Interface Specifications
HKEX Orion Central Gateway - Securities Market (OCG-C)

FIX Drop Copy Protocol

Version 3.1
23 September 2021

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1. Document Control

1.1 Change History

Version Number	Issue Date	Section Number	Status
1.0	31 October 2012	All	First Version
1.1	21 December 2012	▪ 3.2 – Comp ID of HKEX ▪ 3.6 – Password Policy ▪ 6.5 – Board Lot Order Handling ▪ 7.7.1 – Order Accepted ▪ 7.7.3 – Execution Report - Order Cancelled (Unsolicited) ▪ 7.7.7 – Board Lot/Odd Lot Trade Cancelled ▪ 7.8.1 – Trade Accepted ▪ 7.8.2 – Trade Cancelled ▪ 8 – Data Dictionary ▪ Appendix A – Password Policy	Revised Version
1.2	25 March 2013	3.4 – Encryption 7 – Message Definitions 8.2 – Data Dictionary.	Minor Revisions
1.3	28 June 2013	3.6 – Change Password 6.7 – Odd Lot Order Handling 7.7.6 – Auto-matched Trade (Order Executed) • Inclusion of TrdMatchID(880) 7.7.7 – Auto-matched Trade Cancellation (Executed Trade Cancelled) 7.9 – Business Messages – Semi-Auto Matched Trade 7.10.1 – Business Message Reject (j) 8.2 - Business Level	Revised Version
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1.5	20 June 2014	▪ 6.7 – Odd lot/Special lot Order Handling ▪ 6.12 – Cancelled Semi-Auto Matched Trades ▪ 7.7.8 – Trade (Odd lot/Special lot Order Executed) ▪ 7.7.9 – Trade (Semi-Auto-matched) Cancelled ▪ 7.9 – Business Messages - Semi-Auto Matched Trade	Revised Version
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Version Number	Issue Date	Section Number	Status
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2.1	12 July 2017	7.7.3 Order Cancelled – Unsolicited Keep same message format as for AMS (no RejectText(1328) field).	Revised Version
2.2	29 June 2018	▪ 6.15 Session Contents Update for the obsolescence of terminal and OG devices.	Revised Version
3.0	28 December 2020	Update for CMG migration: ▪ Global terminology change of OCG to CMG ▪ Support RSA Padding scheme OAEP for password encryption in the Logon message	Revised Version
3.0	11 February 2021	Update for Section 4.7 Fault Tolerance	Revised Version
3.1	13 August 2021	• Provide Aggressive/Passive Indicator for auto-matched trades • Increase the transaction time precision to microsecond	Revised Version
3.1	23 September 2021	• Change the name CMG to OCG-C	Revised Version

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2. Introduction

This document describes the FIX interface protocol of the HKEX Orion Central Gateway - Securities Market ("OCG-C"), the market access platform for the Securities market.

The OCG-C provides an application level interface to HKEX securities trading system ("OTP-C") for drop copy purpose.

The terminology used, message format, message flow and event models described throughout this document are as per FIX 5.0 SP2 protocol specifications with HKEX specific extension packs.

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3. Connectivity

3.1 Session

Exchange Participants connect their broker supplied systems ("BSS" or "Client") to the OCG-C via subscription to one or more OCG-C "Session". This connection is a standard TCP/IP point-to-point connection.

EPs are expected to pre-register at least one IP address using which a client from their end would establish a Trading Session with the OCG-C. EPs can optionally pre-register up to 3 additional IP addresses for each Session, for backup purposes.

A session can be established from only one of the pre-registered IP addresses for that session. EPs can pre-register any given IP address for more than one session such that the same BSS can be used to connect to OCG-C through one or more sessions.

3.2 Comp ID

The client should use the Comp ID (a unique session identifier) provided by HKEX for each session in order to connect to the OCG-C. A single client may have multiple connections to the OCG-C i.e., multiple FIX sessions, each with its own Comp ID.

The messages sent to the OCG-C should contain the Comp ID assigned to the client in the field Comp ID in the header section.

CompID of the OCG-C, as set for TargetCompID of the client initiated messages & SenderCompID of the OCG-C initiated messages is "HKEXCC".

3.3 IP Address and Port Numbers

A FIX client is expected to hunt for a connection point (IP Address and Port Number) within a pool of connection points provided by HKEX for the following OCG-C service.

At the time of the first logon for the day, the client is expected to attempt to connect to the first connection point within the pool. If this first attempt is not succeeded or if the connection is accepted but abruptly dropped by the OCG-C without any message before the Logon message can be exchanged, then the client is expected to continue attempting the connection points in the pool one by one in sequence until a successful connection and a FIX session can be established. If a session could not be established having attempted all the connection points in the pool, the client is expected to cycle back to the first connection point then and retry.

During a reconnection within the same day the client can attempt to connect to the identified connection point (IP and Port) through the connection hunting process in order to re-establish the session, before moving to the other connection point.

HKEX will provide this pool of IP address and Port numbers through a separate medium.

3.4 Encryption

The OCG-C interface protocol expects password and new password be encrypted when they are sent in the Logon message from the client to the OCG-C.

To encrypt the password, the client is expected to use a 2048-bit RSA (http://en.wikipedia.org/wiki/RSA_(algorithm)) public key circulated (through a different medium) by HKEX. The binary output of the RSA encryption must be represented in Big Endian (Padding scheme is PKCS #1 or OAEP) and then converted to an alphanumeric value

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by means of standard base-64 encoding (http://en.wikipedia.org/wiki/Base64) when communicating with the OCG-C.

HKEX may periodically renew the public key used by the client and after a public key renewal; a client may continue to use the old key for a limited grace period. Both keys may be used during this time.

3.5 Password

The client should specify their password in the EncryptedPassword (1402) field of the Logon (35=A) message. This password must be in encrypted form.

The status of the password (i.e. whether it is accepted or rejected) will be specified in the SessionStatus (1409) field of the Logon (35=A) sent by the OCG-C to confirm the establishment of a FIX connection.

Repeated failures in password validation may force HKEX to lock the client; the EP is expected to contact HKEX to unlock the client and reset the password.

3.6 Change Password

Each new Comp ID will be assigned a password on registration. The client is expected to change the password upon first logon whenever a password is (re)issued by HKEX.

Password change request can be made together with Logon (35=A) request. The client should specify the encrypted new password in the EncryptedNewPassword (1404) field and the current encrypted password in the EncryptedPassword (1402) field.

The new password must comply with HKEX password policy (refer to **Appendix A**). The status of the new password (i.e. whether it is accepted or rejected) will be specified in the SessionStatus (1409) field of the Logon sent by the OCG-C to confirm the establishment of a FIX connection. The new password will, if accepted, be effective for subsequent logins.

The client is required to change the password periodically. HKEX will set expiry duration for the password without exemption; a reminder will be sent indicating that the password is to about to expire, through the Text (58) field in the Logon (35=A) response. Once the password has expired for a client, that client will not be allowed to logon, and the EP is required to contact HKEX to unlock and reset the client password.

3.7 Failure and Recovery

The system has been designed with fault tolerance and disaster recovery technology that ensures that trading should continue in the unlikely event of a process or server outage.

If the client is unexpectedly disconnected, it should attempt to re-connect to the OCG-C before attempting to follow the connection mechanism described in **Section 3.3**.

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4. Session Management

4.1 Establishing a FIX Session

Each client will use one of the IP address and port sets provided to establish a TCP/IP connection with the OCG-C. The client will initiate a FIX session at the start of each trading day by sending the Logon (35=A) message.

A client must identify itself by providing its Comp ID in SenderCompID (49) field. The OCG-C will validate this SenderCompID, password and IP address of the client.

Once the client is authenticated, the OCG-C will respond with a Logon (35=A) message with SessionStatus (1409) set to 0 = Session Active. If the client's Logon message included the field NewEncryptedPassword and the client is authenticated, the OCG-C will respond with a Logon message with SessionStatus (1409) set to 1 = Session Password Changed.

