spread IOC Orders, valid validity is only IOC.

1. Day
   - All outstanding orders with this validity are cancelled by the system at the end of trading day.

2. Good Till Session (EOS)
   - All outstanding orders with this validity are cancelled by the system at the end of trading session.

3. Good Till Date (GTD)
   - If the order is GTD order, then the date upto which order should be retained should be specified in terms of number of seconds from 01-01-1970 00:00:00 hours.
   - The last date upto which order is valid should have time as 23:59:59 hours.
   - The Last Date should not be more then the Product End Date.
   - In case the order is to be kept in the system till end of day, then GTD should be sent with system date and time as 23:59:59.
   - All GTD orders are cancelled at the end of last trading session for the date specified in GTD.

4. Good Till Cancelled (GTC)
   - All Good till cancelled orders are valid till product expiry.
   - This allows an order in the system until it is cancelled.
   - The order is canceled by the system automatically if it remains outstanding at the end of product expiry.

5. Immediate Or Cancel (IOC)
   - This forces the order to match immediately, else be cancelled.
   - In case the order trades partially, the remaining part is cancelled.

4. Rule for Terminal Info

   The Terminal Info should be a 15 digit number Unique number where
   - first 12 digits should be
     - For order generated through CTCL mode it should be valid Exchange CTCL Unique code with first 6 digits as Pin Code of the Terminal Location, next 3 digits as Branch ID of the Terminal Location and next 3 digits as Running Serial number of the Terminal within the Branch
     - For order generated through IBT mode it should be "111111111111"
     - For order generated through DMA mode it should be "222222222222"
     - For order generated through wireless technology mode it should be "333333333333"
   - 13th digit should be
     - If order is not generated through program trading software, it should be "0".
     - For order generated through program trading software it should be "1"
     - For order generated through Smart Order Routing without program trading software it should be "2"
     - For order generated through Smart Order Routing with program trading software it should be "3"
     - For order generated through program trading software emanating from Colocation it should be "4"
     - For order generated through Smart Order Routing with program trading software emanating from Colocation it should be "5"
   - 14th and 15th digit should be valid Vendor Code / In-House CTCL Code for member

5. Rule for Spread IOC Orders

   Spread IOC Orders are permitted within the same underlying for calendar spread position. Such orders shall be Regular Lot limit orders with Immediate or Cancel (IOC) validity. These orders will not form the part of outright instrument's order download. There will be a separate download for such orders. The trades will happen directly in the outright instrument.

6. Rules for Post Close Session

   In Post Close Session, the Best Five of the instrument will get cleared off on first order request of that instrument. The pending GTD/GTC orders will not be considered for matching in post close. All the pending orders of Post Close session will get cancelled at the end of the session.

7. Rule for Multi leg Orders

   Multi leg order can be for 2 or 3 legs. 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 product may belong to different U/L Asset with different market lots and decimal locator. Such orders should be with Immediate or

Cancel (IOC) validity. Any of the products (leg) should not be Auction or Spread product. Each leg should have individual price and qty and order type.

8. Rule for Market Price Protection

- Market Price Protection (%) must be >= 0.00 and <= 99.99%
- The Market Price Protection (%) should be multiplied by 100. For e.g. if in a particular request Market Price Protection (%) is to be sent as 2% then in the message 200 should be sent. Similarly, response would be sent as 200 indicating that 2% Market Price Protection was applied to the respective request.
- Order Type must be Regular Lot or Stop Loss
- Price must be 'Market'
- Order must be placed in Normal Trading Session
- If Market Price Protection % Functionality is not applicable at exchange and if Market order with Specific Market Price Protection % is placed then that Market order would get processed considering Market Price Protection % as not applicable
- If Market Price Protection % is defined at exchange and
    - If the Market Price Protection % <= the Market Price Protection % applicable at the exchange, the request will be accepted at the Market Price Protection % mentioned in the request
    - If the Market Price Protection % > the Market Price Protection % applicable at the exchange, the request will be accepted at the Market Price Protection % applicable at the exchange
- Buy Market Price Protection Limit would get computed as 'Counter side Touch Line/Same side Touch Line/LTP/Close Price/Base Price * (1 + Market Price Protection %)' and Rounded to Price Tick and within Product's DPR Range. Sell Market Price Protection Limit would get computed as 'Counter side Touch Line/Same side Touch Line/LTP/Close Price/Base Price * (1 - Market Price Protection %)' and Rounded to Price Tick and within Product's DPR Range.
- Order Response would be send at Derived Market Price Protection Limit
- Order Matching –
    - BUY Market Order would get executed with Trade Price upto Market Price Protection Limit or below
    - SELL Market Order would get executed with Trade Price upto Market Price Protection Limit or above
- Partially Traded Market Order with Market Price Protection Limit would get converted to Passive Order at that Order's Last Traded Price. In case of 0 trades, Market Order with Market Price Protection Limit would get Converted To Passive Order at that Product's Same side Touch Line/LTP/Close Price/Base Price

9. Rule for Algorithm Trading Identifier

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 applications should contain the Strategy Id. If the Order Entry / Modification / Cancellation request contains a Strategy ID other than assigned to the User the respective Order Entry / Modification / Cancellation request shall be rejected by the system.
- The users can create product specific strategies with different parameters and definition for strategy approved by the exchange and assign Number as 'NN' (say 01 for product 1 and 02 for product 2 etc;). 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 yymmddNNnnnnnnnnn; where
    - yymmdd should be the current date
    - 'NN' is Number stored by third party applications for product specific strategy
    - Small n's are running sequence numbers that should be incremented with every request.

    Thus, the first part yymmddNN shall represent user defined strategies for a particular date.
- Each time there is need of sending entry or modification or cancellation request to exchange, third party application is expected to generate new STSN.
- The STSN should also be stored with relevant values of Trigger / Opportunity (Say member strategy is – 'Sync near month prices to far month' then for each of the order entry / modification / cancellation for far month, member should send STSN and also store values of near month prices against each STSN and values defined by user also i.e. spread).
- Third party applications should also have the 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.

10. Rule for Self-Match Prevention

- Self-Match refers to trades where both buyer and seller client are same. Such Self-Match does not serve any economic purpose of Members/Clients instead Members/Clients have to incur additional expenses like Transaction charges, CTT, etc.
- 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, system cancels the active or passive order as per SMPF Order Identifier received with order instead of executing the self-match trade.

- Buy and Sell Orders having the same combination of 'Trading Member Id – User Id – CTCL Id – Client Code' or same PAN are considered as self – match orders and will not be matched with each other.
- Active FOK order is cancelled when after excluding self-match orders full quantity is not available to fill the FOK order.
- Self-Match Prevention is made applicable on RL and triggered SL orders received during the normal session.
- Self-Match Prevention is not applicable on the following type of orders:
    - Spread IOC and Multi leg Orders

11. Rules for Free Flow Text

Comma (,) is not allowed in string for request messages.

12. Rules for Encryption of Message

16 Characters for Encryption : [***~!@#$%^&*={};<>?***]

To encrypt any information in TripleDES, it requires having one Key and the other IV factor. For simplicity, we can refer to Key as Key1 and IV factor as Key2. The length of Key (Key1) should be 24 (fixed) and the length of IV factor (Key2) should be 8 (fixed). Please note that both the keys are case sensitive.

The format for the Key (Key1) will be as follows:
[<IV Factor (Key2)><Next 16 characters for encryption as provided above>]

IV Factor (Key2) will be the current password. In case the current password is more than 8 characters and which can be of maximum up to 10 characters then in such case, only first 8 characters must be considered for Key2.

Example:
If the current password is [***abc.1234***] then expected IV factor is [***abc.1234***].

The encryption key (Key1) and IV factor (Key2) as described above should be used to encrypt the password/new password information.

Example:
Case 1: Login with an existing password

16 characters published by exchange is [***~!@#$%^&*={};<>?***]
Current Password is [***abc.2345***]

Key1=***abc.2345~!@#$%^&*={};<>?***
Key2=***abc.2345***

LOGON REQUEST PASSWORD INFO
Password=abc.2345\0\0\0
New password=\0\0\0\0\0\0\0\0\0\0\0

Information to be encrypted will be the Current password & New password as below: [***abc.2345\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0***], i.e. the total length to be encrypted should be as mentioned in **Total** of LOGON REQUEST PASSWORD INFO

Outbuffer = Encrypt(Key1, Key2, LOGON REQUEST PASSWORD INFO)

Set following fields of 5001 - Logon Request

Encrypted Data Message Size = length of Outbuffer
Encrypted Data Buffer= Outbuffer

Case 2: New password to be set

16 characters published by exchange is [***~!@#$%^&*={};<>?***]
Current Password is [***abc.123456***]
New password is [***xyz.675747***]

Key1=***abc.1234~!@#$%^&*={};<>?***
Key2=***abc.1234***

LOGON REQUEST PASSWORD INFO

Password=abc.123456\0
New password= xyz.675747\0

Information to be encrypted will be the Current password & New password as below: [***abc.123456\0xyz.675747\0***], i.e. the total length to be encrypted should be as mentioned in **Total** of LOGON REQUEST PASSWORD INFO

Recommendation:
It is recommended that the 16 characters as published by the Exchange should be saved in the UI such that the user will have to type it only once during the first logon. Rest of the time it will be read directly from the saved location. It is also recommended that the 16 characters as published by the Exchange should not be masked viz. with no asterisk or any other representation.

Code Snippet For Reference

Following are the code snippets of TripleDES implementation in different languages:

12.1 Java Implementation:

```
import javax.crypto.Cipher;
import javax.crypto.spec.IvParameterSpec;
import javax.crypto.spec.SecretKeySpec;

public class CTripleDESImplementation
{
   private String key;     //Key
   private String initializationVector;      //IV Factor
```

```
      //Constructor
      public CTripleDESImplementation(String key, String
                                      initializationVector)
      {
         this.key = key;
         this.initializationVector = initializationVector;
      }

      //Encryption method. Paramter being the string to be
      //encrypted.
      public byte[] encrypt(String plainText) throws Exception
      {
         byte[] plaintext = plainText.getBytes();

         byte[] tdesKeyData = key.getBytes();
         byte[] myIV = initializationVector.getBytes();

         //Instantiating Cipher class instace
         Cipher c3des =
                    Cipher.getInstance("DESede/CBC/PKCS5Padding");

         SecretKeySpec myKey = new SecretKeySpec(tdesKeyData,
                                                 "DESede");
         IvParameterSpec ivspec = new IvParameterSpec(myIV);

         //ENCRYPT_MODE
         c3des.init(Cipher.ENCRYPT_MODE, myKey, ivspec);
         byte[] cipherText = c3des.doFinal(plaintext);

        return cipherText;
      }
   }
```

12.2 C# IMPLEMENTATION:

```
using System;
using System.Diagnostics;
using System.Security.Cryptography;
using System.Text;

public class CTripleDESImplementation
{
   private byte[] EncryptionKey;    //Key
   public byte[] EncryptionKeyStr
   {
      get { return EncryptionKey; }
      set { EncryptionKey = value; }
   }

   private byte[] IV;   //IV Factor
   public byte[] IVStr
   {
      get { return IV; }
      set { IV = value; }
   }

   //Encryption method. Parameter being string to be encrypted,
   public byte[] Encrypt(byte[] textToEncrypt)
   {
     TripleDESCryptoServiceProvider tdes = new
```

```
                                TripleDESCryptoServiceProvider();

     tdes.Key = EncryptionKey;
     tdes.IV = IV;

     byte[] encryptedBuffer =
     tdes.CreateEncryptor().TransformFinalBlock(textToEncrypt, 0,
                                                textToEncrypt.Length);


   return encryptedBuffer;
   }
}
```

12.3 MANAGED C++ IMPLEMENTATION:

```
#pragma once
using namespace System;
using namespace System::Security::Cryptography;
using namespace System::Text;
using namespace System::Globalization;
using namespace System::Diagnostics;
using namespace System::Runtime::InteropServices;

public ref class CTripleDESImplementation
{
   private:
      array<Byte>^ m_cEncryptionKey;      //Key
      array<Byte>^ m_cIV;                 //IV Factor

    public:
      array<Byte>^ GetEncryptionKey()
      {
         return m_cEncryptionKey;
      }

      void SetEncryptionKey(String^ pcEncryptionKey)
      {
         m_cEncryptionKey
         = Encoding::ASCII->GetBytes(pcEncryptionKey);
      }

      array<Byte>^ GetIV()
      {
         return m_cIV;
      }

      void SetIV(String^ pcIV)
      {
         m_cIV = Encoding::ASCII->GetBytes(pcIV);

      }

      //Constructor
      CTripleDESImplementation(String^ pcEncryptionKey,
                               String^ pcIV)
      {
        SetEncryptionKey(pcEncryptionKey);
        SetIV(pcIV);
      }
```

```
        //Encrypt method. Parameter being the string to be encrypted.
        array<Byte>^ Encrypt(array<Byte>^ cPlainText)
        {
           TripleDESCryptoServiceProvider^ tdes = gcnew
                                 TripleDESCryptoServiceProvider();

           tdes->Key       = m_cEncryptionKey;
           tdes->IV        = m_cIV;
        array<Byte>^ CipherText =
        tdes->CreateEncryptor()->TransformFinalBlock
              (cPlainText, 0, cPlainText->Length);


        return CipherText;
       }
};
```

12.4 LINUX GCC IMPLEMENTATION:

- The user of this library has to adhere to the Software Licensing Terms as mentioned in the "License.txt":
  Link: https://www.cryptopp.com/License.txt

- The latest Crypto++ objects can be downloaded from the Crypto++ website:
  Link: https://www.cryptopp.com (Dated: 11-10-2016, Crypto++ 5.6.5, U.S. Original Website) & same should be built & link accordingly before using.

- The Linux machine configuration on which the code was tested is as follows:
  - **O.S.:** Red Hat Enterprise Linux Server release 6.5 (Santiago).
  - **gcc --version:** gcc (GCC) 4.9.1 20140922 (Red Hat 4.9.1-10).
  - **g++ --version:** g++ (GCC) 4.9.1 20140922 (Red Hat 4.9.1-10).

SAMPLE IMPLEMENTATION USING API:

```
#include <iostream>
using namespace std;

#include <vector>

#include "cryptopp/cryptlib.h"
using CryptoPP::Exception;

#include "cryptopp/files.h"
#include "cryptopp/filters.h"
using CryptoPP::StreamTransformationFilter;
using CryptoPP::Redirector;
using CryptoPP::ArraySink;
using CryptoPP::ArraySource;

#include "cryptopp/des.h"
using CryptoPP::DES_EDE3;

#include "cryptopp/modes.h"
using CryptoPP::CBC_Mode;
```

```
#include "cryptopp/secblock.h"
using CryptoPP::SecByteBlock;
#define TDES_SUCCESS     0
#define TDES_FAILURE    -1

short EncryptData(const unsigned char* pcPublicKey, const char* pcIV, const
char* pcData, const int nDataLen, char* pcEncryptedData, int &nEncDataLen)
{
    short lnReturn = TDES_SUCCESS;

    SecByteBlock lcPublicKey(pcPublicKey, DES_EDE3::DEFAULT_KEYLENGTH);
    byte lcInitialVector[DES_EDE3::BLOCKSIZE];

    memcpy(lcInitialVector, pcIV, DES_EDE3::BLOCKSIZE);

    std::vector<byte> lcPlainData, lcCipherData;
    lcPlainData.insert(lcPlainData.begin(), pcData, (pcData + nDataLen));

    lcCipherData.resize(nDataLen + DES_EDE3::BLOCKSIZE);

    try
    {
        CBC_Mode< DES_EDE3 >::Encryption lcEncryption;
        lcEncryption.SetKeyWithIV(lcPublicKey, lcPublicKey.size(),
lcInitialVector);

        ArraySink lcArraySink(&lcCipherData[0], lcCipherData.size());
        ArraySource(lcPlainData.data(), lcPlainData.size(), true,
                        new StreamTransformationFilter(lcEncryption, new
Redirector(lcArraySink)));

        lcCipherData.resize(lcArraySink.TotalPutLength());
    }
    catch(const Exception& e)
    {
        std::cerr << e.what() << std::endl;

        lnReturn = TDES_FAILURE;
        return lnReturn;
    }

    memcpy(pcEncryptedData, lcCipherData.data(), lcCipherData.size());
    nEncDataLen = lcCipherData.size();

    return lnReturn;
}

short DecryptData(const unsigned char* pcPublicKey, const char* pcIV, const
char* pcEncryptedData, const int nEncDataLen, char* pcData, int &nDataLen)
{
    short lnReturn = TDES_SUCCESS;

    SecByteBlock lcPublicKey(pcPublicKey, DES_EDE3::DEFAULT_KEYLENGTH);
    byte lcInitialVector[DES_EDE3::BLOCKSIZE];

    memcpy(lcInitialVector, pcIV, DES_EDE3::BLOCKSIZE);

    std::vector<byte> lcCipherData, lcPlainData;
    lcCipherData.insert(lcCipherData.begin(), pcEncryptedData, (pcEncryptedData
+ nEncDataLen));
    lcPlainData.resize(nEncDataLen);
```

```
    try
    {
        CBC_Mode< DES_EDE3 >::Decryption lcDecryption;
        lcDecryption.SetKeyWithIV(lcPublicKey, lcPublicKey.size(),
lcInitialVector);

        ArraySink lcArraySink(&lcPlainData[0], lcPlainData.size());
        ArraySource(lcCipherData.data(), lcCipherData.size(), true,
                        new StreamTransformationFilter(lcDecryption, new
Redirector(lcArraySink)));

        lcPlainData.resize(lcArraySink.TotalPutLength());
    }
    catch(const Exception& e)
    {
        std::cerr << e.what() << std::endl;

        lnReturn = TDES_FAILURE;
        return lnReturn;
    }

    memcpy(pcData, lcPlainData.data(), lcPlainData.size());
    nDataLen = lcPlainData.size();

    return lnReturn;
}


struct LogOnRequestPasswordInfo
{
    char cPassword[9];
    char cNewPassword[9];
};

//Sample CTCL Wrapper Structure "LogOnRequest", refer to original CTCL logon
request as given in API. Below structure is only to give rough idea how
LogOnRequestPasswordInfo should be used in LogOnRequest
struct LogOnRequest
{
    int nLogOnId;
    int nTradingMemberId;

    int  nEncryptedBufferSize;
    char cEncryptedDataBuffer[512];
};

int main(int argc, char** argv)
{

    short lnRetValue =  0;

    LogOnRequestPasswordInfo    lstPasswordInfo;
memset(lstPasswordInfo.cPassword, 0, 9);//memset all fields with zero
    memset(lstPasswordInfo.cNewPassword, 0, 9);//memset all fields with zero

    strncpy(lstPasswordInfo.cPassword, "xy.12", 5); //last parameter is length
of password string i.e. xy.12 hence 5
                                                    //max password length
should be 8.
//strncpy(lstPasswordInfo.cPassword, "xyz.456", 7); //last parameter is length
of password string i.e. xyz.456 hence 7
                                                    //max password length
```

```
should be 8.

    strncpy(lstPasswordInfo.cNewPassword, "pqr.345", 7);//last parameter is
length of password string i.e. pqr.345 hence 7
                                                        //max password length
should be 8.

    int   lnDataLen = sizeof(lstPasswordInfo);

     //Generate these keys as per given guidelines in API{
     char lcPublicKey[16 + 1] = {0};
     strncpy(lcPublicKey, "~!@#$%^&*={};<>?", 16); //public key is of 16 bytes
in length, extra 1 byte is for null termination

     //if password is xy.12, lcKey1 and lcKey2 will be
    char lcKey1[24 + 1] = {0}; //memset key1, extra 1 byte is for null
termination
     strncpy(lcKey1, "xy.12|||~!@#$%^&*={};<>?", 16); //as per API guideline if
password is less than 8 bytes then remaining bytes should be filled with '|'
character and append with public key

    char lcKey2[8 + 1] = {0};//memset key2, extra 1 byte is for null
termination
    strncpy(lcKey2, "xy.12|||", 8); //as per API guideline if password is less
than 8 bytes then remaining bytes should be filled with '|' character

     /*
     //if password is xyz.456, lcKey1 and lcKey2 will be
     //strncpy(lcKey1, "xyz.456|~!@#$%^&*={};<>?", 16); //as per API guideline
if password is less than 8 bytes then remaining bytes should be filled with '|'
character and append with public key
     //strncpy(lcKey2, "xyz.456|", 8); //as per API guideline if password is
less than 8 bytes then remaining bytes should be filled with '|' character

     //if password is xyz.4567, lcKey1 and lcKey2 will be
     //strncpy(lcKey1, "xyz.4567~!@#$%^&*={};<>?", 16); //as per API guideline
if password is less than 8 bytes then remaining bytes should be filled with '|'
character and append with public key
     //strncpy(lcKey2, "xyz.4567", 8); //as per API guideline  password is not
less than 8 bytes then there is no need to fill '|' character
     */
     //Generate these keys as per given guidelines in API}

    char lcEncryptedBuffer[512];
    memset(lcEncryptedBuffer, 0, 512);//memset all fields with zero
    int  lnEncryptedBufferLen = 0;

    lnRetValue = EncryptData((unsigned char*)lcKey1, lcKey2,
(char*)(&lstPasswordInfo), lnDataLen, lcEncryptedBuffer, lnEncryptedBufferLen);
    if(TDES_SUCCESS != lnRetValue)
    {
        cout << "EncryptData failed" << endl;

       lnRetValue = -1;
        return lnRetValue;
    }
//The Encrypted data will be available in the "lcEncryptedBuffer" and the
Encrypted data length will be available in the "lnEncryptedBufferLen"

    LogOnRequest lstLogOnRequest;
    memset(&lstLogOnRequest, 0, sizeof(LogOnRequest));// memset all fields of
LogOnRequest with zero
```

```
    lstLogOnRequest.nLogOnId = 11001;
    lstLogOnRequest.nTradingMemberId = 11000;

    memcpy(lstLogOnRequest.cEncryptedDataBuffer, lcEncryptedBuffer,
lnEncryptedBufferLen);
    lstLogOnRequest.nEncryptedBufferSize = lnEncryptedBufferLen;

       //Fill other required fields of LogOnRequest and send to Exchange Non-
Fix Gateway

    getchar();
    return 0;
}
```

10 List of Transaction Messages with possible responses

ID	Message Description	ID	Message Description
101	Application host lookup request	102	Successful/Failure application host lookup response
5001	Logon Request	5002	Successful/Failure Logon Response
5004	Logoff Request	5005	Logoff Response
9050	Message Download Request	9075	Start of Message Download Response
		4175	Change of Daily Price Range Notification
		9100	Orders Download
		8000	Trade Download / Notification
		8002	Spread Trade Download / Notification
		9101	Multi-Leg order download
		8016	Multi-Leg trade download / notification
		8020	Trade Modification Acceptance
		8040	Delivery Instruction Acceptance
		9150	End of Message Download
9225	Triggered Alert History Request	9250	Start of Triggered Alert History
		9275	Triggered Alerts History
		9300	End of Triggered Alert History
9325	Limits Download Request	9350	Limits Download Response / Notification
		9475	Start Of Group Level Halt Download
		9500	Group Level Halt Info
		9525	End Of Group Level Halt Download
7500	Order Entry Request	7525	Order Entry Confirmation
		7550	Order Entry Rejection
		7875	Market Order Price Confirmation
7575	Order Modification Request	7600	Order Modification Confirmation
		7625	Order Modification Rejection
7650	Order Cancellation Request	7675	Order Cancellation Confirmation
		7700	Order Cancellation Rejection
7725	COC Request	7750	COC Response
7800	Multi-Leg order entry request	7825	Multi-Leg order entry confirmation
		7850	Multi-Leg order entry error
8005	Trade Modification Request	8010	Trade Modification Confirmation
		8015	Trade Modification Rejection
8500	Resubmit for Approval Request	8505	Resubmit for Approval Confirmation
		8510	Resubmit for Approval Rejection
9175	Currency Conversion Rate Download Request	9176	Currency Conversion Rate Start Message
		9177	Currency Conversion Rate Info
		9178	Currency Conversion Rate Start Message
9200	OI Violations Download Request	9201	OI Violations Download Start Message
		9202	OI Violations Message
		9203	OI Violations Download End Message
9204	OI Alerts Download Request	9205	OI Alerts Download Start Message
		9206	OI Alert Message
		9207	OI Alerts Download End Message
For any invalid message or message error.		1000	Invalid Message

11 List of Unsolicited Messages

Code	Message
From Exchange	
4000	Start of Margin Change Notification
4025	Margin Change Notification
4050	End of Margin Change Notification
4100	System Information Download
7500	Order Entry Request
7525	Order Entry Confirmation
7550	Order Entry Rejection
7575	Order Modification Request
7600	Order Modification Confirmation
7625	Order Modification Rejection
7650	Order Cancellation Request
7675	Order Cancellation Confirmation
7700	Order Cancellation Rejection
8000	Trade Download / Notification
8002	Spread Trade Download / Notification
8003	Institutional Trade Acceptance
8004	Institutional Trade Rejection
8020	Trade Modification Acceptance
8025	Notification of Stop Loss Order Triggered
8040	Delivery Instruction Acceptance
8050	Cancel Order at Close
9350	Limits Download Response / Notification
4125	Market Open Notification
4150	Market Close Notification
4200	Broadcast Server Info
8075	Start Multi-Leg Trade Notification
8016	Multi-Leg trade download / notification
8150	End Multi-Leg Trade Notification
8060	Exchange Multi-Leg order cancellation
8100	Market Wide OI Violation
8101	Market Wide OI Alert
31067	Change Of Daily Price Range Notification
From Vendor	
10000	Heart Beat

Note: Order Messages (7500, 7525, 7550, 7575, 7600, 7625, 7650, 7675, 7700 and 7750) will be sent to Vendor in case order is entered / modified / cancelled from Member Admin.

12 Nested Structures Referred in the Messages

12.1 Message Header

Name	Type	Byte Size	Description
Message Code	Short	2	Contains the Message number for the Message received or sent. A message is invalid without this.
Message Size	Short	2	Specifies the length of the entire message including the length of the Message Header.
Error Code	Short	2	Outbound field. 0 – Successful response Non Zero – Error Response
Exchange Time Stamp	Long	4	Outbound Field Date and Time when the message/response was generated by exchange in terms of seconds from 01-01-1970 00:00:00 hours.
Product ID	Short	2	13 - U/L Asset 12 – Trading instrument
Total		12	

12.2 Order Attributes

Name	Type	Bit Size	Description
Reserved	unsigned char : 1	1 Bit	0 – Always Off.
IOC	unsigned char : 1	1 Bit	0 – Not an IOC Order, EOS order or Day order 1 – IOC Order
GTC	unsigned char : 1	1 Bit	0 – Not a GTC Order, It should be considered as EOS order in case IOC and Day is also 0 1 – GTC Order
Day	unsigned char : 1	1 Bit	0 – Not a Day Order, EOS order and IOC order 1 – Day Order
SL	unsigned char : 1	1 Bit	0 – Not a Stop Loss Order 1 – Stop Loss Order
Market	unsigned char : 1	1 Bit	0 – Limit Order 1 – Market Order
Order Modified	unsigned char : 1	1 Bit	Outbound Field 0 – Order Entry Request 1 – Order Modification Request
Order Traded	unsigned char : 1	1 Bit	Outbound Field 0 – Order Entry Request 1 – Partially / Fully Traded order
Total		1 Byte	

12.3 Instrument Information

Name	Type	Byte Size	Description
Instrument Code	String	11	The U/L Asset / product Code is specified by Exchange for permitted U/L Asset / product for trading.
Instrument Identifier	Long	4	The U/L Asset / product Identifier is specified by Exchange for permitted U/L Asset / product for trading.
Expiry Date Time	Long	4	Expiry date of Instrument in terms of seconds from 01-01-1970 00:00:00 hours.
Total		19	

12.4 Account Client Information

Name	Type	Byte Size	Description
Account	Short	2	1 – Order placed for Client 2 – Order placed for House / Proprietary Account 3 – Order placed for Institutions
Client ID	String	11	Client Code for whom order is placed. For Account Type 1 & 3, Client ID is mandatory. For Account Type 2, Client ID is Optional.
Participant ID	String	13	Institution Participant ID valid only if Account field is 3.
Total		26	

12.5 Instrument Margin Attributes

Name	Type	Byte Size	Description
Instrument Identifier	Long	4	The U/L Asset / product Identifier is specified by Exchange for permitted U/L Asset / product for trading.
Flat or Percentage configuration for Initial Margin	Short	2	1 - Initial Margin in percentage with implicit two place decimal 2 – Initial Margin in Flat value with implicit two place decimal.
Initial Buy Margin Rate	Double	8	Initial Margin on Buy position with implicit two place decimal.
Initial Sell Margin Rate	Double	8	Initial Margin on Sell position with implicit two place decimal.
Initial Margin Spread Benefit On or Off Flag	Short	2	0 – Off 1 – On
Flat or Percentage configuration for Special Margin	Short	2	1 – Special Margin in percentage with implicit two place decimal 2 – Special Margin in absolute value.
Special Buy Margin Rate	Double	8	Special Margin on Buy position with implicit two place decimal.
Special Sell Margin Rate	Double	8	Special Margin on Sell position with implicit two place decimal.
Reserved	Short	2	
Reserved	Double	8	
Reserved	Double	8	
Total		60	

12.6 Instrument Margin Information

Name	Type	Byte Size	Description
Instrument Information	Nested Structure	19	
Reserved	Short	2	
Instrument Margin Attributes	Nested Structure	60	Old Margin Attributes
Instrument Margin Attributes	Nested Structure	60	New Margin Attributes
Total		141	

12.7 Trade Notification

Name	Type	Byte Size	Description
Order Number	Unsigned int64	8	Order Number of the corresponding Trade
Logon ID	Long	4	ID by which member has logged on through Open Interface
Buy Or Sell	Short	2	1 – Buy 2 – Sell
Original Quantity	Long	4	Total Order Quantity of corresponding Order at the time of Trade.
Disclosed Quantity	Long	4	Latest Disclosed Quantity of corresponding Order at the time of trade.
Total Quantity Remaining	Long	4	Total outstanding Quantity after considering trade notification
Disclosed Quantity Remaining	Long	4	Outstanding portion of one lot of disclosed quantity after considering the trade notification.
Order Price	Long	4	Latest order price with which order was pending before trade execution.
Reserved	Long	4	Should be 0 (Zero).
Trade Number	Long	4	Unique Trade Number for the Day generated by Exchange.
Quantity Traded	Long	4	Traded Quantity for which notification is received.
Traded Price	Long	4	Trade Price at which order is executed.
Quantity Traded Today	Long	4	Total Quantity Executed today considering current trade notification.
Traded Time	Long	4	Time at which order was executed in terms of seconds from 01-01-1970 00:00:00 hours
Instrument Identifier	Long	4	The U/L Asset / product Identifier is specified by Exchange for permitted U/L Asset / product for trading.
Type of Order	Short	2	Latest Order Type at the time of execution 1 – Limit 3 – Stop loss
Account Client Information	Nested Structure	26	
User Reference Text	String	51	Latest User reference text for the order.
Spread Price	Long	4	Price at which Spread Order got traded in terms of paise. 0 in case of trade of non-spread product.
Spread Instrument Identifier	Long	4	Instrument Identifier of Spread Product in which order was placed and resulted into trade. –1 in case of trade of non-spread product.