The client must wait for the Logon from the OCG-C before sending additional messages. If additional messages are received from the client before the exchange of Logon messages, the TCP/IP connection with the client will be disconnected.

If a logon attempt fails for the following reasons, the OCG-C will send a Logout (35=5) or a Reject (35=3) and then terminate the session:

- Password failure
- Comp ID is locked
- Logon is not permitted during this time

For all other reasons, including the following, the OCG-C will terminate the session without sending a Logout or Reject:

- Invalid Comp ID or IP address

If during a logon of a Comp ID, the OCG-C receives a second connection attempt while a valid FIX session is already underway for that same Comp ID, the OCG-C will terminate both connections without sending a Logout or Reject message.

Inbound message sequence number will not be incremented if the connection is abruptly terminated due to the logon failure.

If a session level failure occurs due to a message sent by the client that contains a sequence number that is less than what is expected and the PossDup (43) is not set to Y = Yes, then the OCG-C will send a Logout message and terminate the FIX connection. In this scenario the inbound sequence number will not be incremented.

If the OCG-C does not respond to the session initiation (client initiated Logon message), the client is expected to wait for a time period of ***60 seconds*** prior to terminating the connection. The client is expected to retry session initiation after an elapsed time period of ***60 seconds***.

If a client is disconnected abruptly or via a Logout message (35=5) from the OCG-C, the client is expected to wait for a time period of ***10 seconds*** prior to reconnecting to the OCG-C.

4.2 Message Sequence Numbers

As outlined in the FIX protocol, the client and OCG-C will each maintain a separate and independent set of incoming and outgoing message sequence numbers. Sequence numbers should be initialized to 1 (one) at the start of the day and be incremented throughout the session. Either side of a FIX session will track the:

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- NextExpectedMsgSeqNum (789) (starting at 1)
- Next To Be Sent Message Sequence number (starting at 1); with respect to the contra-party.

Monitoring sequence numbers will enable parties to identify and react to missed messages and to gracefully synchronize applications when reconnecting during a FIX session.

Any message sent by either side of a FIX session will increment the sequence number unless explicitly specified for a given message type.

If any message sent by one side of a FIX session contains a sequence number that is LESS than the NextExpectedMsgSeqNum (789) then the other side of this session is expected to send a Logout message and terminate the FIX connection immediately, unless the PossDup flag is set to Y = Yes

A FIX session will not be continued to the next trading day. Both sides are expected to initialize (reset to 1) the sequence numbers at the start of each day. At the start of each trading day if the client starts with a sequence number greater than 1 then the OCG-C will terminate the session immediately without any further exchange of messages.

4.3 Heart Beat and Test Request

The client and the OCG-C will use the Heartbeat (35=0) message to monitor the communication line during periods of inactivity and to verify that the interfaces at each end are available.

The heartbeat interval as in HeartBtInt (108) is recommended to be set as ***20 Seconds***.

The OCG-C will send a Heartbeat anytime it has not transmitted a message for the heartbeat interval. The client is expected to employ the same logic.

If the OCG-C detects inactivity for a period longer than ***3 heartbeat intervals***, it will send a Test Request message to force a Heartbeat from the client. If a response to the Test Request (35=1) is not received within a reasonable transmission time (recommended being an elapsed time equivalent to 3 Heartbeat intervals), the OCG-C will send a Logout (35=5) and break the TCP/IP connection with the client. The client is expected to employ similar logic if inactivity is detected on the part of the OCG-C.

4.4 Terminating a FIX Session

Session termination can be initiated by either the OCG-C or the client by sending a Logout message. Upon receiving the Logout request, the contra party will respond with a Logout message signifying a Logout reply. Upon receiving the Logout reply, the receiving party will terminate the connection.

If the contra-party does not reply with either a Resend Request or a Logout reply, the Logout initiator should wait for ***60 seconds*** prior to terminating the connection.

The client is expected to terminate each FIX connection at the end of each trading day before the OCG-C service is shut down. However, all open FIX connections will be terminated (a Logout message will be sent) by the OCG-C when its service is shut down. Under exceptional circumstances the OCG-C may initiate the termination of a connection during the trading day by sending the Logout message.

If, during the exchange of Logout messages, the client or the OCG-C detects a sequence gap, it should send a Resend Request.

4.5 Re-establishing a FIX Session

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If a FIX connection is terminated during the trading day it may be re-established via an exchange of Logon messages.

Once the FIX session is re-established, the message sequence numbers will continue from the last message successfully transmitted prior to the termination.

4.6 Sequence Reset

The sequence reset could be done in two modes;

1. Gap-fill mode:

   Gap-fill mode is expected to be used by one side when skipping session level messages which can be ignored by the other side.

2. Reset mode:

   Reset mode is used only in exceptional scenarios to indicate a reset in the session's starting sequence number. This mode can ONLY be used by the OCG-C. Client initiated resets would be rejected by the OCG-C.

Following scenarios exist:

4.6.1 During a Session

The OCG-C and the client may use the Sequence Reset (35=4) message in Gap Fill mode if either side wishes to increase the expected incoming sequence number of the other party.

The OCG-C may also use the Sequence Reset message in Sequence Reset mode if it wishes to increase the expected incoming sequence number of the other party. The Sequence Reset mode should only be used to recover from an emergency situation. It should not be relied upon as a regular practice.

4.6.2 When starting a new Session

4.6.2.1 Reset Initiated by the Client

Reset sequence (reset to 1) through the Logon Message will not be facilitated by the OCG-C. In order to reset the sequence (reset to 1), the client should manually inform the HKEX Operations Desk.

4.6.2.2 Reset Initiated by the OCG-C

The system has been designed with fault tolerance and disaster recovery technology that should ensure that the OCG-C retains its incoming and outgoing message sequence numbers for each client in the unlikely event of an outage. However, the client is required to support a manual request by HKEX to initialize sequence numbers prior to the next login attempt.

4.7 Fault Tolerance

After a failure on client side or on OCG-C side, the client is expected to be able to continue the same session.

In case of a catastrophic scenario, the FIX gateway will restart from a higher sequence number considering the previous session or may start from sequence number 1.

If the sequence number is reset to 1 by the OCG-C, all previous messages will be available for the client side.

The client and the OCG-C are expected to negotiate on the NextExpectedMsgSeqNum (789) and Next To Be Received Sequence number through an alternate medium prior to initiating the new session (Manually setting the sequence number for both ends after having a direct communication with the client).

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4.8 Checksum Validation

The OCG-C performs a checksum validation on all incoming messages. Incoming messages that fail the checksum validation will be rejected and the connection will be dropped by the OCG-C without sending a logout.

Conversely, in case of a checksum validation failure, the client is expected to drop the connection and take any appropriate action before reconnecting.

Messages that fail the checksum validation should not be processed.

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5. Recovery

5.1 General Message Recovery

- A gap is identified when an incoming message sequence number is found to be greater than NextExpectedMsgSeqNum (789).
- The Resend Request will indicate the BeginSeqNo (7) and EndSeqNo (16) of the message gap identified and when replying to a Resend Request, the messages are expected to be sent strictly honouring the sequence.
- If messages are received outside of the BeginSeqNo and EndSeqNo, then the recovering party is expected to queue those messages until the gap is recovered.

  During the message recovery process, the recovering party will increment the *Next Expected Sequence* number accordingly based on the messages received. If messages applicable to the message gap are received out of sequence then the recovering party will drop these messages.
- The party requesting the Resend Request can specify "0" in the EndSeqNo to indicate that they expect the sender to send ALL messages starting from the BeginSeqNo.

  In this scenario, if the recovering party receives messages with a sequence greater than the *BeginSeqNo,* out of sequence, the message will be ignored.
- Administrative messages such as Sequence Reset, Heartbeat and Test Request which can be considered irrelevant for a retransmission could be skipped using the Sequence Reset message in gap-fill mode.