Name	Type	Byte Size	Description
Status	Short	2	Status of Trade The value will be derived from bit where only 5 bits are being used and rest 11 are reserved for future use. The bit will be used in combination. 1st Bit : Original Trade Status. This bit will always be ON. 2nd Bit : This will be ON alongwith 1st bit, if the Trade is Modified. Also if the Participant ID is modified, this bit will be ON while 4th and 5th bit will be OFF . 3rd Bit : Applicable for Trades with value of Account field as 3. If the Trade is approved by the settler then this bit will be ON and 5th bit will be OFF. 4th Bit : Applicable for Trades with value of Account field as 3. If the Trade is rejected by the settler then this bit will be ON and 5th bit will be OFF. In case the trade is rejected by the settler and it is resubmitted, then this bit will be OFF. This will also be OFF for Trade Modification where Participant ID is modified for Pending/Rejected Trades. 5th Bit : Applicable for Trades with value of Account field as 3. If the rejected trade is resubmitted to the settler then this bit will be ON and 4th Bit will be OFF. If the trade client code and/or the Participant ID is modified then this bit will be OFF. 7th bit: Applicable to the trade who got cancelled. The value of this bit is independent of all other bits in the field. If the trade is cancelled the bit will be ON else it will be OFF. For Example : 1. For a trade which is not even modified, the value will be derived to 1 as the bit representation is 0000 0000 0000 0001 2. For a trade for which client code is modified, the value will be derived to 3 as the bit representation is 0000 0000 0000 0011. 3. For a trade which is accepted by the settler, the value will be derived to 5 as the bit representation is 0000 0000 0000 0101 4. For a trade which is rejected by the settler, the value will be derived to 9 as the bit representation is 0000 0000 0000 1001 5. For a trade which is rejected by the settler and is resubmitted without any modification to same settler, the value will be derived to 17 as the bit representation is 0000 0000 0001 0001 6. For a trade which has undergone cancellation, the value will be derived may vary since the status of this bit is independent of other bits.

Name	Type	Byte Size	Description
			The representation of bits will be like 0000 0000 0100 0001.
Participant Clearing Member ID	String	13	On Trade, corresponding Clearing Member ID of User. *This information will change to corresponding Clearing Member ID of Participant, whenever Trade is been accepted by Corresponding Clearing Member of Participant. On rejection this will not change.* *Note: Applicable in case Account is of Institution*
Institutional Remarks	String	26	Spaces. *This information will change to Remarks as entered by Clearing Member, on acceptance / rejections by corresponding Clearing Member of Participant.* *Note: Applicable in case Account is of Institution*
Order Last User Update Time	Long	4	Time at which order was entered / last modified by User / Member / Exchange in terms of seconds from 01-01-1970 00:00:00 hours. This time is updated only in case of Entry Confirmation / Modification Confirmation / Cancellation Confirmation / Exchange Initiated Cancellation.
Trade Split Number	Long	4	Should always be 0
Terminal Info	Unsigned Int64	8	Refer to Note on Terminal Info
SLBM Order Identifier	Char	1	Should always be 0
Total		207	

12.8 Order by Price

Name	Type	Byte Size	Description
Quantity	Long	4	Total Quantity for which orders are available in the market.
Order Price	Long	4	Price at which orders are pending in the market.
Total Number of Orders	Long	4	Total Number of Orders at the price forming the Quantity
Reserved	Short	2	
Total		14	

12.9 Open Interest Details

Name	Type	Byte Size	Description
Current Open Interest	Long	4	Open Interest as on the time of this message
Total		4	

12.10 Broadcast Server Info Details

Name	Type	Byte Size	Description
Product ID	Short	2	13 - U/L Asset 12 – Trading instrument
Broadcast Group	String	33	UDP/Multicast IP Address
Port	Long	4	Port Number
Total		39	

12.11 Host time Info

Name	Type	Byte Size	Description
Time	Long	4	Time in terms of seconds from 01-01-1970 00:00:00 hours in UTC (GMT).
Year	Long	4	
Month	Long	4	
Day	Long	4	
Hour	Long	4	
Min	Long	4	
Sec	Long	4	
DayOfWeek	Long	4	
Total		32	

Note: Except Time rest will be given as Exchange Local Time.

12.12 Resubmit Trades for Approval

Name	Type	Byte Size	Description
Logon ID	Long	4	User ID by which member has logged on through Open Interface
Order Number	Unsigned int64	8	Corresponding Order Number of the Trade.
Trade Number	Long	4	Trade Number as assigned by the Exchange.
Trade Split Number	Long	4	Should always be 0
Total		20	

12.13 Conditional Order Cancellation Terms

Name	Type	Byte Size	Description
All	unsigned char : 1	1 bit	Option to be set to 1 to select All orders – for all order types and validity.
GTD	unsigned char : 1	1 bit	Option to be set to 1 to select all GTD orders.
GTC	unsigned char : 1	1 bit	Option to be set to 1 to select all GTC orders.
Day	unsigned char : 1	1 bit	Option to be set to 1 to select all Day orders.
SL	unsigned char : 1	1 bit	Option to be set to 1 to select all SL orders.
RL	unsigned char : 1	1 bit	Option to be set to 1 to select all RL orders.

EOS	unsigned char : 1	1 bit	Option to be set to 1 to select all EOS orders.
Reserved	unsigned char : 1	1 bit	Reserved – to be set to 0.
Reserved	unsigned char : 1	1 bit	Reserved – to be set to 0.
Reserved	unsigned char : 1	1 bit	Reserved – to be set to 0.
Reserved	unsigned char : 1	1 bit	Reserved – to be set to 0.
Reserved	unsigned char : 5	5 bits	Reserved – to be set to 0.
Total		2 bytes	

12.14 Conditional Order Cancellation – Instrument Definition

Name	Type	Byte Size	Description
All	unsigned char : 1	1 bit	Option to be set to 1 to select All orders – of all instruments.
Spot	unsigned char : 1	1 bit	Option to be set to 1 to select all SPOT orders.
Futures	unsigned char : 1	1 bit	Option to be set to 1 to select all FUTURES orders.
Options	unsigned char : 1	1 bit	Option to be set to 1 to select all OPTIONS orders.
Spread	unsigned char : 1	1 bit	Option to be set to 1 to select all SPREAD orders.
Reserved	unsigned char : 1	1 bit	Reserved – to be set to 0.
Reserved	unsigned char : 1	1 bit	Reserved – to be set to 0.
Reserved	unsigned char : 1	1 bits	Reserved – to be set to 0.
Total		1 Byte	

12.15 Individual Leg Request Details

Name	Type	Byte Size	Description
Instrument Identifier	Long	4	The U/L Asset / product Identifier is specified by Exchange for permitted U/L Asset/ products for trading.
Buy Or Sell	Short	2	1 – Buy Order 2 – Sell Order The order shall be rejected in case of any other value.
Order Price	Long	4	Refer to Rules for Order Price
Order Quantity	Long	4	
Order Attributes	Nested Structure	1	Valid attributes are Market Order, Limit Order and IOC
Total		15	

12.16 Individual Leg Response Details

Name	Type	Byte Size	Description
Instrument Identifier	Long	4	The U/L Asset / product Identifier is specified by Exchange for permitted U/L Asset/ products for trading.

Buy Or Sell	Short	2	1 – Buy Order 2 – Sell Order The order shall be rejected in case of any other value.
Order Price	Long	4	Refer to Rules for Order Price
Exchange Order Number	Unsigned int64	8	Order Number Generated by the exchange.
Order Quantity	Long	4	
Quantity Traded Today	Long	4	
Order Attributes	Nested Structure	1	Valid attributes are Market Order, Limit Order and IOC
Total		27	

12.17 Trade Identification Info

Name	Type	Byte Size	Description
Traded Time	Long	4	Time at which order was executed in terms of seconds from 01-01-1970 00:00:00 hours
Order Number	Unsigned int64	8	Order Number of the corresponding Trade
Trade Number	Long	4	Unique Trade Number for the Day generated by Exchange.
Buy Or Sell	Short	2	1 – Buy 2 – Sell
Instrument Identifier	Long	4	Instrument Identifier of the trade.
Trade Split Number	Long	4	Should always be 0
Total		26	Variable length

12.18 LOGON REQUEST PASSWORD INFO

Name	Type	Byte Size	Description
Password	String	11	Maximum Length : 10 characters Minimum Length : 8 characters Right Padded and terminated with NULL '\0' character up to Byte Size i.e. 11 bytes Refer to valid character set for valid characters in password. Refer to Change in password policy.
New Password	String	11	To be provided along with valid password for change of password. Maximum Length : 10 characters Minimum Length : 8 characters Should not be same as Password. Right Padded and terminated with NULL '\0' character up to Byte Size i.e. 11 bytes Refer to valid character set for valid characters in password. Refer to Change in password policy.
Total		22	

12.19 APPLICATION HOST LOOKUP REQUEST PASSWORD INFO

Name	Type	Byte Size	Description
Password	String	11	Maximum Length : 10 characters Minimum Length : 8 characters Right Padded and terminated with NULL '\0' character up to Byte Size i.e. 11 bytes Refer to valid character set for valid characters in password. Refer to Change in password policy.
Total		11	

13 Transaction Messages

13.1 1000 - INVALID MESSAGE

Message Code : 1000
Sender : Exchange

If Any Message sent by the vendor is invalid in any manner then this message goes as a response to the request of Vendor.

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Error String	String	100	Text indicating error message
Erroneous Message Received	String	Length of Invalid Message	Actual Message Received as request.
Total		112 + Length of Invalid Message	

13.2 APPLICATION HOST LOOKUP MESSAGES

13.2.1 101 - Application Host Lookup Request

Message Code : 101
Source : Vendor

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Logon ID	Long	4	ID provided by exchange to member for logging on to exchange through Open Interface
Trading Member ID	Long	4	Trading Member ID as provided by the exchange to the Member.
Component Category	Short	2	36 - For ISV applications.
Encrypted Data Message Size	Long	4	Specifies the length of the encrypted message
Encrypted Data Buffer	Bytes	512	Encrypt the APPLICATION HOST LOOKUP REQUEST PASSWORD INFO using below mention Rule Rules for Encryption of Message
Total		538	

13.2.2 102 - Application Host Lookup Response

Message Code : 102
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Lookup Status	Short	2	0 – Successful Non zero no. giving the failure code.
Interactive IP Address	String	33	The TCP IP address to which the ISV application is expected to connect.
Interactive Port no	Long	4	The TCP IP port to which the ISV application is expected to connect.
Broadcast IP Address	String	33	The UDP / Multicast address for receiving broadcast information
Broadcast Port no	Long	4	The UDP / Multicast port for receiving broadcast information
CustomAttributes	String	129	Reserved for future use.
Private Token Key	String	129	Exchange generated token key – to be send in message “Logon Request”.
Total		346	

13.3 Logon and Logoff Messages

13.3.1 5001 - Logon Request

Message Code : 5001
Source : Vendor

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Logon ID	Long	4	ID provided by exchange to member for logging on to exchange through Open Interface
Trading Member ID	Long	4	Trading Member ID as provided by the exchange to the Member.
Major Version No.	Short	2	Major Version No. as specified by the exchange.
Minor Version No.	Short	2	Minor Version No. as specified by the exchange
Private Token Key	String	129	Private Token Key received in the successful application host lookup response.
Unique Identifier	Long	4	Logon request unique identifier for a vendor.
Encrypted Data Message Size	Long	4	Specifies the length of the encrypted message
Encrypted Data Buffer	Bytes	512	Encrypt the LOGON REQUEST PASSWORD INFO using below mention Rule Rules for Encryption of Message
Total		673	

Note: Product Id in Message Header will be 12.

13.3.2 5002 – Successful/Failure Logon Response

Message Code : 5002
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Logon Status	Short	2	0 – For Successful Response Non zero number giving failure code.
Failure Reason	String	501	<Space> - For Successful Response Text giving reason for logon failure.
Logon ID	Long	4	As provided in Message 5001
Logon Time	Long	4	Time when the request was acknowledged by exchange in terms of seconds from 01-01-1970 00:00:00 hours.
Trading Member ID	Long	4	As provided in Message 5001
Trading Member Name	String	41	<Trading Member Name> for Successful Response. <Space> for failure..
Clearing Member ID	Long	4	ID of the Clearing Member as provided by the exchange on clearing member activation.
User Status	Char	1	Only for successful logon, <space> for failure. A – Active Anything other than A – Not Active.
Exchange Time	Host Time Info	32	Exchange time. Local time needs to be synchronized with Exchange time.
Exchange Beginning of day time stamp	Long	4	Time stamp representing the business day for which the exchange system was started.
UMC	String	31	Unique Member Code
Time Zone Offset	Long	4	The difference in seconds between UTC and Local Time (Zone setting at the exchange server). In case, the server is running on Singapore Time-zone then the value in this field would be -28800
Base Currency Code	String	4	Base Currency ISO Code. To be used for Trading Limits.
ExchangeName	String	129	Exchange Name
Total		777	

Note: Product Id in Message Header will be received as 0 (Zero)

13.3.3 5004 - Logoff Request

Message Code : 5004
Source : Vendor

It is advisable that vendor send the logoff request before disconnecting interactive network connection.

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Total		12	

13.3.4 5005 - Logoff Response

Message Code : 5005
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Total		12	

13.4 Download Process

The vendor should keep the last information received time and send the timestamp along with request for incremental download. The download process is essential after successful login to get the transactions synchronised with the exchange.

13.4.1 9050 - Message Download Request

Message Code : 9050
Source : Vendor

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Last Order Time	Long	4	This contains the latest time from which message download is required. The time would be in terms of seconds from 01-01-1970 00:00:00. 0 (zero) indicates full download of message
Last Trade Time	Long	4	This contains the latest time from which message download is required. The time would be in terms of seconds from 01-01-1970 00:00:00. 0 (zero) indicates full download of message
Last Spread Trade Time	Long	4	This contains the latest time from which message download is required. The time would be in terms of seconds from 01-01-1970 00:00:00. 0 (zero) indicates full download of message
Last Trade Modification Time	Long	4	This contains the latest time from which message download is required. The time would be in terms of seconds from 01-01-1970 00:00:00. 0 (zero) indicates full download of message
Last DI Time	Long	4	This contains the latest time from which message download is required. The time would be in terms of seconds from 01-01-1970 00:00:00. 0 (zero) indicates full download of message
Last Multi-Leg Order Time	Long	4	This contains the latest time from which message download is required. The time would be in terms of seconds from 01-01-1970 00:00:00. 0 (zero) indicates full download of message
Last Multi-Leg Trade Time	Long	4	This contains the latest time from which message download is required. The time would be in terms of seconds from 01-01-1970 00:00:00. 0 (zero) indicates full download of message, This is the latest time stamp of a multi-leg trade that is completely received (end message received) by the third party.
Reserved	Long	4	

Total	44	

13.4.2 9075 - Start of Message Download Response

Message Code : 9075
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Total		12	

13.4.3 4175 – Change of Daily Price Range Notification

Message Code : 4175
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Reserved	Short	2	
Instrument Identifier	Long	4	The U/L Asset/ product Identifier is specified by Exchange for permitted U/L Asset/ products for trading.
Low Price	Long	4	Lowest permissible price for the day
High Price	Long	4	Highest permissible price for the day
Total		26	

Note: If Low Price and High Price is equal and negative than consider the price band as Not Applicable (NA).

13.4.4 9100 – Orders Download

Message Code : 9100
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	Error Code field in the structure will indicate the numeric representation of error.
Instrument Identifier	Long	4	The U/L Asset/ product Identifier is specified by Exchange for permitted U/L Asset/ products for trading.
Type of Order	Short	2	1 – Limit Order 3 – Stop Loss Order
Session ID	Short	2	Session No. of Trading Session in which order is placed.
Exchange Order Number	Unsigned int64	8	Order Number Generated by the exchange. 0 (Zero) in case the exchange has not generated the order number at the time of download.
Buy Or Sell	Short	2	1 – Buy Order 2 – Sell Order
Disclosed Quantity	Long	4	Refer to Rules for Disclosed Quantity.

Name	Type	Byte Size	Description
Disclosed Quantity Remaining	Long	4	Outstanding portion of one lot of disclosed quantity.
Order Quantity	Long	4	Refer to Rules for Order Quantity
Quantity Traded Today	Long	4	Total Quantity traded for the order during the day.
Order Price	Long	4	Refer to Rules for Order Price
Trigger Price	Long	4	Refer to Rules for Trigger Price
Good Till Date	Long	4	Refer to Rules for Order Validity
Order Entry Time	Long	4	Original Order Entry Time as received from Exchange
Order Time	Long	4	Time of last state accepted by exchange in terms of seconds from 01-01-1970 00:00:00 hours.
Order Attributes	Nested Structure	1	
Logon ID	Long	4	ID by which member has logged on through Open Interface
Reserved	Long	4	
Account Client Information	Nested Structure	26	
User Reference Text	String	51	Refer to Rules for Free Flow Text
Terminal Info	Unsigned Int64	8	Refer to Note on Terminal Info
Transaction Status	Short	2	1 & 8192 – Entry Confirmation Pending 2, 8 & 16384 – Modification Confirmation Pending 4, 16 & 16385 – Cancellation Confirmation Pending 64 – Pending Order 128 – Executed Order 256 – Cancelled Order 512 – Order Rejected by Exchange 16386 – Order Cancelled by Exchange at end of validity.
SLBM Order Identifier	Char	1	Should always be 0
Reserved	Double	8	
Market Protection Percentage	Short	2	Market Protection % assigned by the exchange. Refer Rule for Market Price Protection
Reserved	Long	4	
SMPF Order Identifier	Char	1	1 = Passive order cancellation 2 = Active order cancellation Refer to Rule for Self-Match Prevention
Total		178	

13.4.5 8000 - Trade Download / Notification

Message Code : 8000
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	

Trade Notification	Nested Structure	207	
Total		219	

13.4.6 8002 – Spread Trade Download / Notification

Message Code : 8002
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Trade Notification1	Nested Structure	207	Near Month Trade Notification
Trade Notification2	Nested Structure	207	Far Month Trade Notification
Total		426	

13.4.7 8020 - Trade Modification Acceptance

Message Code : 8020
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	Error Code will be the Numeric Notation of Error, which resulted in request rejection.
Instrument Identifier	Long	4	The U/L Asset/ product Identifier is specified by Exchange for permitted U/L Asset/ products for trading.
Logon ID	Long	4	As sent with Message 8005
Exchange Order Number	Unsigned int64	8	As sent with Message 8005
Trade Number	Long	4	As sent with Message 8005
Account Client Information	Nested Structure	26	Previous Account Client Information i.e. the existing information that is being modified.
Account Client Information	Nested Structure	26	Updated Account Client Information i.e. the resultant information that is being expected at the end of this operation.
User Reference Text	String	51	As sent with Message 8005
Initiated By	Long	4	As sent with Message 8005
Confirmation Time	Long	4	Time at which trade modification request is confirmed by the exchange in terms of seconds from 01-01-1970 00:00:00 hours.
Status	Short	2	0 – Accepted but trade details are not updated 1 – Accepted -1 – Rejected
Trade Split Number	Long	4	Should always be 0
Total		149	

13.4.8 8040 - DI Acceptance

Message Code : 8040
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Instrument Identifier	Long	4	The U/L Asset / product Identifier is specified by Exchange for permitted U/L Assets / products for trading.
Logon ID	Long	4	As sent with Message 8030
Quantity	Long	4	As sent with Message 8030
Account	Short	2	As sent with Message 8030
Client ID	String	11	As sent with Message 8030
Entry Time	Long	4	As sent with Message 8030
Last Update Time	Long	4	As sent with Message 8030
DIFlag	Short	2	As sent with Message 8030
Buy Or Sell	Short	2	As sent with Message 8030
DINumber	Unsigned int64	8	Unique Number assigned by Exchange
Reserved	String	14	
User Reference Text	String	51	As sent with Message 8030
Initiated By	Long	4	As sent with Message 8030
Confirmation Time	Long	4	Time at which request is rejected by the exchange in terms of seconds from 01-01-1970 00:00:00 hours.
Status	Short	2	0 – Accepted and Pending 1 – Cancelled -1 – Rejected -2 – Transmitted
Total		132	

13.4.9 9150 - End of Message Download Response

Message Code : 9150
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Total		12	

13.4.10 9225 - Triggered Alert History Request

Message Code : 9225
Source : Vendor

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Last Updated Time	Long	4	0 - Full download request Time in terms of seconds from 01-01-1970 00:00:00 hours for incremental download.
Total		16	

13.4.11 9250 - Start Of Triggered Alert History

Message Code : 9250
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Total		12	

13.4.12 9275 - Triggered Alerts History

Message Code : 9275
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Alert Type	Short	2	1 – 1st (Lowest) of 3 Alerts set for Margin 2 – 2nd of 3 Alerts set for Margin 3 – 3rd (Highest and last) of 3 Alerts set for Margin 4 – 1st (Lowest) of 3 Alerts set for MTM 5 – 2nd of 3 Alerts set for MTM 6 – 3rd (Highest and last) of 3 Alerts set for MTM
Error Message	String	129	Running Text describing the limits violation.
Total		143	

13.4.13 9300 - End Of Triggered Alert History

Message Code : 9300
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Message Count	Long	4	Total Number of historical records received in response to Message 9225
Total		16	

13.4.14 9325 – Limits Download Request

Message Code : 9325
Source : Vendor

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Total		12	

13.4.15 9350 – Limits Download Response / Notification

Message Code : 9350
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Daily Future Buy Limit	Double	8	Daily Futures buy limit set by Member Admin
Daily Future Sell Limit	Double	8	Daily Futures sell limit set by Member Admin
Daily Spot Buy Limit	Double	8	Daily Spot buy limit set by Member Admin
Daily Spot Sell Limit	Double	8	Daily Spot sell limit set by Member Admin
Daily Option Buy Limit	Double	8	Daily Option buy limit set by Member Admin
Daily Option Sell Limit	Double	8	Daily Option sell limit set by Member Admin
Total		60	

Note: Product Id in Message Header will be received as 0 (Zero)

13.4.16 8016 –Multi-Leg Trade Download / Notification

Message Code : 8016
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Exchange Multi-Leg Reference Number	Unsigned int64	8	Reference number assigned to corresponding Message 7825.
ML Order Attribute Identifier	Short	2	Spread IOC – 0 Multi-Leg order - 1
Trade Notification	Nested structure	207	
Total		229	

13.4.17 9101 - Multi-Leg Order Download

Message Code : 9101
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Type of Order	Short	2	1 – Regular Lot Other order types are not allowed.
Exchange Multi-Leg Reference Number	Unsigned int64	8	Reference number generated by the exchange to Identify orders submitted together.
Spread Order Price	Long	4	Refer to Rules for Order Price
Order Entry Time	Long	4	Original Order Entry Time as received from Exchange
Order Time	Long	4	Time of last state accepted by exchange in terms Of seconds from 01-01-1970 00:00:00 hours.
Logon ID	Long	4	ID by which member has logged on through Open Interface
Account Client Information	Nested Structure	26	
User Reference Text	String	51	Refer to Rules for Free Flow Text
Terminal Info	Unsigned Int64	8	Refer to Note on Terminal Info
ML Order Attribute Identifier	Short	2	Spread IOC – 0 Multi-Leg order – 1
Number Of Legs	Short	2	
Transaction Status	Short	2	1 & 8192 – Entry Confirmation Pending 64 – Pending Order 128 – Executed Order 256 – Cancelled Order 512 – Order Rejected by Exchange
Market Protection Percentage	Short	2	Market Protection % assigned by the exchange. Refer Rule for Market Price Protection
Individual Leg Response Details	Nested Structure	81	Variable length array of individual leg response details. (27*3)

Name	Type	Byte Size	Description
	Array		
Total		212	Variable length

13.4.18 9375 – Error-Codes Download Request

Message Code : 9375
Source : Vendor

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Last Updated Time	Long	4	0 - Full download request Time in terms of seconds from 01-01-1970 00:00:00 hours for incremental download.
Total		16	

13.4.19 9400 – Start Of Error-Codes Download

Message Code : 9400
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Total		12	

13.4.20 9425 –Error-Codes Download

Message Code : 9425
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
ErrorCode	Short	2	Specific Error Code to indicate an error.
Last Updated Time	Long	4	
Rejection Reason	String	129	Error description.
Total		147	

13.4.21 9450 – End Of Error-Codes Download

Message Code : 9450
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Total		12	

13.4.22 9475 – Start Of Group Level Halt Download

Message Code : 9475
Source : Exchange

Name	Type	Byte Size	Description

Message Header	Nested Structure	12	
Total		12	

13.4.23 9500 –Group Level Halt Info

Message Code : 9500
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Group Id	Short	2	Group Id of a set of products for which the trading is halted.
Status	Short	2	1 – Start of trading for Group Id 2 – End of trading for Group Id
Trigger Time	Long	4	Time when the message is triggered in the Exchange.
Total		20	

13.4.24 9525 – End Of Group Level Halt Download

Message Code : 9525
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Total		12	

Note: Please note that, for a particular Group, all occurred events during the business day will be sent as a part of download.

13.5 Order Entry, Modification and Cancellation

13.5.1 7500 - Order Entry Request

Message Code : 7500
Source : Vendor

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Instrument Identifier	Long	4	The U/L Asset/ product Identifier is specified by Exchange for permitted U/L Asset/ products for trading.
Type of Order	Short	2	1 – Limit Order 3 – Stop Loss Order The order shall be rejected in case of any other value.
Buy Or Sell	Short	2	1 – Buy Order 2 – Sell Order The order shall be rejected in case of any other value.
Disclosed Quantity	Long	4	Refer to Rules for Disclosed Quantity.

Name	Type	Byte Size	Description
Order Quantity	Long	4	Refer to Rules for Order Quantity
Order Price	Long	4	Refer to Rules for Order Price
Trigger Price	Long	4	Refer to Rules for Trigger Price
Good Till Date	Long	4	Refer to Rules for Order Validity
Order Attributes	Nested Structure	1	
Reserved	Long	4	Should be 0 (Zero).
Logon ID	Long	4	0 (Zero)
Account Client Information	Nested Structure	26	
User Reference Text	String	51	Refer to Rules for Free Flow Text
Terminal Info	Unsigned Int64	8	Refer to Note on Terminal Info
SLBM Order Identifier	Char	1	Should always be 0
Strategy Id	Short	2	Refer Rule for Algorithm Trading Identifier
Strategy Trigger Sequence No	Unsigned Int64	8	Refer Rule for Algorithm Trading Identifier
Market Protection Percentage	Short	2	Market Protection % for the order. Refer Rule for Market Price Protection.
SMPF Order Identifier	Char	1	Indicates whether Active or Passive order cancellation to be done on account of SMPF. Valid values: 1 = Passive 2 = Active The order shall be rejected in case of any other value.
Total		148	

Note: In case where the order is of IOC attributes, Message 7675 will be sent along with Message 7525. This is applicable only if order does not get fully matched.