  Note that the OCG-C expects the client to skip Sequence Reset messages when replying to a Resend Request at all times.
- When resending messages, the OCG-C would use either PossDup or PossResend flag to indicate whether the messages were retransmitted earlier.

  If PossDup flag is set Y = Yes, it indicates that the same message with the given sequence number with the same business content may have been transmitted earlier.

  In the case where PossResend flag is set to Y = Yes, it indicates that the same business content may have been transmitted previously but under the different message sequence number. In this case business contents needs to be processed to identify the resend. For example, in Execution Reports the ExecID (17) may be used for this purpose.

5.2 Resend Request

The client may use the Resend Request message to recover any lost messages. This message may be used in one of three modes:

(i) To request a single message. The BeginSeqNo and EndSeqNo should be the same.

(ii) To request a specific range of messages. The BeginSeqNo should be the first message of the range and the EndSeqNo should be the last of the range.

(iii) To request all messages after a particular message. The BeginSeqNo should be the sequence number immediately after that of the last processed message and the EndSeqNo should be zero (0).

5.3 Logon Message Processing – Next Expected Message Sequence

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The session initiator should supply the NextExpectedMsgSeqNum (789) the value next expected from the session acceptor in MsgSeqNum (34). The session acceptor should validate the logon request including that NextExpectedMsgSeqNum (789) does not represent a gap. It then constructs its logon response with NextExpectedMsgSeqNum (789) containing the value next expected from the session initiator in MsgSeqNum (34) having incremented the number above the logon request if that was the sequence expected.

The session initiator must wait until the logon response is received in order to submit application messages. Once the logon response is received, the initiator must validate that NextExpectedMsgSeqNum (789) does not represent a gap.

In case of gap detection from either party (lower than the next to be assigned sequence) recover all messages from the last message delivered prior to the logon through the specified NextExpectedMsgSeqNum (789) sending them in order, then gap fill over the sequence number used in logon and proceed sending newly queued messages with a sequence number one higher than the original logon.

Neither side should generate a resend request based on MsgSeqNum (34) of the incoming Logon message but should expect any gaps to be filled automatically by following the Next Expected Sequence processing described above.

Note that indicating the NextExpectedMsgSeqNum (789) in the Logon (35=A) is mandatory.

5.4 Possible Duplicates

The OCG-C handles possible duplicates according to the FIX protocol. The client and the OCG-C use the PossDupFlag (43) field to indicate that a message may have been previously transmitted with the same MsgSeqNum (34).

5.5 Possible Resends

5.5.1 Client Initiated Messages

The OCG-C does not handle possible resends for the client-initiated messages and the message will be processed without considering the value in the PossResend (97) field.

5.5.2 OCG-C Initiated Messages

The OCG-C may use the PossResend (97) field to indicate that an application message may have already been sent under a different MsgSeqNum (34). The client should validate the contents (e.g., ExecID (17)) of such a message against those of messages already received during the current trading day to determine whether the new message should be ignored or processed.

5.6 Gap Fills

The following messages are expected to be skipped using gap-fills when being retransmitted:

1. Logon
2. Logout
3. Heartbeat
4. Test Request
5. Resent Request
6. Sequence Reset

All other messages are expected to be replayed within a retransmission.

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5.7 Transmission of Missed Messages

The Execution Report & Trade Capture Reports messages generated during a period when a client is disconnected from the OCG-C will be sent to the client when it next reconnects. In the unlikely event the disconnection was due to an outage of the OCG-C, all such messages will include a PossResend (97) set to Y = Yes.

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6. Service Description

6.1 Data Types

Data Types used are based on the published standard FIX specifications.

6.2 Security Identification

Instruments will be identified using the SecurityID (48) field. It is required to specify SecurityIDSource (22) as Exchange Symbol (8) and SecurityExchange (207) as XHKG (FIX exchange code for HKEX).

6.3 Party Identification

Party Identification is defined as follows:

ID	Description	FIX Tag and Value
Broker ID	Identifier of the member the interest is submitted under	PartyRole (452)=1 and PartyID (448)
Submitting Broker ID	Identifier of the entering member the interest is submitted under, if different from Broker ID mentioned above	PartyRole (452)=36 and PartyID (448)
Contra Broker ID	Identifier of the Contra member the interest is submitted under	PartyRole (452)=17 and PartyID (448)
BS User ID	The location ID of the member as referred to by Broker ID or Submitting Broker ID	PartyRole (452)=75 and PartyID (448)

6.4 Client Order ID

In a drop copy message ClOrdID (11) field will be provided only if the original message submitted through the Trading interface had this field. The same rule is applicable to OrigClOrdID (41).

6.5 Board Lot Order Handling

Order book updates such as new board (i.e., round) lot orders, board lot order cancels, board lot order amends, resultant trades, trade cancels etc. will be published to the drop copy clients using Execution Report (35=8)message.

For Non-CG originated Order Cancel/Replace:

- Drop Copy will send two execution reports, one for the cancellation of the original order followed by the acknowledgement of the Replaced Order (if applicable).
- The Cancellation due to Cancel/Replace will be treated as an Unsolicited Cancellation (Exec Restatement Reason = 100)
- In the Execution Report sent for the acknowledgment of the Replaced order, the cumulative quantity will be specified as 0 and order quantity and leaves quantity will be equal to the open order quantity at the market due to the amend request.
- In a case where the Replaced order is rejected, only the cancellation of the original order will be reported to the drop copy client

6.6 Quote Handling

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The Execution Report (35=8) message is used to notify the drop copy client if a quote is accepted, or updated, cancelled or executed; each side (54) within a quote is considered as a board (i.e., round) lot order.

6.7 Odd Lot/Special Lot Order Handling

Order book updates such as new odd lot/special lot orders & odd lot/special lot order cancels will be published to the drop copy clients using Execution Report (35=8) message.

Trades concluded through semi-automatic trading & related trade cancels will also be published to the drop copy client.

In general, the OCG-C uses the following approach for sending the odd lot/special lot trading related messages:

Business Scenario	Odd lot/Special Lot Order Submitting Broker		Trade Reporting Broker	
	is a Non-OCG-C session broker	is a OCG-C session broker	is a Non-OCG-C session broker	is a OCG-C session broker
Odd lot/Special lot New Order – Confirmation	Execution Report (35=8)	Execution Report (35=8)	*N/A*	
Odd lot/Special lot Cancel – Confirmation	Execution Report (35=8)	Execution Report (35=8)	*N/A*	
Odd lot/Special lot Trade – Accepted	Trade Capture Report (35=AE)	Execution Report (35=8)	Trade Capture Report (35=AE)	Trade Capture Report (35=AE)
Odd lot/Special lot Trade – Cancelled	Trade Capture Report (35=AE)	Execution Report (35=8)	Trade Capture Report (35=AE)	Trade Capture Report (35=AE)

6.8 Trade Report Handling

Trade Capture Report (35=AE) message is used to notify the drop copy client when an off-exchange trade is reported or an already reported off-exchange trade is cancelled successfully.

6.9 Execution ID

The OCG-C will use the ExecID (17) field to affix a unique identifier for each Execution Report. ExecID value will be unique per trading day.