13.5.2 7525 - Order Entry Confirmation

Message Code : 7525
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Instrument Identifier	Long	4	The U/L Asset/ product Identifier is specified by Exchange for permitted U/L Asset/ products for trading.
Type of Order	Short	2	As sent with Message 7500
Session ID	Short	2	Session No. of Trading Session in which order is placed.
Exchange Order Number	Unsigned int64	8	Order Number Generated by the exchange.
Buy Or Sell	Short	2	As sent with Message 7500

Name	Type	Byte Size	Description
Disclosed Quantity	Long	4	As sent with Message 7500
Order Quantity	Long	4	As sent with Message 7500
Order Price	Long	4	In case of Market Order, Price at which order was placed by exchange. In case of limit order, as sent with Message 7500
Trigger Price	Long	4	As sent with Message 7500
Good Till Date	Long	4	As sent with Message 7500
Order Entry Time	Long	4	Time at which order reached at exchange in terms of seconds from 01-01-1970 00:00:00 hours.
Order Time	Long	4	Time at which order was accepted by the exchange in terms of seconds from 01-01-1970 00:00:00 hours.
Order Attributes	Nested Structure	1	As sent with Message 7500
Reserved	Long	4	Should be 0 (Zero).
Logon ID	Long	4	ID as provided by the exchange for Logon.
Account Client Information	Nested Structure	26	
User Reference Text	String	51	As sent with Message 7500. Shall be used for all confirmations until modification/cancellation request is received.
Terminal Info	Unsigned Int64	8	Refer to Note on Terminal Info
SLBM Order Identifier	Char	1	Should always be 0
Market Protection Percentage	Short	2	Market Protection % assigned by the exchange. Refer Rule for Market Price Protection
Reserved	Unsigned int64	8	
Reserved	Long	4	
SMPF Order Identifier	Char	1	As sent with Message 7500
Total		168	

13.5.3 7550 - Order Entry Rejection

Message Code : 7550
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	Error Code field in the structure will represent the Numeric Notation of Error.
Instrument Identifier	Long	4	The U/L Asset/ product Identifier is specified by Exchange for permitted U/L Asset/ products for trading.
Type of Order	Short	2	As sent with Message 7500
Session ID	Short	2	Session No. of Trading Session in which order is placed.
Exchange Order Number	Unsigned int64	8	Order Number Generated by the exchange.
Buy Or Sell	Short	2	As sent with Message 7500

Name	Type	Byte Size	Description
Disclosed Quantity	Long	4	As sent with Message 7500
Order Quantity	Long	4	As sent with Message 7500
Order Price	Long	4	As sent with Message 7500
Trigger Price	Long	4	As sent with Message 7500
Good Till Date	Long	4	As sent with Message 7500
Order Entry Time	Long	4	Time at which order was rejected at exchange in terms of seconds from 01-01-1970 00:00:00 hours.
Order Time	Long	4	0 (Zero)
Order Attributes	Nested Structure	1	As sent with Message 7500
Reserved	Long	4	To be set to '0'.
Logon ID	Long	4	As sent with Message 7500
Account Client Information	Nested Structure	26	
User Reference Text	String	51	As sent with Message 7500.
Terminal Info	Unsigned Int64	8	Refer to Note on Terminal Info
SLBM Order Identifier	Char	1	Should always be 0
Market Protection Percentage	Short	2	Market Protection % assigned by the exchange. Refer Rule for Market Price Protection
Reserved	Unsigned int64	8	
Reserved	Long	4	
SMPF Order Identifier	Char	1	As sent with Message 7500
Total		168	

13.5.4 7575 - Order Modification Request

Message Code : 7575
Source : Vendor

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Type of Order	Short	2	Modified Order type 1 – Limit Order 3 – Stop Loss Order. Limit order cannot be modified to stop loss order.
Exchange Order Number	Unsigned int64	8	Original Order Number as allocated by exchange which is to be modified.
Disclosed Quantity	Long	4	Modified Disclosed Quantity. Should not be more than the outstanding order quantity.
Order Quantity	Long	4	Modified Order Quantity Refer to Rules for Order Quantity
Quantity Traded Today	Long	4	Total Quantity traded for the order during the day.

Name	Type	Byte Size	Description
Order Price	Long	4	Modified Order Price Refer to Rules for Order Price
Trigger Price	Long	4	Modified Trigger Price Refer to Rules for Trigger Price
Good Till Date	Long	4	Modified Order Validity Refer to Rules for Order Validity
Order Time	Long	4	Last updated Order Time as received from exchange in Message 7525.
Order Attributes	Nested Structure	1	
Logon ID	Long	4	ID by which member has logged on through Open Interface
User Reference Text	String	51	Refer to Rules for Free Flow Text or as sent with Original Order Entry Request Message 7500
Strategy Id	Short	2	Refer Rule for Algorithm Trading Identifier
Strategy Trigger Sequence No	Unsigned Int64	8	Refer Rule for Algorithm Trading Identifier
Market Protection Percentage	Short	2	Market Protection % for the order. Refer Rule for Market Price Protection
SMPF Order Identifier	Char	1	1 = Passive order cancellation 2 = Active order cancellation Refer to Rule for Self-Match Prevention The order shall be rejected in case of any other value.
Total		119	

13.5.5 7600 - Order Modification Confirmation

Message Code : 7600
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Type of Order	Short	2	As sent with Message 7575
Exchange Order Number	Unsigned int64	8	As sent with Message 7575
Disclosed Quantity	Long	4	As sent with Message 7575
Order Quantity	Long	4	As sent with Message 7575
Quantity Traded Today	Long	4	Total quantity traded in case of partially traded order.
Order Price	Long	4	In case of Market Order, Price at which order was placed by exchange. In case of limit order, as sent with Message 7575
Trigger Price	Long	4	As sent with Message 7575
Good Till Date	Long	4	As sent with Message 7575
Order Time	Long	4	Time at which order modification is accepted by the exchange in terms of seconds from 01-01-

Name	Type	Byte Size	Description
			1970 00:00:00 hours.
Order Attributes	Nested Structure	1	As sent with Message 7575
Logon ID	Long	4	As sent with Message 7575
User Reference Text	String	51	As sent with Message 7575. Shall be retained and returned until next modification / cancellation is received.
Market Protection Percentage	Short	2	Market Protection % assigned by the exchange. Refer Rule for Market Price Protection
SMPF Order Identifier	Char	1	As sent with Message 7575
Total		109	

13.5.6 7625 - Order Modification Rejection

Message Code : 7625
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	Error Code field in the structure will represent the Numeric Notation of Error.
Type of Order	Short	2	As sent with Message 7575
Exchange Order Number	Unsigned int64	8	As sent with Message 7575
Disclosed Quantity	Long	4	As sent with Message 7575
Order Quantity	Long	4	As sent with Message 7575
Quantity Traded Today	Long	4	Total quantity traded during the day.
Order Price	Long	4	In case of Market Order, Price at which order was placed by exchange. In case of limit order, as sent with Message 7575
Trigger Price	Long	4	As sent with Message 7575
Good Till Date	Long	4	As sent with Message 7575
Order Time	Long	4	As sent with Message 7575
Order Attributes	Nested Structure	1	As sent with Message 7575
Logon ID	Long	4	As sent with Message 7575
User Reference Text	String	51	As sent with Message 7575
Market Protection Percentage	Short	2	Market Protection % assigned by the exchange. Refer Rule for Market Price Protection
SMPF Order Identifier	Char	1	As sent with Message 7575
Total		109	

13.5.7 7650 - Order Cancellation Request

Message Code : 7650
Source : Vendor

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Exchange Order Number	Unsigned int64	8	Original Order Number as allocated by exchange, which is to be cancelled.
Logon ID	Long	4	ID by which member has logged on through Open Interface
Strategy Id	Short	2	Refer Rule for Algorithm Trading Identifier
Strategy Trigger Sequence No	Unsigned Int64	8	Refer Rule for Algorithm Trading Identifier
Total		34	

13.5.8 7675 - Cancel Order Confirmation

Message Code : 7675
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Exchange Order Number	Unsigned int64	8	As sent with Message 7650
Order Time	Long	4	Time at which order cancellation is accepted by the exchange in terms of seconds from 01-01-1970 00:00:00 hours.
Logon ID	Long	4	As sent with Message 7650
Total		28	

13.5.9 7700 - Cancel Order Rejection

Message Code : 7700
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	Error Code field in the structure will represent the Numeric Notation of Error.
Exchange Order Number	Unsigned int64	8	As sent with Message 7650
Order Time	Long	4	As sent with Message 7650
Total		24	

13.5.10 7875 – Market Order Price Confirmation

The message is sent to indicate the price at which the market order got confirmed. The market order may have been placed during normal session.

Message Code : 7875
Source : Exchange

Name	Type	Byte Size	Description

MessageHeader	Nested Structure	12	
Order Number	Unsigned int64	8	Order number for which the message is generated.
Price	Long	4	The price at which the market order got confirmed.
Order Time	Long	4	In terms of seconds from 01-01-1970 00:00:00 hours.
Total		28	

13.6 Currency Info Request/Response

13.6.1 Currency Conversion Rate Download Request

Message Code : 9175
Source : Vendor

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Last Downloaded Time	Long	4	This contains the latest time from which message download is required. The time would be in terms of seconds from 01-01-1970 00:00:00. 0 (zero) indicates full download of message
Total		16	

13.6.2 Currency Conversion Rate Start Message

Message Code : 9176
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Total		12	

13.6.3 Currency Conversion Rate Info

Message Code : 9177
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Currency Pair Id	Short	2	
Conversion Rate	Double	8	
Remarks	Char	26	
Last Update Time	Long	4	Date and time when the conversion was last modified in terms of seconds from 01-01-1970 00:00:00 hrs.
Total		52	

13.6.4 Currency Conversion Rate End Message

Message Code : 9178
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Total		12	

13.7 Market Wide OI Violations/Alerts Info

13.7.1 OI Violations Download Request

Message Code : 9200
Source : Vendor

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Last Downloaded Time	Long	4	This contains the latest time from which message download is required. The time would be in terms of seconds from 01-01-1970 00:00:00. 0 (zero) indicates full download of message
Total		16	

13.7.2 OI Violations Download Start Message

Message Code : 9201
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Total		12	

13.7.3 OI Violation Message

Message Code : 9202
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Asset Type	Short	2	0 – Asset Class 1 – Asset 2 – Underlying 3 – Product
Instrument Identifier	Long	4	

Status	Short	2	0 – Active – This means received message is for change of status from violated status to active. 1 – Inactive – This means received message is for change of status from active status to, violated.
OI Quantity Limit	Double	8	This defines fixed Quantity limit for particular Asset Type and Instrument Identifier.
OI Percentage Limit	Double	8	This defines OI % Limit in terms of % of Market wide open interest for particular Asset Type and Instrument Identifier.
Effective OI Limit	Double	8	This defines Effective OI Limit for particular Asset Type and Instrument Identifier. This will be Maximum of OI Quantity Limit and OI Percentage Limit.
Actual OI Quantity	Double	8	This defines Actual OI Quantity of particular Asset Type and Instrument Identifier for which violation has been generated.
Last Updated Time	Long	4	This contains the latest time for which message is received. The time would be in terms of seconds from 01-01-1970 00:00:00.
Message Text	Char	257	This contains actual message text for violation message in terms of string.
Instrument Type	Short	2	1 – Underlying 3 - Options 4 - Futures
Total		315	

13.7.4 OI Violations Download End Message

Message Code : 9203
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Total		12	

13.7.5 OI Alerts Download Request

Message Code : 9204
Source : Vendor

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Last Downloaded Time	Long	4	This contains the latest time from which message download is required. The time would be in terms of seconds from 01-01-1970 00:00:00. 0 (zero) indicates full download of message.
Total		16	

13.7.6 OI Alerts Download Start Message

Message Code : 9205
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Total		12	

13.7.7 OI Alert Message

Message Code : 9206
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Asset Type	Short	2	0 – Asset Class 1 – Asset 2 – Underlying 3 – Product
Instrument Identifier	Long	4	
Alert Level	Short	2	This value defines level of alert 1 – 1st (Lowest) of 3 Alerts set for OI 2 – 2nd of 3 Alerts set for OI 3 – 3rd (Highest and last) of 3 Alerts set for OI 4 – Alert for 100% breach of OI
Alert Percentage	Long	4	This defines the % set for each alert level defined.
Utilized Alert Percentage	Double	8	This contains currently utilized alert % for particular Asset Type and Instrument identifier.
Last Updated Time	Long	4	This contains the latest time for which message is received. The time would be in terms of seconds from 01-01-1970 00:00:00.
Message Text	Char	257	This contains actual message text for Alert message in terms of string.
Instrument Type	Short	2	1 – Underlying 3 - Options 4 - Futures
Total		295	

13.7.8 OI Alerts Download End Message

Message Code : 9207
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Total		12	

13.8 Conditional Order Cancellation Messages

13.8.1 7725 - COC Request

Name	Type	Byte Size	Description
Message Header	Nested	12	

	Structure		
Trading Member ID	Long	4	Corresponding Trading Member ID of the Logon ID.
Logon ID	Long	4	ID by which member has logged on through Open Interface
Exchange Order Number	Unsigned int64	8	Original Order Number as allocated by exchange, in case specific order is to be cancelled. To be set to 0 in case specific order filter is not desired.
Account	Short	2	Account type filter as desired. To be set to -1 in case specific account type filter is not desired.
Client ID	String	11	Client code of the orders to be cancelled.
Participant ID	String	13	Participant ID in case INST account orders are to be cancelled.
Buy Or Sell	Short	2	Buy Or Sell selection for canceling specific type or orders. To be set to -1 in case specific buy or sell filter is not desired.
Conditional Order Cancellation Terms	Nested Structure	2	Filter to specify attributes of orders that are desired to be cancelled. Specific bit to be set to 1 in case attribute filter is desired and to be set to 0 in case attribute filter is not desired.
Conditional order cancellation – instrument definition	Nested Structure	1	Filter to specify orders of certain instrument types that are desired to be cancelled. Specific bit to be set to 1 in case instrument type filter is desired and to be set to 0 in case instrument type filter is not desired.
Underlying identifier	Long	4	Filter to specify orders based on certain underlying instruments. To be set to -1 in case orders for specific underlying are not to be filtered.
Instrument identifier	Long	4	Filter to specify orders of certain specific instruments. To be set to -1 in case orders of specific instruments are not to be filtered.
User Reference Text	String	51	Refer Rules for Free Flow Text
Strategy Id	Short	2	Refer Rule for Algorithm Trading Identifier
Strategy Trigger Sequence No	Unsigned Int64	8	Refer Rule for Algorithm Trading Identifier
Total		128	

13.8.2 7750 - COC Response

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Trading Member	Long	4	As sent with Message 7725

Name	Type	Byte Size	Description
ID			
Logon ID	Long	4	As sent with Message 7725
Exchange Order Number	Unsigned int64	8	As sent with Message 7725
Account	Short	2	As sent with Message 7725
Client ID	String	11	As sent with Message 7725
Participant ID	String	13	As sent with Message 7725
Buy Or Sell	Short	2	As sent with Message 7725
Conditional Order Cancellation Terms	Nested Structure	2	As sent with Message 7725
Conditional order cancellation – instrument definition	Nested Structure	1	As sent with Message 7725
Underlying identifier	Long	4	As sent with Message 7725
Instrument identifier	Long	4	As sent with Message 7725
User Reference Text	String	51	As sent with Message 7725
ReasonCode	Short	2	0 – Success < 0 – Failure
Rejection Reason	String	129	Reason of COC rejection in running text.
Total		249	

13.9 Trade Modification

13.9.1 8005 - Trade Modification Request

Message Code : 8005
Source : Vendor

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Instrument Identifier	Long	4	The U/L Asset/ product Identifier is specified by Exchange for permitted U/L Asset/ products for trading.
Logon ID	Long	4	As sent with Message 8000
Exchange Order Number	Unsigned int64	8	As sent with Message 8000
Trade Number	Long	4	As sent with Message 8000
Account Client Information	Nested Structure	26	Previous Account Client Information i.e. the existing information that is being modified.
Account Client Information	Nested Structure	26	Updated Account Client Information i.e. the resultant information that is being expected at the end of this operation.
User Reference Text	String	51	Refer Rules for Free Flow Text
Initiated By	Long	4	ID by which member has logged on through Open Interface

Name	Type	Byte Size	Description
Trade Split Number	Long	4	Should always be 0
Total		143	

13.9.2 8010 - Trade Modification Confirmation

Message Code : 8010
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Instrument Identifier	Long	4	The U/L Asset/ product Identifier is specified by Exchange for permitted U/L Asset/ products for trading.
Logon ID	Long	4	As sent with Message 8005
Exchange Order Number	Unsigned int64	8	As sent with Message 8005
Trade Number	Long	4	As sent with Message 8005
Account Client Information	Nested Structure	26	Previous Account Client Information i.e. the existing information that is being modified.
Account Client Information	Nested Structure	26	Updated Account Client Information i.e. the resultant information that is being expected at the end of this operation.
User Reference Text	String	51	As sent with Message 8005
Initiated By	Long	4	As sent with Message 8005
Confirmation Time	Long	4	Time at which trade modification request is confirmed by the exchange in terms of seconds from 01-01-1970 00:00:00 hours.
Trade Split Number	Long	4	Should always be 0
Total		147	

13.9.3 8015 - Trade Modification Rejection

Message Code : 8015
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	Error Code will be the Numeric Notation of Error, which resulted in request rejection.
Instrument Identifier	Long	4	The U/L Asset/ product Identifier is specified by Exchange for permitted U/L Asset/ products for trading.
Logon ID	Long	4	As sent with Message 8005
Exchange Order Number	Unsigned int64	8	As sent with Message 8005
Trade Number	Long	4	As sent with Message 8005
Account Client Information	Nested Structure	26	Previous Account Client Information i.e. the existing information that is being modified.

Name	Type	Byte Size	Description
Account Client Information	Nested Structure	26	Updated Account Client Information i.e. the resultant information that is being expected at the end of this operation.
User Reference Text	String	51	As sent with Message 8005
Initiated By	Long	4	As sent with Message 8005
Confirmation Time	Long	4	Time at which trade modification request is confirmed by the exchange in terms of seconds from 01-01-1970 00:00:00 hours.
Trade Split Number	Long	4	Should always be 0
Total		147	

13.9.4 8500 – Resubmit for Approval Request

Message Code : 8500
Source : Vendor

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Resubmit Trades For Approval	Nested Structure	20	
Total		32	

13.9.5 8505 –Resubmit for Approval Confirmation

Message Code : 8505
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Resubmit Trades For Approval	Nested Structure	20	
Status	Short	2	Revised Trade Status.
Confirmation Time	Long	4	Time at which trade resubmission request is confirmed by the exchange in terms of seconds from 01-01-1970 00:00:00 hours.
Total		38	

13.9.6 8510 –Resubmit for Approval Rejection

Message Code : 8510
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Resubmit Trades For Approval	Nested Structure	20	
Status	Short	2	Latest Trade Status.
Rejection Time	Long	4	Time at which trade resubmission request is rejected by the exchange in terms of seconds

Name	Type	Byte Size	Description
			from 01-01-1970 00:00:00 hours.
Total		38	

13.10 Delivery Instructions

13.10.1 8030 - DI Entry Request

Message Code : 8030
Source : Vendor

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Instrument Identifier	Long	4	The U/L Asset / product Identifier is specified by Exchange for permitted U/L Assets / products for trading.
Logon ID	Long	4	ID by which member has logged on through Open Interface
Quantity	Long	4	Refer to Rules for Order Quantity
Account	Short	2	1 – Order placed for Client 2 – Order placed for House / Proprietary Account 3 - Order placed for Institutions
Client ID	String	11	Client Code for whose request is placed. For Account Type 1 & 3, Client ID is mandatory. For Account Type 2, Client ID is Optional.
DIFlag	Short	2	3 – Delivery Instructions
Buy Or Sell	Short	2	1 – Buy 2 – Sell
Reserved	String	14	
User Reference Text	String	51	Refer Rules for Free Flow Text
Initiated By	Long	4	ID by which member has logged on through Open Interface
Total		110	

13.10.2 8031 - DI Entry Confirmation

Message Code : 8031
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Instrument Identifier	Long	4	The U/L Asset / product Identifier is specified by Exchange for permitted U/L Assets / products for trading.
Logon ID	Long	4	As sent with Message 8030
Quantity	Long	4	As sent with Message 8030

Name	Type	Byte Size	Description
Account	Short	2	As sent with Message 8030
Client ID	String	11	As sent with Message 8030
Entry Time	Long	4	As sent with Message 8030
Last Update Time	Long	4	As sent with Message 8030
DIFlag	Short	2	As sent with Message 8030
Buy Or Sell	Short	2	As sent with Message 8030
DINumber	Unsigned int64	8	Unique Number assigned by Exchange
Reserved	String	14	
User Reference Text	String	51	As sent with Message 8030
Initiated By	Long	4	As sent with Message 8030
Confirmation Time	Long	4	Time at which request is confirmed by the exchange in terms of seconds from 01-01-1970 00:00:00 hours.
Total		130	

13.10.3 8032 - DI Entry Rejection

Message Code : 8032
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	Error Code in Message Header will contain the error value.
Instrument Identifier	Long	4	The U/L Asset / product Identifier is specified by Exchange for permitted U/L Assets / products for trading.
Logon ID	Long	4	As sent with Message 8030
Quantity	Long	4	As sent with Message 8030
Account	Short	2	As sent with Message 8030
Client ID	String	11	As sent with Message 8030
Entry Time	Long	4	As sent with Message 8030
Last Update Time	Long	4	As sent with Message 8030
DIFlag	Short	2	As sent with Message 8030
Buy Or Sell	Short	2	As sent with Message 8030
DINumber	Unsigned int64	8	Unique Number assigned by Exchange
Reserved	String	14	
User Reference Text	String	51	As sent with Message 8030
Initiated By	Long	4	As sent with Message 8030
Confirmation Time	Long	4	Time at which request is rejected by the exchange in terms of seconds from 01-01-1970 00:00:00 hours.

Name	Type	Byte Size	Description
Total		130	

13.10.4 8033 - DI Modification Request

Message Code : 8033
Source : Vendor

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Instrument Identifier	Long	4	The U/L Asset / product Identifier is specified by Exchange for permitted U/L Assets / products for trading.
Logon ID	Long	4	As sent with Message 8030
Quantity	Long	4	Refer to Rules for Order Quantity
Account	Short	2	1 – Order placed for Client 2 – Order placed for House / Proprietary Account 3 - Order placed for Institutions This field cannot be modified.
Client ID	String	11	Client Code for whose request is placed. For Account Type 1 & 3, Client ID is mandatory. For Account Type 2, Client ID is Optional.
Entry Time	Long	4	Request entry time of Instrument in terms of seconds from 01-01-1970 00:00:00 hours.
Last Update Time	Long	4	Request Update time of Instrument in terms of seconds from 01-01-1970 00:00:00 hours.
DIFlag	Short	2	As sent with Message 8030
Buy Or Sell	Short	2	As sent with Message 8030
DINumber	Unsigned int64	8	As sent with Message 8031
Reserved	String	14	
User Reference Text	String	51	Refer Rules for Free Flow Text
Initiated By	Long	4	As sent with Message 8030
Total		126	

13.10.5 8034 - DI Modification Confirmation

Message Code : 8034
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Instrument Identifier	Long	4	The U/L Asset / product Identifier is specified by Exchange for permitted U/L Assets / products for trading.
Logon ID	Long	4	As sent with Message 8033

Name	Type	Byte Size	Description
Quantity	Long	4	As sent with Message 8033
Account	Short	2	As sent with Message 8033
Client ID	String	11	As sent with Message 8033
Entry Time	Long	4	As sent with Message 8033
Last Update Time	Long	4	As sent with Message 8033
DIFlag	Short	2	As sent with Message 8033
Buy Or Sell	Short	2	As sent with Message 8033
DINumber	Unsigned int64	8	As sent with Message 8033
Reserved	String	14	
User Reference Text	String	51	As sent with Message 8033
Initiated By	Long	4	As sent with Message 8033
Confirmation Time	Long	4	Time at which request is confirmed by the exchange in terms of seconds from 01-01-1970 00:00:00 hours.
Total		130	

13.10.6 8035 - DI Modification Rejection

Message Code : 8035
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	Error Code in Message Header will contain the error value.
Instrument Identifier	Long	4	The U/L Asset / product Identifier is specified by Exchange for permitted U/L Assets / products for trading.
Logon ID	Long	4	As sent with Message 8033
Quantity	Long	4	As sent with Message 8033
Account	Short	2	As sent with Message 8033
Client ID	String	11	As sent with Message 8033
Entry Time	Long	4	As sent with Message 8033
Last Update Time	Long	4	As sent with Message 8033
DIFlag	Short	2	As sent with Message 8033
Buy Or Sell	Short	2	As sent with Message 8033
DINumber	Unsigned int64	8	As sent with Message 8033
Reserved	String	14	
User Reference Text	String	51	As sent with Message 8033
Initiated By	Long	4	As sent with Message 8033
Confirmation Time	Long	4	Time at which request is rejected by the exchange in terms of seconds from 01-01-1970 00:00:00

Name	Type	Byte Size	Description
			hours.
Total		130	

13.10.7 8036 - DI Cancel Request

Message Code : 8036
Source : Vendor

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Instrument Identifier	Long	4	The U/L Asset / product Identifier is specified by Exchange for permitted U/L Assets / products for trading.
Logon ID	Long	4	As sent with Message 8030
Quantity	Long	4	As sent with Message 8030 / 8033
Account	Short	2	As sent with Message 8030 / 8033
Client ID	String	11	As sent with Message 8030 / 8033
Entry Time	Long	4	Request entry time of Instrument in terms of seconds from 01-01-1970 00:00:00 hours.
Last Update Time	Long	4	Request Update time of Instrument in terms of seconds from 01-01-1970 00:00:00 hours.
DIFlag	Short	2	As sent with Message 8030 / 8033
Buy Or Sell	Short	2	As sent with Message 8030 / 8033
DINumber	Unsigned int64	8	As sent with Message 8031
Reserved	String	14	
User Reference Text	String	51	Refer Rules for Free Flow Text
Initiated By	Long	4	ID by which member has logged on through Open Interface
Total		126	

13.10.8 8037 - DI Cancel Confirmation

Message Code : 8037
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Instrument Identifier	Long	4	The U/L Asset / product Identifier is specified by Exchange for permitted U/L Assets / products for trading.
Logon ID	Long	4	As sent with Message 8036
Quantity	Long	4	As sent with Message 8036
Account	Short	2	As sent with Message 8036

Name	Type	Byte Size	Description
Client ID	String	11	As sent with Message 8036
Entry Time	Long	4	As sent with Message 8036
Last Update Time	Long	4	As sent with Message 8036
DIFlag	Short	2	As sent with Message 8036
Buy Or Sell	Short	2	As sent with Message 8036
DINumber	Unsigned int64	8	As sent with Message 8036
Reserved	String	14	
User Reference Text	String	51	As sent with Message 8036
Initiated By	Long	4	As sent with Message 8036
Confirmation Time	Long	4	Time at which request is confirmed by the exchange in terms of seconds from 01-01-1970 00:00:00 hours.
Total		130	

13.10.9 8038 - DI Cancel Rejection

Message Code : 8038
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	Error Code in Message Header will contain the error value.
Instrument Identifier	Long	4	The U/L Asset / product Identifier is specified by Exchange for permitted U/L Assets / products for trading.
Logon ID	Long	4	As sent with Message 8036
Quantity	Long	4	As sent with Message 8036
Account	Short	2	As sent with Message 8036
Client ID	String	11	As sent with Message 8036
Entry Time	Long	4	As sent with Message 8036
Last Update Time	Long	4	As sent with Message 8036
DIFlag	Short	2	As sent with Message 8036
Buy Or Sell	Short	2	As sent with Message 8036
DINumber	Unsigned int64	8	As sent with Message 8036
Reserved	String	14	
User Reference Text	String	51	As sent with Message 8036
Initiated By	Long	4	As sent with Message 8036
Confirmation Time	Long	4	Time at which request is rejected by the exchange in terms of seconds from 01-01-1970 00:00:00 hours.
Total		130	

13.11 MULTI-LEG ORDER MESSAGES

13.11.1 7800 - Multi-Leg order entry request

Message Code : 7800
Source : Vendor

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Type of Order	Short	2	1 – Regular Lot order Will be rejected for any other value.
Spread Order Price	Long	4	Refer to Rules for Order Price
Logon ID	Long	4	0 (Zero)
Account Client Information	Nested Structure	26	
User Reference Text	String	51	Refer Rules for Free Flow Text
Terminal Info	Unsigned Int64	8	Refer to Note on Terminal Info
ML Order Attribute Identifier	Short	2	Spread IOC – 0 Multi-Leg order - 1
Strategy Id	Short	2	Refer Rule for Algorithm Trading Identifier
Strategy Trigger Sequence No	Unsigned Int64	8	Refer Rule for Algorithm Trading Identifier
Market Protection Percentage	Short	2	Market Protection % for the order. Refer Rule for Market Price Protection.
Number Of Legs	Short	2	
Individual Leg Request Details	Nested structure Array	45	Variable length array of individual leg request details. (15*3)
Total		168	Variable length

13.11.2 7825 - Multi-Leg order entry confirmation

Message Code : 7825
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Type of Order	Short	2	As sent with Message 7800
Exchange Multi-Leg Reference Number	Unsigned int64	8	Reference number assigned to Multi-Leg request.
Spread Order Price	Long	4	As sent with Message 7800
Order Entry Time	Long	4	As assigned by the exchange.
Order Time	Long	4	As assigned by the exchange.
Logon ID	Long	4	ID as provided by the exchange for Logon.
Account Client Information	Nested Structure	26	
User Reference Text	String	51	As sent with Message 7800
Terminal Info	Unsigned Int64	8	Refer to Note on Terminal Info
ML Order Attribute	Short	2	Spread IOC – 0

Identifier			Multi-Leg order – 1
Market Protection Percentage	Short	2	Market Protection % assigned by the exchange. Refer Rule for Market Price Protection
Number Of Legs	Short	2	
Individual Leg Response Details	Nested Structure Array	81	Variable length array of individual leg response details. (27*3)
Total		210	Variable length.