6.10 Execution Reports

The Execution Report (35=8) message is used to communicate many different events to the drop copy client. The events are differentiated by the value in the ExecType (150) field as outlined below:

ExecType (150)	Description	OrdStatus (39)
0 = New	**Order Accepted** Indicates that a new order has been accepted.	▪ 0 = New
C = Expired	**Order Expired** Indicates that an order has been expired.	▪ C = Expired

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ExecType (150)	Description	OrdStatus (39)
	OrigClOrdID field will not be provided in this Execution Report.	
F = Trade	**Order Executed (Trade)** Indicates that an order has been partially or fully filled. The execution details (e.g., price and quantity) are specified.	▪ 1 = Partially Filled ▪ 2 = Filled
4 = Cancelled	**Order Cancelled** Indicates that an Order Cancel Request has been accepted and successfully processed. This message can also be sent unsolicited in which case the Execution Report may include the ExecRestatementReason field to indicate the reason for cancellation; OrigClOrdID field will not be provided.	▪ 4 = Cancelled
5 = Replaced	**Order Replaced** Indicates that an Order Cancel/Replace Request has been accepted and successfully processed.	▪ 0 = New ▪ 1 = Partially Filled ▪ 2 = Filled
H = Trade Cancel	**Trade Cancel** Indicates that an execution has been cancelled by Market Operations. The message will include an ExecRefID to identify the execution being cancelled and the updated execution details (e.g., price and quantity).	▪ 0 = New ▪ 1 = Partially Filled ▪ 2 = Filled ▪ 4 = Cancelled ▪ C = Expired

6.11 Cancelled Auto-matched Trades

A trade already concluded for an order could be cancelled by the HKEX Market Operations. A trade cancel will be communicated to the client(s) via an Execution Report (35=8). The Execution Report will include the ExecRefID (19) in order to identify the particular trade which is being cancelled. If a trade is cancelled in this manner, system will not reinstate the LeavesQty (151) of that order by the busted (cancelled) quantity. In this specific scenario OrderQty (38) will NOT be equal to the summation of the LeavesQty (151) + CumQty (14) – cumulative executed quantity.

6.12 Cancelled Semi-Auto Matched Trades

A semi-auto matched trade (i.e., odd lot/special trade) already concluded for an odd lot/special lot order could be cancelled by the HKEX Market Operations. A trade cancel will be communicated to the drop copy client by providing the ExecRefID (19) in order to identify the particular trade which is being cancelled.

6.13 Message Rejection

If an incoming message violates any message level validations such as data type mismatches or message structure mismatches, the messages are expected to be rejected back to the sender using a Reject (35=3) message (applicable to both the client and the OCG-C) and Business Message Reject (35=j) from the OCG-C.

6.14 Copy Message Indicator

CopyMsgIndicator (797) field will be set to Y = Yes for each message sent through the drop copy sessions in order to indicate that the given message is a drop copy of another message.

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6.15 Session Contents

A drop copy connection is configured to receive a copy of all the Execution Reports (35=8) and Trade Capture Reports (35=AE) generated for the Broker ID(s) assigned to the drop copy session, irrespective of the OCG-C Trading Session used by the given Broker ID for trading. However, any rejection message related to order, order cancel, order cancel/replace, quote or trade capture report will not be part of the drop copy.

The drop copy client may have the privilege to subscribe to one of the following drop copy options:

- Trades Only

  Under 'Trades only' option, the client will have access to Execution Reports related to auto-matched trades, Trade Capture reports and Odd-lot trades.

- Orders & Trades

  Under 'Orders & Trades' option, the client will have access to all order (board and odd-lot), quote related Execution Reports and Trade Capture reports

A drop copy client must choose the required option when subscribing to the drop copy service with HKEX market operations. This option can't be changed intra-day.

The following table describes the contents for the two subscription options:

Business Message Type	Order and Trades Option	Trades Only Option
Execution Report (35=8)		
Exec Type = New	√	X
Exec Type = Expired	√	X
Exec Type = Cancelled	√	X
Exec Type = Replaced	√	X
Exec Type = Trade	√	√
Exec Type = Trade Cancel	√	√
Trade Capture Report (35=AE)		
Trade Accepted	√	√
Trade Cancelled	√	√

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7. Message Definitions

7.1 Supported Message Types

All supported message types initiated by the client or the OCG-C:

#	Message	Message Type	Usage
1.	Heartbeat	0	Allows the client and the OCG-C to exercise the communication line during periods of inactivity and verify that the interfaces at each end are available.
2.	Test Request	1	Allows the client or the OCG-C to request a response from the other party if inactivity is detected.
3.	Resend Request	2	Allows for the recovery of messages lost during a malfunction of the communications layers.
4.	Reject	3	Used to reject a message that does not comply with session level validations.
5.	Sequence Reset	4	Allows the client or the OCG-C to increase the expected incoming sequence number of the other party.
6.	Logon	A	Allows the client and the OCG-C to establish a FIX session.
7.	Logout	5	Allows the client and the OCG-C to terminate a FIX session.
8.	Business Message Reject	j	Indicates that an application message could not be processed
9.	Execution Report	8	Indicates one of the following: ▪ Order Accepted ▪ Order Expired ▪ Order Cancelled ▪ Order Replaced ▪ Trade ▪ Trade Cancel
10.	Trade Capture Report	AE	Indicates one of the following: ▪ Trade Submit ▪ Trade Cancel

7.2 In-bound Messages

Only Session-level messages are expected.

7.3 Out-bound Messages

In addition to the Session-level messages, the following lists the messages that are sent by the OCG-C to the client:

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1. Execution Report (35=8)
2. Trade Capture Report (35=AE)

7.4 Message Header

All messages exchanged between the client and the OCG-C have the following standard message header:

FIX Tag	Field Name	Required?	Description
8	BeginString	Y	Always FIXT.1.1
9	BodyLength	Y	Number of bytes after this field up to and including the delimiter immediately preceding the CheckSum.
35	MsgType	Y	Message type.
49	SenderCompID	Y	Comp ID of the party sending the message.
56	TargetCompID	Y	Comp ID of the party the message is sent to.
34	MsgSeqNum	Y	Sequence number of the message.
43	PossDupFlag	N	Indicates whether the message was previously transmitted under the same MsgSeqNum (34). Absence of this field is interpreted as original transmission (N).
97	PossResend	N	Indicates whether the message was previously transmitted under a different MsgSeqNum (34). Absence of this field is interpreted as original transmission (N).
52	SendingTime	Y	Time the message was transmitted.
122	OrigSendingTime	N	Time the message was originally transmitted. If the original time is not available, this should be the same value as SendingTime (52). Required if PossDupFlag (43) is Possible Duplicate (Y).
1128	ApplVerID	N	Version of FIX used in the message: ▪ 9 = FIX50SP2 Required if the message is generated by the OCG-C.

7.5 Message Trailer

All messages exchanged between the client and the OCG-C have the following standard message trailer:

FIX Tag	Field Name	Required?	Description
10	CheckSum	Y	Standard check sum described by FIX protocol. Always last field in the message; i.e. serves,

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FIX Tag	Field Name	Required?	Description
			with the trailing <SOH>, as the end-of-message delimiter. Always defined as three characters.

7.6 Administrative Messages

7.6.1 Logon (A)

This message is initiated by the client and the OCG-C may respond with the same message.

FIX Tag	Field Name	Required?	Description
Message Header			
35	MsgType	Y	A = Logon
Message Body			
98	EncryptMethod	Y	Method of encryption. ▪ 0 = None/Other
108	HeartBtInt	Y	Indicates the heartbeat interval in seconds.
789	NextExpectedMsgSeqNum	Y	Next expected MsgSeqNum value to be received.
1400	EncryptedPasswordMethod	N	Enumeration defining the encryption method used to encrypt password fields: 101 = RSA
1402	EncryptedPassword	N	Encrypted password – encrypted via the method specified in EncryptedPasswordMethod (1400). Padding scheme supported is PKCS #1 or OAEP.
1404	EncryptedNewPassword	N	Encrypted new password – encrypted via the method specified in EncryptedPasswordMethod (1400). Padding scheme supported is PKCS #1 or OAEP.
1409	SessionStatus	N	Status of the FIX session. Required if the message is generated by the OCG-C.
1137	DefaultApplVerID	Y	Default version of FIX messages used in this session: ▪ 9 = FIX50SP2
464	TestMessageIndicator	N	Can be used to specify that this FIX session will be sending and receiving "test" vs. "production" messages Only applicable for Logon (35=A) message from the OCG-C to the client.
58	Text	N	Text field will be used to convey the number of days to password expiry when the OCG-C replies with a Logon (35=A) message upon a successful logon attempt.
Message Trailer			

Password (1402) must be present in the Logon message (35=A) initiated by the client.