13.11.3 7850 - Multi-Leg order entry error

Message Code : 7850
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	Error Code will represent the Numeric Notation of error which resulted in request rejection.
Type of Order	Short	2	As sent with Message 7800
Exchange Multi-Leg Reference Number	Unsigned int64	8	Reference number assigned to Multi-Leg request.
Spread Order Price	Long	4	As sent with Message 7800
Order Entry Time	Long	4	As assigned by the exchange.
Order Time	Long	4	As assigned by the exchange.
Logon ID	Long	4	ID as provided by the exchange for Logon.
Account Client Information	Nested Structure	26	
User Reference Text	String	51	As sent with Message 7800
Terminal Info	Unsigned Int64	8	Refer to Note on Terminal Info
ML Order Attribute Identifier	Short	2	Spread IOC – 0 Multi-Leg order - 1
Market Protection Percentage	Short	2	Market Protection % assigned by the exchange. Refer Rule for Market Price Protection
Number Of Legs	Short	2	
Individual Leg Response Details	Nested Structure Array	81	Variable length array of individual leg response details. (27*3)
Total		210	Variable length

14 Unsolicited Messages

14.1 8000 – Trade Download / Notification

Message Code : 8000
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Trade Notification	Nested Structure	207	
Total		219	

14.2 8002 – Spread Trade Download / Notification

Message Code : 8002
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Trade Notification1	Nested Structure	207	Near Month Trade Notification
Trade Notification2	Nested Structure	207	Far Month Trade Notification
Total		426	

14.3 8003 – Institutional Trade Acceptance

Message Code : 8003
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Logon ID	Long	4	ID by which member has logged on through Open Interface
Quantity Traded	Long	4	Traded Quantity for which notification is received.
Order Number	Unsigned int64	8	Order Number of the corresponding Trade
Trade Number	Long	4	Trade Number of the corresponding Trade
Participant Clearing Member ID	String	13	Corresponding Clearing Member ID of Participant
Institutional Remarks	String	26	Remarks as entered by corresponding Clearing Member of Participant.
Confirmation Time	Long	4	Time at which Institutional Trade is accepted by the exchange in terms of seconds from 01-01-1970 00:00:00 hours.
Trade Split Number	Long	4	Should always be 0
Total		79	

14.4 8004 – Institutional Trade Rejection

Message Code : 8004
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	Error Code will be Numeric Notation of Error, which resulted in request rejection.
Logon ID	Long	4	ID by which member has logged on through Open Interface
Quantity Traded	Long	4	Traded Quantity for which notification is received.
Order Number	Unsigned int64	8	Order Number of the corresponding Trade
Trade Number	Long	4	Trade Number of the corresponding Trade
Participant Clearing Member ID	String	13	Corresponding Clearing Member ID of Participant

Name	Type	Byte Size	Description
Institutional Remarks	String	26	Remarks as entered by corresponding Clearing Member of Participant.
Confirmation Time	Long	4	Time at which Institutional Trade is rejected by the exchange in terms of seconds from 01-01-1970 00:00:00 hours.
Trade Split Number	Long	4	Should always be 0
Total		79	

14.5 8020 - Trade Modification Acceptance

Message Code : 8020
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	Error Code will be Numeric Notation of Error, which resulted in request rejection.
Instrument Identifier	Long	4	The U/L Asset/ product Identifier is specified by Exchange for permitted U/L Asset/ products for trading.
Logon ID	Long	4	As sent with Message 8005
Exchange Order Number	Unsigned int64	8	As sent with Message 8005
Trade Number	Long	4	As sent with Message 8005
Account Client Information	Nested Structure	26	Previous Account Client Information i.e. the existing information that is being modified.
Account Client Information	Nested Structure	26	Updated Account Client Information i.e. the resultant information that is being expected at the end of this operation.
User Reference Text	String	51	As sent with Message 8005
Initiated By	Long	4	As sent with Message 8005
Confirmation Time	Long	4	Time at which trade modification request is confirmed by the exchange in terms of seconds from 01-01-1970 00:00:00 hours.
Status	Short	2	0 – Accepted but trade details are not updated 1 – Accepted -1 – Rejected
Trade Split Number	Long	4	Should always be 0
Total		149	

14.6 8040 - DI Acceptance

Message Code : 8040
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Instrument Information	Nested Structure	19	

Name	Type	Byte Size	Description
Logon ID	Long	4	As sent with Message 8030
Quantity	Long	4	As sent with Message 8030
Account	Short	2	As sent with Message 8030
Client ID	String	11	As sent with Message 8030
Entry Time	Long	4	As sent with Message 8030
Last Update Time	Long	4	As sent with Message 8030
DIFlag	Short	2	As sent with Message 8030
Buy Or Sell	Short	2	As sent with Message 8030
DINumber	Unsigned int64	8	Unique Number assigned by Exchange
Reserved	String	14	
User Reference Text	String	51	As sent with Message 8030
Initiated By	Long	4	As sent with Message 8030
Confirmation Time	Long	4	Time at which request is rejected by the exchange in terms of seconds from 01-01-1970 00:00:00 hours.
Status	Short	2	0 – Accepted and Pending 1 – Cancelled -1 – Rejected -2 – Transmitted
Total		132	

14.6.1 8025 - Notification of Stop Loss Order Triggered

Message Code : 8025
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Order Number	Unsigned int64	8	Order Number as allotted by exchange while entering the order.
Order Price	Long	4	Price at which the order is placed in the system.
Trigger Price	Long	4	Price at which order was to get triggered.
Trigger Time	Long	4	Datetime in terms of seconds from 01-01-1970 00:00:00 hrs when the order was triggered.
User Reference Text	String	51	Latest Text as provided in Order Entry/Modification Request
Total		83	

14.7 8050 - Exchange Order Cancellation Notification

Message Code : 8050
Source : Exchange

The message is sent when the order remains unexecuted partly or fully but it's validity ends OR when the limits of the member is exhausted and exchange initiates cancellation of pending orders OR when the order gets cancelled due to Self-Match Prevention

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Exchange Order Number	Unsigned int64	8	As sent with Message 7650
Order Time	Long	4	Time at which order cancellation is accepted by the exchange in terms of seconds from 01-01-1970 00:00:00 hours.
Logon ID	Long	4	As sent with Message 7650
Total		28	

14.8 9350 – Limits Download Response / Notification

Message Code : 9350
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Daily Future Buy Limit	Double	8	Daily Futures buy limit set by Member Admin
Daily Future Sell Limit	Double	8	Daily Futures sell limit set by Member Admin
Daily Spot Buy Limit	Double	8	Daily Spot buy limit set by Member Admin
Daily Spot Sell Limit	Double	8	Daily Spot sell limit set by Member Admin
Daily Option Buy Limit	Double	8	Daily Option buy limit set by Member Admin
Daily Option Sell Limit	Double	8	Daily Option sell limit set by Member Admin
Total		60	

Note: Product Id in Message Header will be received as 0 (Zero)

14.9 Notification for Change of Margin Rates

14.9.1 4000 - Start Of Margin Change Notification

Message Code : 4000
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Total		12	

14.9.2 4025 - Margin Change Notification

Message Code : 4025
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
No of Records	Short	2	Total Number of Message
Instrument Margin Information	Nested Structure	141	
Total		155	

14.9.3 4050 - End Of Margin Change Notification

Message Code : 4050
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Number of Records Updated	Long	4	
Total		16	

14.10 4100 - System Information Download

Message Code : 4100
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Market Status	Short	2	1 – Open 2 – Close
Disclosed Quantity percentage Allowed	Short	2	Minimum Disclosed Quantity percentage allowed on actual quantity.
Session ID	Short	2	Session No. for which statistics is being sent. 0 indicates cumulative statistics for the day.
Trade Modification Time Indicator	Short	2	-1 – In case trade modification acceptance time has not elapsed 1 – In case trade modification acceptance time has elapsed
Delivery Instruction Modification Time Indicator	Short	2	-1 – In case acceptance time has not elapsed 1 – In case acceptance time has elapsed
Special Session Status	Short	2	-1 – Not defined 5 – Close 6 - Open
Special Session ID	Short	2	Special Session No. for which statistics is being sent.
Reserved	Short	2	
Reserved	Short	2	
Reserved	Short	2	

Name	Type	Byte Size	Description
Reserved	Short	2	
Reserved	Short	2	
Post Close Session Status	Short	2	-1 – Not Defined 7 – Open 8 – Close
Post Close Session ID	Short	2	Post close session No. for which the information is being sent.
Reserved	Short	2	Value should be '-1'
Reserved	Short	2	
Total		44	

14.11 4125 – Market Open Notification

Message Code : 4125
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Market Type	Short	2	1 - Normal Market 2 – Special Market 5 – Post close market
Session ID	Short	2	Session No. for the Market Type specified above for which the open message is send.
Total		16	

14.12 4150 – Market Close Notification

Message Code : 4150
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Market Type	Short	2	1 - Normal Market 2 – Special Market 5 – Post close market
Session ID	Short	2	Session No. for the Market Type specified above for which the close message is send..
Total		16	

14.13 4200 – Broadcast Server Info

Message Code : 4200
Source : Exchange

This message will send details for Broadcast Server IP Address and Port Number. On receiving this message application should connect to Broadcast Server.

Name	Type	Byte Size	Description

Message Header	Nested Structure	12	
Reserved1	Char	1	
Server Name	String	16	Name of broadcast server
Reserved2	String	37	
Message Size	Short	2	Total Number bytes in Message Data
Message Data	bytes	2048	Max length is 2048 in bytes. Message Data contains nested structures of Broadcast Server Info Details (of size 39).
Total		2116	

14.14 10000 - Heart Beat

Message Code : 10000
Source : Vendor

The exchange should receive the heartbeat atleast once in 180 seconds failing which the exchange will drop the connection.

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Total		12	

14.15 8075 – Start Of Multi-Leg Trade Notification

Message Code : 8075
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Exchange Multi-Leg Reference Number	Unsigned int64	8	
ML Order Attribute Identifier	Short	2	Spread IOC – 0 Multi-Leg order - 1
Total		22	

14.16 8016 –Multi-Leg Trade Download / Notification

Message Code : 8016
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Exchange Multi-Leg Reference Number	Unsigned int64	8	Reference number assigned to corresponding Message 7825.
ML Order Attribute Identifier	Short	2	Spread IOC – 0 Multi-Leg order - 1
Trade Notification	Nested structure	207	

Total	229	

14.17 8150 – End Multi-Leg Trade Notification

Message Code : 8150
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Exchange Multi-Leg Reference Number	Unsigned int64	8	
ML Order Attribute Identifier	Short	2	Spread IOC – 0 Multi-Leg order - 1
NumberOfTrades	Long	4	
Total		26	

Note:
Multiple multi-leg trade confirmation messages belonging to different multi-leg orders can be interleaved with each other. The third party software compliant to the open interface is expected to handle this case.
While transaction download is in progress, there can be certain multi-leg orders which are in the process of getting validated for matching. The start message (regenerated with new time stamp) and partial matches executed until this point in time will be send asynchronously immediately after end of transaction download. The remaining fills (if applicable) followed by the End Multi-Leg Trade Notification for such orders, will be send asynchronously subsequently.

The third party systems are expected not to use the time stamp of start and end messages as these messages can be generated multiple times with different time stamps. For incremental downloads, the time stamp of the actual trade message should be used.

14.18 8060 - Exchange Multi-Leg order cancellation

Message Code : 8060
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Type of Order	Short	2	As sent with Message 7800
Exchange Multi-Leg Reference Number	Unsigned int64	8	Reference number assigned to Multi-Leg request.
Spread Order Price	Long	4	As sent with Message 7800
Order Entry Time	Long	4	As assigned by the exchange.
Order Time	Long	4	As assigned by the exchange.
Logon ID	Long	4	ID as provided by the exchange for Logon.
Account Client Information	Nested Structure	26	
User Reference Text	String	51	As sent with Message 7800
Terminal Info	Unsigned Int64	8	Refer to Note on Terminal Info

ML Order Attribute Identifier	Short	2	Spread IOC – 0 Multi-Leg order - 1
Market Protection Percentage	Short	2	Market Protection % assigned by the exchange. Refer Rule for Market Price Protection
Number Of Legs	Short	2	
Individual Leg Response Details	Nested Structure Array	81	Variable length array of individual leg response details.(27*3)
Total		210	Variable length

14.19 8100 – Market Wide OI Violation UMS

Message Code :8100
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Asset Type	Short	2	0 – Asset Class 1 – Asset 2 – Underlying 3 – Product
Instrument Identifier	Long	4	
Status	Short	2	0 – Active – This means received message is for change of status from violated status to active. 1 – Inactive – This means received message is for change of status from active status to violated
OI Quantity Limit	Double	8	This defines fixed Quantity limit for particular Asset Type and Instrument Identifier.
OI Percentage Limit	Double	8	This defines MWOI % Limit in terms of % of Market wide open interest for particular Asset Type and Instrument Identifier.
Effective OI Limit	Double	8	This defines Effective MWOI Limit for particular Asset Type and Instrument Identifier. This will be Maximum of MWOI Quantity Limit and MWOI Percentage Limit.
Actual OI Quantity	Double	8	This defines Actual MWOI Quantity of particular Asset Type and Instrument Identifier for which violation has been generated.
Last Updated Time	Long	4	This contains the latest time for which message is received. The time would be in terms of seconds from 01-01-1970 00:00:00.
Message Text	Char	257	This contains actual message text for violation message in terms of string.
Instrument Type	Short	2	1 – Underlying 3 - Options 4 - Futures
Total		315	

14.20 8101 – Market Wide OI Alerts UMS

Message Code : 8101
Source : Exchange

Name	Type	Byte Size	Description

Message Header	Nested Structure	12	
Asset Type	Short	2	0 – Asset Class 1 – Asset 2 – Underlying 3 – Product
Instrument Identifier	Long	4	
Alert Level	Short	2	This value defines level of alert 1 – 1st (Lowest) of 3 Alerts set for MWOI 2 – 2nd of 3 Alerts set for MWOI 3 – 3rd (Highest and last) of 3 Alerts set for MWOI 4 – Alert for 100% breach of MWOI
Alert Percentage	Long	4	This defines the % set for each alert level defined.
Utilized Alert Percentage	Double	8	This contains currently utilized alert % for particular Asset Type and Instrument identifier.
Last Updated Time	Long	4	This contains the latest time for which message is received. The time would be in terms of seconds from 01-01-1970 00:00:00.
Message Text	Char	257	This contains actual message text for Alert message in terms of string.
Instrument Type	Short	2	1 – Underlying 3 - Options 4 - Futures
Total		295	

14.21 8105 – Trade Cancellation UMS

Message Code : 8105
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Order Number	Unsigned Int64	8	Exchange Order Number of a trade that is being cancelled.
Trade Number	Long	4	Trade Number of a trade that is being cancelled.
Trade Split Number	Long	4	Should always be 0
Instrument Identifier	Long	4	The U/L Asset / product Identifier is specified by Exchange for permitted U/L Asset/ products for trading.
LogonID	Long	4	ID by which member has logged on through Open Interface
Status	Short	2	Please refer to the Status field in Trade Notification.
InitiationTime	Long	4	Indicates the time when the trade cancellation request was originated. The time would be in terms of seconds from 01-01-1970 00:00:00.
CPRespondedTime	Long	4	Indicates the time when counter party accepted the trade. The time would be in terms of seconds from 01-01-1970 00:00:00.
ExchangeRespondedTime	Long	4	Indicates the time when Exchange approved the trade cancellation request. The time would be in terms of seconds from 01-01-1970 00:00:00.
CPUserRemarks	String	26	Remarks entered by Counter Party of the trade.

Name	Type	Byte Size	Description
ExchangeRemarks	String	26	Remarks entered by Exchange while approving the trade.
Total		102	

14.22 9500 –Group Level Halt Info

Message Code : 9500
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Group Id	Short	2	Group Id of a set of products for which the trading is halted.
Status	Short	2	1 – Start of trading for Group Id 2 – End of trading for Group Id
Trigger Time	Long	4	Time when the message is triggered in the Exchange.
Total		20	

14.23 31067 – Change of Daily Price Range Notification

Message Code : 31067
Source : Exchange

Name	Type	Byte Size	Description
Message Header	Nested Structure	12	
Reserved	Short	2	
Instrument Identifier	Long	4	The U/L Asset / product Identifier is specified by Exchange for permitted U/L Asset/ products for trading.
Low Price	Long	4	Lowest permissible price for the day, in terms of paise.
High Price	Long	4	Highest permissible price for the day, in terms of paise.
Total		26	

14.24 File format for Instrument Master

The instrument master shall be made available through FTP to the members connecting through Open Interface. No messaging download for instrument master shall be provided.