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7.6.2 Logout (5)

This message can be initiated by both client and the OCG-C.

FIX Tag	Field Name	Required?	Description
Message Header			
35	MsgType	Y	5 = Logout
Message Body			
1409	SessionStatus	N	Status of the FIX session. Required if the message is generated by the OCG-C.
58	Text	N	Textual reason for the logout.
Message Trailer			

7.6.3 Heartbeat (0)

This message can be initiated by both client and OCG-C.

FIX Tag	Field Name	Required?	Description
Message Header			
35	MsgType	Y	0= Heartbeat
Message Body			
112	TestReqID	N	Required if the heartbeat is a response to a TestRequest (35=1). The value in this field should echo the TestReqID (112) received in the TestRequest .
Message Trailer			

7.6.4 Test Request (1)

This message can be initiated by both the client and the OCG-C.

FIX Tag	Field Name	Required?	Description
Message Header			
35	MsgType	Y	1= Test Request
Message Body			
112	TestReqID	Y	Identifier included in Test Request message to be returned in resulting Heartbeat.
Message Trailer			

7.6.5 Resend Request (2)

This message can be initiated by both client and the OCG-C.

FIX Tag	Field Name	Required?	Description
Message Header			
35	MsgType	Y	2= Resend Request

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Message Body			
7	BeginSeqNo	Y	Sequence number of the first message expected to be resent.
16	EndSeqNo	Y	Sequence number of the last message expected to be resent. This may be set to 0 to request the sender to transmit ALL messages starting from BeginSeqNo (7).
Message Trailer			

7.6.6 Reject (3)

This message is initiated by the OCG-C.

FIX Tag	Field Name	Required?	Description
Message Header			
35	MsgType	Y	3= Reject
Message Body			
45	RefSeqNum	Y	Sequence number of the message which caused the rejection
371	RefTagID	N	If a message is rejected due to an issue with a particular field its tag number will be indicated.
372	RefMsgType	N	Message type of the rejected message.
373	SessionRejectReason	N	Code specifying the reason for the reject: ▪ 0 = Invalid Tag Number ▪ 1 = Required Tag Missing ▪ 2 = Tag not defined for this message ▪ 3 = Undefined tag ▪ 4 = Tag specified without a value ▪ 5 = Value is incorrect (out of range) for this tag ▪ 6 = Incorrect data format for value ▪ 9 = CompID problem ▪ 10 = Sending Time Accuracy problem ▪ 11 = Invalid Msg Type ▪ 13 = Tag appears more than once ▪ 15 = Repeating group fields out of order ▪ 16 = Incorrect NumInGroup count for repeating group ▪ 18 = Invalid/Unsupported Application Version ▪ 99 = Other
58	Text	N	Text specifying the reason for the rejection.
Message Trailer			

7.6.7 Sequence Reset (4)

This message can be initiated by both client and the OCG-C.

FIX Tag	Field Name	Required?	Description
Message Header			
35	MsgType	Y	4= Sequence Reset

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Message Body			
36	NewSeqNo	Y	Sequence number of the next message to be transmitted.
123	GapFillFlag	N	Mode in which the message is being used. Absence of this field is interpreted as Sequence Reset (N).
Message Trailer			

7.7 Business Messages – Execution Reports (8)

7.7.1 Order Accepted

The OCG-C will send this execution report once a new order (board lot or odd lot/special lot) has been accepted.

FIX Tag	Field Name	Required?	Description
Message Header			
35	MsgType	Y	8 = Execution Report
Message Body			
11	ClOrdID	N	Client specified identifier of the order.
37	OrderID	Y	Order ID as assigned by the exchange.
17	ExecID	Y	Unique Execution ID assigned for each Execution Report generated.
Component Block <Parties>			
453	NoPartyIDs	Y	Number of party identifiers. The value in this field can be 1 or 2.
→ 448	PartyID	Y	ID of the Broker client submitting the order: Broker ID/BS User ID.
→ 447	PartyIdSource	Y	Defines the naming convention used in specifying the PartyID (448): ▪ D = Proprietary/Custom Code
→ 452	PartyRole	Y	Role of the specified PartyID (448): ▪ 1 = Executing Firm (Broker ID that submitted the order) ▪ 75 = Location ID (BS User ID)
End Component Block			
Component Block <Instrument>			
48	SecurityID	Y	Instrument identifier
22	SecurityIDSource	Y	Identifies the source of the SecurityID (48): ▪ 8 = Exchange Symbol Required if: SecurityID (48) is specified

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207	SecurityExchange	N	The market which is used to identify the security: ▪ XHKG Required if: SecurityIDSource (22) = 8 (Exchange Symbol).
End Component Block			
40	OrdType	N	Order type applicable to the order: ▪ 1 = Market ▪ 2 = Limit
59	TimeInForce	N	Time qualifier of the order: ▪ 0 = Day (Default) ▪ 3 = Immediate or Cancel = IOC ▪ 4 = Fill or Kill = FOK ▪ 9 = At Crossing. Applicable for orders in Auction session. Absence of this field is interpreted as 0 = Day.
54	Side	Y	Side of the order ▪ 1 = Buy ▪ 2 = Sell ▪ 5 = Sell Short
38	OrderQty	N	Total order quantity of the order
44	Price	N	Price of order. Required if: OrdType (40) = 2 (Limit).
60	TransactTime	Y	The time at which the particular message was generated.
528	OrderCapacity	N	Designates the capacity of the firm placing the order: ▪ A = Agency ▪ P = Principal
529	OrderRestrictions	N	Restrictions associated with this order: ▪ 2 = Index Arbitrage ▪ 5 = Acting as Market Maker or Specialist in Security ▪ 6 = Acting as Market Maker or Specialist in underlying of a derivative security The above 3 values are applicable only if Side (54) = 5 (Sell Short)
1090	MaxPriceLevels	N	Maximum number of price levels to trade through. Applicable if: Order Type (40) = 2 (Limit). If present, this should be set as 1.
77	PositionEffect	N	Indicates whether the resulting position after a trade should be an opening position or closing position: ▪ C = Close Applicable only if: Side (54) = 1 (Buy) to indicate covering a short sell.

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39	OrdStatus	Y	Order Status after applying the transaction that is being communicated: ▪ 0 = New
150	ExecType	Y	Execution Type that indicates the reason for the generation of the Execution Report: ▪ 0 = New
14	CumQty	Y	Cumulative execution size
151	LeavesQty	Y	Open order quantity
58	Text	N	Free Text
1093	LotType	N	Lot Type of the order: ▪ 1 = Odd Lot ▪ 2 = Round Lot Absence of this field indicates a Round (i.e., Board) Lot order.
797	CopyMsgIndicator	Y	Indicates whether or not this message is a drop copy of another message. Always set to Y.
Message Trailer			

7.7.2 Order Cancelled

The OCG-C sends this execution report once the request to cancel an order (board lot or odd lot/special lot) has been accepted.

FIX Tag	Field Name	Required?	Description
Message Header			
35	MsgType	Y	8 = Execution Report
Message Body			
11	ClOrdID	N	Client specified identifier of the order cancel request.
41	OrigClOrdID	N	Original client specified identifier for the incoming cancel request
37	OrderID	Y	Order ID as assigned by the exchange.
17	ExecID	Y	Unique Execution ID assigned for each Execution Report generated.
Component Block <Parties>			
453	NoPartyIDs	Y	Number of party identifiers. The value in this field can be 1 or 2.
→ 448	PartyID	Y	ID of the Broker client submitting the order: Broker ID/BS User ID.
→ 447	PartyIdSource	Y	Defines the naming convention used in specifying the PartyID (448): ▪ D = Proprietary/Custom Code

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→	452	PartyRole	Y	Role of the specified PartyID (448): ▪ 1 = Executing Firm (Broker ID that submitted the order) ▪ 75 = Location ID (BS User ID)
End Component Block				
Component Block <Instrument>				
	48	SecurityID	Y	Instrument identifier
	22	SecurityIDSource	Y	Identifies the source of the SecurityID (48): ▪ 8 = Exchange Symbol Required if: SecurityID (48) is specified
	207	SecurityExchange	N	The market which is used to identify the security: ▪ XHKG Required if: SecurityIDSource (22) = 8 (Exchange Symbol).
End Component Block				
	40	OrdType	N	Order type applicable to the order: ▪ 1 = Market ▪ 2 = Limit
	59	TimeInForce	N	Time qualifier of the order: ▪ 0 = Day (Default) ▪ 3 = Immediate or Cancel = IOC ▪ 4 = Fill or Kill = FOK ▪ 9 = At Crossing. Applicable for orders in Auction session. Absence of this field is interpreted as 0 = Day.
	54	Side	Y	Side of the order ▪ 1 = Buy ▪ 2 = Sell ▪ 5 = Sell Short
	38	OrderQty	N	Total order quantity of the order
	44	Price	N	Price of order. Required if: OrdType (40) = 2 (Limit).
	60	TransactTime	Y	The time at which the particular message was generated.
	528	OrderCapacity	N	Designates the capacity of the firm placing the order: ▪ A = Agency ▪ P = Principal
	529	OrderRestrictions	N	Restrictions associated with this order: ▪ 2 = Index Arbitrage ▪ 5 = Acting as Market Maker or Specialist in Security ▪ 6 = Acting as Market Maker or Specialist in underlying of a derivative security The above 3 values are applicable only if Side (54) = 5 (Sell Short)

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1090	MaxPriceLevels	N	Maximum number of price levels to trade through. Applicable if: OrdType (40) = 2 (Limit). If present, this should be set as 1.
77	PositionEffect	N	Indicates whether the resulting position after a trade should be an opening position or closing position: ▪ C = Close Applicable only if: Side (54) = 1 (Buy) to indicate covering a short sell.
39	OrdStatus	Y	Order Status after applying the transaction that is being communicated: ▪ 4 = Cancelled
150	ExecType	Y	Execution Type that indicates the reason for the generation of the Execution Report: ▪ 4 = Cancelled
14	CumQty	Y	Cumulative execution size
151	LeavesQty	Y	Open order quantity
58	Text	N	Free Text
1093	LotType	N	Lot Type of the order: ▪ 1 = Odd Lot ▪ 2 = Round Lot Absence of this field indicates a Round (i.e., Board) Lot order.
797	CopyMsgIndicator	Y	Indicates whether or not this message is a drop copy of another message. Always set to Y.
Message Trailer			

7.7.3 Order Cancelled – Unsolicited

The OCG-C will send this execution report for an unsolicited cancellation of an order (board lot or odd lot/special lot).

FIX Tag	Field Name	Required?	Description
Message Header			
35	MsgType	Y	8 = Execution Report
Message Body			
11	ClOrdID	N	Client specified identifier of the order.
37	OrderID	Y	Order ID as assigned by the exchange.
17	ExecID	Y	Unique Execution ID assigned for each Execution Report generated.
Component Block <Parties>			
453	NoPartyIDs	Y	Number of party identifiers. The value in this field can be 1 or 2.

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→	448	PartyID	Y	ID of the Broker client submitting the order: Broker ID/BS User ID.
→	447	PartyIdSource	Y	Defines the naming convention used in specifying the PartyID (448): ▪ D = Proprietary/Custom Code
→	452	PartyRole	Y	Role of the specified PartyID (448): ▪ 1 = Executing Firm (Broker ID that submitted the order) ▪ 75 = Location ID (BS User ID)
End Component Block				
Component Block <Instrument>				
	48	SecurityID	Y	Instrument identifier
	22	SecurityIDSource	Y	Identifies the source of the SecurityID (48): ▪ 8 = Exchange Symbol Required if: SecurityID (48) is specified
	207	SecurityExchange	N	The market which is used to identify the security: ▪ XHKG Required if: SecurityIDSource (22) = 8 (Exchange Symbol).
End Component Block				
	40	OrdType	N	Order type applicable to the order: ▪ 1 = Market ▪ 2 = Limit
	59	TimeInForce	N	Time qualifier of the order: ▪ 0 = Day (Default) ▪ 3 = Immediate or Cancel = IOC ▪ 4 = Fill or Kill = FOK ▪ 9 = At Crossing. Applicable for orders in Auction session. Absence of this field is interpreted as 0 = Day.
	54	Side	Y	Side of the order ▪ 1 = Buy ▪ 2 = Sell ▪ 5 = Sell Short
	38	OrderQty	N	Total order quantity of the order
	44	Price	N	Price of order. Required if: OrdType (40) = 2 (Limit).
	60	TransactTime	Y	The time at which the particular message was generated.
	528	OrderCapacity	N	Designates the capacity of the firm placing the order: ▪ A = Agency ▪ P = Principal

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529	OrderRestrictions	N	Restrictions associated with this order: ▪ 2 = Index Arbitrage ▪ 5 = Acting as Market Maker or Specialist in Security ▪ 6 = Acting as Market Maker or Specialist in underlying of a derivative security The above 3 values are applicable only if Side (54) = 5 (Sell Short)
1090	MaxPriceLevels	N	Maximum number of price levels to trade through. Applicable if: OrdType (40) = 2 (Limit). If present, this should be set as 1.
77	PositionEffect	N	Indicates whether the resulting position after a trade should be an opening position or closing position: ▪ C = Close Applicable only if: Side (54) = 1 (Buy) to indicate covering a short sell.
39	OrdStatus	Y	Order Status after applying the transaction that is being communicated: ▪ 4 = Cancelled
150	ExecType	Y	Execution Type that indicates the reason for the generation of the Execution Report: ▪ 4 = Cancelled
14	CumQty	Y	Cumulative execution size
151	LeavesQty	Y	Open order quantity
58	Text	N	Free Text
1093	LotType	N	Lot Type of the order: ▪ 1 = Odd Lot ▪ 2 = Round Lot Absence of this field indicates a Round (i.e., Board) Lot order.
378	ExecRestatementReason	N	Code to identify the reason for an Execution Report message with Exec Type= 4 (Cancel): ▪ 6 = Cancel on Trading Halt/VCM ▪ 8 = Market Operation ▪ 100 = Unsolicited Cancel for original order (for cancel/replace operation which fails market validation) ▪ 101 = OBO Single Order Cancel ▪ 102 = OBO Mass Order Cancel ▪ 103 = Mass cancelled by Broker ▪ 104 = Cancel On Disconnect ▪ 105 = Cancel due to Broker suspension ▪ 106 = Cancel due to Exchange Participant suspension ▪ 107 = System Cancel
797	CopyMsgIndicator	Y	Indicates whether or not this message is a drop copy of another message. Always set to Y.

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Message Trailer			

7.7.4 Order Expired

The OCG-C will send this execution report when an order (board lot or odd lot/special lot) expires.