File Name: <Exchange Acronym>Scrips.bcp
File Type: Comma Separated File

Field Description	Data Type	Description
Reserved	Short	
Reserved	Long	
Reserved	Short	

Field Description	Data Type	Description
Reserved	Char (8)	
Reserved	Short	
Instrument Identifier	Long	The U/L Asset / product Identifier is specified by Exchange for permitted U/L Asset/ products for trading.
Instrument Code	Char (12)	The U/L Asset / product Code is specified by Exchange for permitted U/L Asset/ products for trading.
Instrument Series	Char (3)	Series identification of the instrument
Instrument Type	Short	1 – Underlying 3 - Options 4 - Futures
Permit Trading	1 Byte	0 – Trading not allowed 1 – Trading allowed
Reserved	Long	
Reserved	Long	
Bandhani Range	Char (25)	Optional If defined, will indicate range of minimum low to maximum high a product can be quoted at.
Reserved	1 Byte	
Reserved	1 Byte	
Reserved	1 Byte	
Reserved	1 Byte	
Product Start Date	Long	First Trading date of the product. Date in terms of seconds from 01-01-1970 00:00:00 hrs.
Reserved	Long	
Last Trading Date	Long	Last Trading Date of the product. in terms of seconds from 01-01-1970 00:00:00 hrs. The time would result to 23:59:59 hrs.
Lot Size	Long	Size of Lot in whose multiple order should be placed.
Tick Size	Long	Amount in paise in whose multiple price should be specified.
Instrument Description	Char (25)	Description of the instrument to give additional information to Product Code.
Reserved	Long	
Reserved	Long	
Reserved	Long	
Delivery Start Date	Long	First Date from which delivery shall be accepted for the Product. in terms of seconds from 01-01-1970 00:00:00 hrs.
Delivery End Date	Long	Last Date upto which delivery shall be accepted for the Product. in terms of seconds from 01-01-1970 00:00:00 hrs. The time would result to 23:59:59 hrs.
Reserved	1 Byte	
Trade2Trade Indicator	1 Byte	Will either have a value of 0 or 1. 0 will imply not in T2T and 1 will imply that the product is in T2T.
Index Flag	Short	0 – Is an index participant 1 – Is not an index participant
Default Index	Short	1 – Default Index to be displayed in index bar (Where: Index Instrument is also set to 1) Anything other than 1 means index is not the default index
Index Instrument	Short	0 – Is not and Index Instrument 1 – Is an index instrument

Field Description	Data Type	Description
Feed Flag	Short	1 – on , 0 – Off External Feed Instrument Flag. When Instrument Deleted is marked as 'Y' and Feed Flag is also marked as 1 then consider this instrument as non tradable instrument and prices are shown for this instrument is been taken from other sources.
Reserved	1 Byte	
Reserved	1 Byte	
Reserved	1 Byte	
Last Modified Date	Long	Date and time when the instrument was last modified in terms of seconds from 01-01-1970 00:00:00 hrs.
Instrument Status flag	Char (1)	'N' - Active 'Y' – Inactive or deleted 'S' – Suspended 'D' - Delisted
Instrument Info	Char (40)	Description of the product as provided by the Exchange
Minimum Lot	Short	The minimum quantity for which order can be placed for the instrument. The quantity should be incremented in multiple of this lot.
Tender Period Start Date	Long	First Date from which delivery intention shall be accepted for the product. in terms of seconds from 01-01-1970 00:00:00 hrs.
Tender Period End Date	Long	Last Date upto which delivery intention shall be accepted for the product. in terms of seconds from 01-01-1970 00:00:00 hrs. The time would result to 23:59:59 hrs.
U/L Asset Group	Char (25)	Group under which U/L Asset is classified by the exchange.
Name of Underlying U/L Asset	Char(10)	Name of U/L Asset n which instrument is created
Identifier of the Underlying	Long	The identifier code as assigned by exchange.
Reserved	Long	
Reserved	Long	
Reserved	1 Byte	
Reserved	1 Byte	
Reserved	1 Byte	
Reserved	1 Byte	
Reserved	1 Byte	
Instrument Name	Char (6)	As defined by exchange
Original Expiry Date	Datetime	Date of expiry by which product was created. The date would be in terms of seconds from 01-01-1970 00:00:00 hrs. This depicts the expiry date which is shown along with the product. This date does not change even if the product last trading date is changed Not to refer in case where Instrument Type is 2
Strike Price	Long	Applicable only for Option Instrument
Option Type	Char (2)	Applicable only for Option Instrument 'CA' – Call Option American 'PA' – Put Option American 'CE' – Call Option European 'PE' – Put Option European
CALevel	Short	Applicable only for Option Instrument

Field Description	Data Type	Description
Segment Id	Short	13 – Underlying 12 – Products
Reserved	Short	
Reserved	Short	
Price Quote Unit	Char(5)	Unit in which price for the product is quoted
Price Quote Quantity	Long	Quantity for which Price is being quoted. To be read with Price Quote Unit.
Terms of Daily Price Range	Short	1 – DPR in %age 2 – DPR as flat per Quantity in paise terms. 4 – Statistical DPR
Upper Daily Price Range	Numeric(20,4)	Upper Price Range to be computed + with previous Day's Close Price. In case of Statistical DPR Value should be actual Upper Daily Price Range
Lower Daily Price Range	Numeric(20,4)	Lower Price Range to be computed - with previous Day's Close Price. In case of Statistical DPR Value should be actual Lower Daily Price Range
Tender Period Indicator	Short	1 – Tender Period Available 2 – Tender Period Not Available
Settlement Method	Short	1 – Delivery Settled 2 – Cash Settled
Terms of Initial Margin	Short	1 – Margin in %age 2 – Flat Margin per quantity in terms of paise.
Buy Initial Margin Rate	Numeric(20,4)	Buy Initial Margin to be computed for the product.
Base Price	Long	Base Price of the product for first day DPR.
Maximum Single Transaction Quantity	Long	Maximum quantity permitted for single order for product.
Maximum Single Transaction Value	Numeric(20,4)	Maximum order value permitted for single order for product based on Last Traded Price.
Instrument Class	Short	Classifier identification for the group of products. To be read with Instrument Name and Instrument Type.
Near Month Instrument Identifier	Long	Applicable only for Spread Instruments, indicating the near month product for the spread. -1 will indicate for non-spread\non instrument
Far Month Instrument Identifier	Long	Applicable only for Spread Instruments, indicating the far month product for the spread. -1 will indicate for non-spread instrument
Reserved	Char(5)	
Reserved	Numeric(20,4)	
Reserved	Char(5)	
Reserved	Numeric(20,4)	
Price Numerator	Numeric(20,4)	Value to be used for deriving the Trade Value.
Specification	Char (100)	Brief product specification
Price Denominator	Numeric(20,4)	Value to be used for deriving the Trade Value.
General Numerator	Numeric(20,4)	Value to be used for deriving the Trade Value.
General Denominator	Numeric(20,4)	Value to be used for deriving the Trade Value.
Lot Numerator	Numeric(20,4)	Value to be used for deriving the Trade Qty.
Lot Denominator	Numeric(20,4)	Value to be used for deriving the Trade Qty.
Decimal Locator	Numeric(10,5)	Multiplier with price to to get the value in Quote Currency.
Series Settlement	Char (2)	Settlement type identification for the instrument.

Field Description	Data Type	Description
Type		
Issued Capital	Numeric(15,0)	Issued capital of listed instrument. Applicable only for equity market vertical instruments.
Face Value	Long	Face value of each listed instrument. Applicable only for equity market vertical instruments.
Corporate Action Reason	Char (50)	Corporate action information in the listed instrument. Applicable only for equity market vertical instruments
Free Float Capital	Numeric(15,0)	Free float capital of listed instrument. Applicable only for equity market vertical instruments.
ISIN Number	Char (12)	ISIN number of the listed instrument.
Sell Initial Margin Rate	Numeric(20,4)	Sell Initial Margin to be computed for the product.
Credit Rating	Char (12)	Credit rating information of the listed Product
Market Vertical	Short	Market vertical information of the instrument.
Terms Of Special Margin	Short	1 – Margin in %age 2 – Flat Margin per quantity in terms of paise.
Buy Special Margin Rate	Numeric(20,4)	Buy Special Margin to be computed for the product
Sell Special Margin Rate	Numeric(20,4)	Sell Special Margin to be computed for the product
Initial Margin Spread Benefit Flag	Short	0 – Off 1- On This is applicable at the underlying level.
Instrument End Date-Time	Long	Date-Time combination depicting Instrument End Date-Time.
Trading Currency	Char (3)	Currency ISO Code in which trading will take place i.e. USD, INR etc.
Reserved	Char (3)	
Product Month	Char (7)	
Reserved	Short	
Group Id	Short	
Matching Type	Short	0 = Normal (Price Time Priority)
Spread Type	Short	Please refer to the description Rules for Spread Type Combination.
Reserved	Char(16)	
Value method	Char	1 – Trade Value should be computed as existing (Calculate according to **Method 1**). 2–Trade Value should be computed by considering the logic for IRF products value computation (Calculate according to **Method 2**).
IRF ConfigFactor	Numeric(20,4)	Applicable for IRF products. To be used for computation of Trade Value according to **Method 2**
SLBM Eligibility	Char	Should always be 0
Reserved	Short	
Reserved	Numeric(20,4)	
Reserved	Numeric(20,4)	
Options Pricing Model	Short	For Instrument Type 'Options' (i.e. Instrument Type = 3) following values will be provided: 0 - Black Scholes 3 - Black76 For Instrument Type other than Options, value will

Field Description	Data Type	Description
		be -1 (i.e. Not Applicable).
Reserved	Short	

The Trade Value would be derived as under:
Method 1: Trade Value = Qty * (Price / Decimal Locator) * LotSize * (Gen Numerator/Gen Denominator) * (Price Numerator/Price Denominator)

For example, if USDINR is to be traded in lots of 30 units and the Price is in Paise then Trade Value is derived with following data:
Rate = 705.85 paise (i.e. Rs. 7.0585)
Trading Unit: Units
Lot Size = 30
Price Numerator = 1 (multiplier to convert value from paise to Rupees)
Price Denominator = 100
General Numerator = 3215075 (alternatively can be 32.15075)
General Denominator = 100000 (alternatively can be 1 based on numerator)
Trade Value = ROUND (705.85 * (1 / 100) * 1 * 30 * (3215075 / 100000),2) = 6808.08

Method 2: Trade Value = Qty * (Price / Decimal Locator) * LotSize * (Gen Numerator/Gen Denominator) * (Price Numerator/Price Denominator) * IRF Multiplier
where IRF Multiplier = Face Value – IRF Config Factor * (Face Value - Trade Price)

For example, if IRF 91 Days T- Bills has Face Value = 100, IRF Config Factor = 0.25, Lot Size = 2000, Price Numerator = 1, Price Denominator = 1, General Numerator = 1, General Denominator = 1, Decimal Locator = 100
For Qty of 10 at a price of 92
IRF Multiplier = 100 – 0.25*(100-92) = 98
Trade Value = 10 * (9800/100) * 2000 * (1/1) * (1/1) = 19,60,000

Rules for Spread Type Combination:

1) First and second bit will determine the Spread product B/S Anchor Leg.
   - 1st bit - 2^0 - Near month means
     - Buy would Buy Near month and Sell Far month
     - Sell would Buy Far month and Sell Near month
   - 2nd bit - 2^1 - Far month means
     - Buy would Buy Far month and Sell Near month
     - Sell would Buy Near month and Sell Far month

2) Third and fourth bit will determine whether the Spread product B/S Anchor Leg Trade Price calculation will be based on LTP or Closing Price.
   - 3rd bit – 2^2 - Last Traded Price
   - 4th bit – 2^3 - Closing Price

3) Fifth and sixth bit will determine whether the Spread product calculation will be based on Near month or Far month.
   - 5th bit – 2^4 - Near Month would refer Near Month's LTP/Closing Price based on defined 3rd/4th bit
   - 6th bit – 2^5 - Far Month would refer Far Month's LTP/Closing Price based on defined 3rd/4th bit

15 File format for Participant Master

The participant master shall be made available through FTP to the members connecting through Open Interface. No messaging download for participant master shall be provided.

File Name: <Exchange Acronym>_PART.bcp
File Type: Comma Separated File

Field Description	Data Type	Description
Participant ID	Char(12)	Institution Participant ID
Participant Name	Char(40)	Institution Participant Name
Status	Char (1)	A – Active D – De-active
Last Modified Date	Long	Date and time when the Participant was last modified in terms of seconds from 01-01-1970 00:00:00 hrs.
Reserved	Short	

16 File format for Currency Master

The currency master shall be made available through FTP to the members connecting through Open Interface. No messaging download for currency master shall be provided.

File Name: <Exchange Acronym>_CURRENCY_MASTER.bcp
File Type: Comma Separated File

Field Description	Data Type	Description
Currency ID	Short	Unique Currency ID
Currency Code	Char (3)	The actual currency ISO code e.g. INR, USD etc.
Currency Description	Char (20)	
Remarks	Char (25)	
Last Updated Date	Long	Date and time when the currency was last modified in terms of seconds from 01-01-1970 00:00:00 hrs.

17 File format for Currency Pair Master

The currency pair master shall be made available through FTP to the members connecting through Open Interface. No messaging download for currency pair master shall be provided.

File Name: <Exchange Acronym>_CURRENCY_PAIR_MASTER.bcp
File Type: Comma Separated File

Field Description	Data Type	Description
Currency Pair ID	Short	Unique Currency ID
Currency Pair Code	Char (6)	Combination currency code e.g. USDINR
From Currency ID	Short	Source Currency ID for conversion.
To Currency ID	Short	Destination Currency ID for conversion.
Currency Pair Description	Char (20)	Description of Currency Pair
From Currency Unit	Numeric (6, 0)	Used with Currency Conversion Rate. To be read with ‘From Currency ID’. For example : 100 in this field, ‘YEN’ in ‘From Currency ID’ and ‘INR’ in ‘To Currency ID’, to be read as ‘100 YEN per INR’.
Currency Pair Decimal Locator	Numeric (6, 0)	For example : 100 to indicate 2 place decimal, 10000 to indicate 4 place decimal, etc.
Remarks	Char (25)	
Last Update Date	Long	Date and time when the currency was last modified in terms of seconds from 01-01-1970 00:00:00 hrs.

18 File format for Asset Master

The asset master shall be made available through FTP to the members connecting through Open Interface. No messaging download for asset master shall be provided.

File Name: <Exchange Acronym>_ASSET_MASTER.bcp
File Type: Comma Separated File

Field Description	Data Type	Description
Asset Instrument Identifier	Long	Unique Asset Instrument Identifier.
Asset Name	Char (50)	Asset Name
Last Update Date	Long	Date and time when the Asset was last modified in terms of seconds from 01-01-1970 00:00:00 hrs.

19 File format for Asset Underlying Mapping

The asset underlying map shall be made available through FTP to the members connecting through Open Interface. No messaging download for asset underlying map shall be provided.

File Name: <Exchange Acronym>_ASSET_ UNDERLYING_MAP.bcp
File Type: Comma Separated File

Field Description	Data Type	Description
Asset Instrument Identifier	Long	Unique Asset Instrument Identifier.
Asset Underlying Instrument Identifier	Long	Asset Underlying instrument identifier.
Price Numerator	Numeric(20,4)	Numerator value.
Price Denominator	Numeric(20,4)	Denominator value.
Last Update Date	Long	Date and time when the Asset Underlying Mapping was last modified in terms of seconds from 01-01-1970 00:00:00 hrs.

- End of Document –