FIX Tag	Field Name	Required?	Description
Message Header			
35	MsgType	Y	8 = Execution Report
Message Body			
11	ClOrdID	N	Client specified identifier of the order.
37	OrderID	Y	Order ID as assigned by the exchange.
17	ExecID	Y	Unique Execution ID assigned for each Execution Report generated.
Component Block <Parties>			
453	NoPartyIDs	Y	Number of party identifiers. The value in this field can be 1 or 2.
→ 448	PartyID	Y	ID of the Broker client submitting the order: Broker ID/BS User ID.
→ 447	PartyIdSource	Y	Defines the naming convention used in specifying the PartyID (448): ▪ D = Proprietary/Custom Code
→ 452	PartyRole	Y	Role of the specified PartyID (448): ▪ 1 = Executing Firm (Broker ID that submitted the order) ▪ 75 = Location ID (BS User ID)
End Component Block			
Component Block <Instrument>			
48	SecurityID	Y	Instrument identifier
22	SecurityIDSource	Y	Identifies the source of the SecurityID (48): ▪ 8 = Exchange Symbol Required if: SecurityID (48) is specified
207	SecurityExchange	N	The market which is used to identify the security: ▪ XHKG Required if: SecurityIDSource (22) = 8 (Exchange Symbol).
End Component Block			
40	OrdType	N	Order type applicable to the order: ▪ 1 = Market ▪ 2 = Limit

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59	TimeInForce	N	Time qualifier of the order: ▪ 0 = Day (Default) ▪ 3 = Immediate or Cancel = IOC ▪ 4 = Fill or Kill = FOK ▪ 9 = At Crossing. Applicable for orders in Auction session. Absence of this field is interpreted as 0 = Day.
54	Side	Y	Side of the order ▪ 1 = Buy ▪ 2 = Sell ▪ 5 = Sell Short
38	OrderQty	N	Total order quantity of the order
44	Price	N	Price of order. Required if: OrdType (40) = 2 (Limit).
60	TransactTime	Y	The time at which the particular message was generated.
528	OrderCapacity	N	Designates the capacity of the firm placing the order: ▪ A = Agency ▪ P = Principal
529	OrderRestrictions	N	Restrictions associated with this order: ▪ 2 = Index Arbitrage ▪ 5 = Acting as Market Maker or Specialist in Security ▪ 6 = Acting as Market Maker or Specialist in underlying of a derivative security The above 3 values are applicable only if Side (54) = 5 (Sell Short)
1090	MaxPriceLevels	N	Maximum number of price levels to trade through. Applicable if: OrdType (40) = 2 (Limit). If present, this should be set as 1.
77	PositionEffect	N	Indicates whether the resulting position after a trade should be an opening position or closing position: ▪ C = Close Applicable only if: Side (54) = 1 (Buy) to indicate covering a short sell.
39	OrdStatus	Y	Order Status after applying the transaction that is being communicated: ▪ C = Expired
150	ExecType	Y	Execution Type that indicates the reason for the generation of the Execution Report: ▪ C = Expired
14	CumQty	Y	Cumulative execution size
151	LeavesQty	Y	Open order quantity
1328	RejectText	N	Textual description of the reason for expiration

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58	Text	N	Free Text
1093	LotType	N	Lot Type of the order: ▪ 1 = Odd Lot ▪ 2 = Round Lot Absence of this field indicates a Round (i.e., Board) Lot order.
797	CopyMsgIndicator	Y	Indicates whether or not this message is a drop copy of another message. Always set to Y.
Message Trailer			

7.7.5 Order Replaced

The OCG-C sends this execution report when a Cancel/Replace request is accepted. This message is not applicable to an odd lot/special lot order.

FIX Tag	Field Name	Required?	Description
Message Header			
35	MsgType	Y	8 = Execution Report
Message Body			
11	ClOrdID	N	Client specified identifier of the order cancel request.
41	OrigClOrdID	N	Original client specified identifier for the incoming cancel request
37	OrderID	Y	Order ID as assigned by the exchange.
17	ExecID	Y	Unique Execution ID assigned for each Execution Report generated.
Component Block <Parties>			
453	NoPartyIDs	Y	Number of party identifiers. The value in this field can be 1 or 2.
→ 448	PartyID	Y	ID of the Broker client submitting the order: Broker ID/BS User ID.
→ 447	PartyIdSource	Y	Defines the naming convention used in specifying the PartyID (448): ▪ D = Proprietary/Custom Code
→ 452	PartyRole	Y	Role of the specified PartyID (448): ▪ 1 = Executing Firm (Broker ID that submitted the order) ▪ 75 = Location ID (BS User ID)
End Component Block			
Component Block <Instrument>			
48	SecurityID	Y	Instrument identifier

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22	SecurityIDSource	Y	Identifies the source of the SecurityID (48): ▪ 8 = Exchange Symbol Required if: SecurityID (48) is specified
207	SecurityExchange	N	The market which is used to identify the security: ▪ XHKG Required if: SecurityIDSource (22) = 8 (Exchange Symbol).
End Component Block			
40	OrdType	N	Order type applicable to the order: ▪ 1 = Market ▪ 2 = Limit
59	TimeInForce	N	Time qualifier of the order: ▪ 0 = Day (Default) ▪ 3 = Immediate or Cancel = IOC ▪ 4 = Fill or Kill = FOK ▪ 9 = At Crossing. Applicable for orders in Auction session. Absence of this field is interpreted as 0 = Day.
54	Side	Y	Side of the order ▪ 1 = Buy ▪ 2 = Sell ▪ 5 = Sell Short
38	OrderQty	N	Total order quantity of the order
44	Price	N	Price of order. Required if: OrdType (40) = 2 (Limit).
60	TransactTime	Y	The time at which the particular message was generated.
528	OrderCapacity	N	Designates the capacity of the firm placing the order: ▪ A = Agency ▪ P = Principal
529	OrderRestrictions	N	Restrictions associated with this order: ▪ 2 = Index Arbitrage ▪ 5 = Acting as Market Maker or Specialist in Security ▪ 6 = Acting as Market Maker or Specialist in underlying of a derivative security The above 3 values are applicable only if Side (54) = 5 (Sell Short)
1090	MaxPriceLevels	N	Maximum number of price levels to trade through. Applicable if: OrdType (40) = 2 (Limit). If present, this should be set as 1.

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77	PositionEffect	N	Indicates whether the resulting position after a trade should be an opening position or closing position: ▪ C = Close Applicable only if: Side (54) = 1 (Buy) to indicate covering a short sell.
39	OrdStatus	Y	Order Status after applying the transaction that is being communicated: ▪ 0 = New ▪ 1 = Partially Filled
150	ExecType	Y	Execution Type that indicates the reason for the generation of the Execution Report: ▪ 5 = Replaced
14	CumQty	Y	Cumulative execution size
151	LeavesQty	Y	Open order quantity
58	Text	N	Free Text
1093	LotType	N	Lot Type of the order: ▪ 2 = Round Lot Absence of this field indicates a Round (i.e., Board) Lot order.
797	CopyMsgIndicator	Y	Indicates whether or not this message is a drop copy of another message. Always set to Y.
Message Trailer			

Note: For an Order Cancel/Replace Request (i.e., Order Amend Request) submitted through interfaces other than the OCG-C, to modify order price and/or increase order quantity, the Drop Copy interface will provide an Execution Report = Order Cancelled first (for the original order) followed by, if applicable, Execution Report = Order Accepted (for the replaced order).

7.7.6 Auto-matched Trade (Board Lot Order Executed)

The OCG-C sends this execution report for an auto-matched trade.

FIX Tag	Field Name	Required?	Description
Message Header			
35	MsgType	Y	8 = Execution Report
Message Body			
11	ClOrdID	N	Client specified identifier of the order.
37	OrderID	Y	Order ID as assigned by the exchange.
17	ExecID	Y	Unique Execution ID assigned for each Execution Report generated.
880	TrdMatchID	N	Identifier assigned to a trade by the matching system
Component Block <Parties>			
453	NoPartyIDs	Y	Number of party identifiers. The value in this field can be 1 or 2.

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→	448	PartyID	Y	ID of the Broker client submitting the order: Broker ID/BS User ID.
→	447	PartyIdSource	Y	Defines the naming convention used in specifying the PartyID (448): ▪ D = Proprietary/Custom Code
→	452	PartyRole	Y	Role of the specified PartyID (448): ▪ 1 = Executing Firm (Broker ID that submitted the order) ▪ 75 = Location ID (BS User ID)
End Component Block				
Component Block <Instrument>				
	48	SecurityID	Y	Instrument identifier
	22	SecurityIDSource	Y	Identifies the source of the SecurityID (48): ▪ 8 = Exchange Symbol Required if: SecurityID (48) is specified
	207	SecurityExchange	N	The market which is used to identify the security: ▪ XHKG Required if: SecurityIDSource (22) = 8 (Exchange Symbol).
End Component Block				
	40	OrdType	N	Order type applicable to the order: ▪ 1 = Market ▪ 2 = Limit
	59	TimeInForce	N	Time qualifier of the order: ▪ 0 = Day (Default) ▪ 3 = Immediate or Cancel = IOC ▪ 4 = Fill or Kill = FOK ▪ 9 = At Crossing. Applicable for orders in Auction session. Absence of this field is interpreted as 0 = Day.
	54	Side	Y	Side of the order ▪ 1 = Buy ▪ 2 = Sell ▪ 5 = Sell Short
	38	OrderQty	N	Total order quantity of the order
	44	Price	N	Price of order. Required if: OrdType (40) = 2 (Limit).
	60	TransactTime	Y	The time at which the particular message was generated.
	528	OrderCapacity	N	Designates the capacity of the firm placing the order: ▪ A = Agency ▪ P = Principal

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529	OrderRestrictions	N	Restrictions associated with this order: ▪ 2 = Index Arbitrage ▪ 5 = Acting as Market Maker or Specialist in Security ▪ 6 = Acting as Market Maker or Specialist in underlying of a derivative security The above 3 values are applicable only if Side (54) = 5 (Sell Short)
1090	MaxPriceLevels	N	Maximum number of price levels to trade through. Applicable if: OrdType (40) = 2 (Limit). If present, this should be set as 1.
77	PositionEffect	N	Indicates whether the resulting position after a trade should be an opening position or closing position: ▪ C = Close Applicable only if: Side (54) = 1 (Buy) to indicate covering a short sell.
39	OrdStatus	Y	Order Status after applying the transaction that is being communicated: ▪ 1 = Partially Filled ▪ 2 = Filled
150	ExecType	Y	Execution Type that indicates the reason for the generation of the Execution Report: ▪ F = Trade
31	LastPx	Y	Execution Price
32	LastQty	Y	Execution Size
14	CumQty	Y	Cumulative execution size
151	LeavesQty	Y	Open order quantity
574	MatchType	N	The point in the matching process at which the trade was matched: ▪ 4 = Auto match ▪ 5 = Cross Auction
1115	OrderCategory	N	Defines the type of interest behind a trade ▪ A = Internal Cross Order Absence of this field means the trade is not concluded within the same firm
58	Text	N	Free Text
1093	LotType	N	Lot Type of the order: ▪ 2 = Round Lot Absence of this field indicates a Round (i.e., Board) Lot order
1057	AggressorIndicator	N	Used to identify whether the order initiator is an aggressor or not in the auto-matched trade during continuous trading session: ▪ Y = Order initiator is aggressor ▪ N = Order initiator is passive

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797	CopyMsgIndicator	Y	Indicates whether or not this message is a drop copy of another message. Always set to Y.
Message Trailer			

7.7.7 Auto-matched Trade Cancelled (Executed Trade Cancelled)

The OCG-C sends this execution report when an auto-matched trade is cancelled by the exchange.

FIX Tag	Field Name	Required?	Description
Message Header			
35	MsgType	Y	8 = Execution Report
Message Body			
11	ClOrdID	N	Client specified identifier of the order.
37	OrderID	Y	Order ID as assigned by the exchange.
17	ExecID	Y	Unique Execution ID assigned for each Execution Report generated.
19	ExecRefID	Y	Execution Reference identifier used with Trade Cancel; refers to the Exec ID of the original trade.
Component Block <Parties>			
453	NoPartyIDs	Y	Number of party identifiers. The value in this field can be 1 or 2.
→ 448	PartyID	Y	ID of the Broker client submitting the order: Broker ID/BS User ID.
→ 447	PartyIdSource	Y	Defines the naming convention used in specifying the PartyID (448): ▪ D = Proprietary/Custom Code
→ 452	PartyRole	Y	Role of the specified PartyID (448): ▪ 1 = Executing Firm (Broker ID that submitted the order) ▪ 75 = Location ID (BS User ID)
End Component Block			
Component Block <Instrument>			
48	SecurityID	Y	Instrument identifier
22	SecurityIDSource	Y	Identifies the source of the SecurityID (48): ▪ 8 = Exchange Symbol Required if: SecurityID (48) is specified
207	SecurityExchange	N	The market which is used to identify the security: ▪ XHKG Required if: SecurityIDSource (22) = 8 (Exchange Symbol).
End Component Block			

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40	OrdType	N	Order type applicable to the order: ▪ 1 = Market ▪ 2 = Limit
59	TimeInForce	N	Time qualifier of the order: ▪ 0 = Day (Default) ▪ 3 = Immediate or Cancel = IOC ▪ 4 = Fill or Kill = FOK ▪ 9 = At Crossing. Applicable for orders in Auction session. Absence of this field is interpreted as 0 = Day.
54	Side	Y	Side of the order ▪ 1 = Buy ▪ 2 = Sell ▪ 5 = Sell Short
38	OrderQty	N	Total order quantity of the order
44	Price	N	Price of order. Required if: OrdType (40) = 2 (Limit).
60	TransactTime	Y	The time at which the particular message was generated.
528	OrderCapacity	N	Designates the capacity of the firm placing the order: ▪ A = Agency ▪ P = Principal
529	OrderRestrictions	N	Restrictions associated with this order: ▪ 2 = Index Arbitrage ▪ 5 = Acting as Market Maker or Specialist in Security ▪ 6 = Acting as Market Maker or Specialist in underlying of a derivative security The above 3 values are applicable only if Side (54) = 5 (Sell Short)
1090	MaxPriceLevels	N	Maximum number of price levels to trade through. Applicable if: OrdType (40) = 2 (Limit). If present, this should be set as 1.
77	PositionEffect	N	Indicates whether the resulting position after a trade should be an opening position or closing position: ▪ C = Close Applicable only if: Side (54) = 1 (Buy) to indicate covering a short sell.
39	OrdStatus	Y	Order Status after applying the transaction that is being communicated: ▪ 0 = New ▪ 1 = Partially Filled ▪ 2 = Filled ▪ 4 = Cancelled ▪ C = Expired

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150	ExecType	Y	Execution Type that indicates the reason for the generation of the Execution Report: ▪ H = Trade Cancel
31	LastPx	N	Execution Price Will be set to 0
32	LastQty	N	Execution Size Will be set to 0
14	CumQty	Y	Cumulative execution size
151	LeavesQty	Y	Open order quantity
1115	OrderCategory	N	Defines the type of interest behind a trade ▪ A = Internal Cross Order Absence of this field means the trade is not concluded within the same firm
58	Text	N	Free Text
1093	LotType	N	Lot Type of the order: ▪ 2 = Round Lot Absence of this field indicates a Round (i.e., Board) Lot order.
378	ExecRestatementReason	N	Code to identify the reason for an Execution Report message with Exec Type= H (Trade Cancel): ▪ 8 = Market (exchange) option
797	CopyMsgIndicator	Y	Indicates whether or not this message is a drop copy of another message. Always set to Y.
Message Trailer			

7.7.8 Trade (Odd lot/Special lot Order Executed)

The OCG-C sends this execution report for an Odd lot/Special lot order when it is filled.

FIX Tag	Field Name	Required?	Description
Message Header			
35	MsgType	Y	8 = Execution Report
Message Body			
11	ClOrdID	Y	Client specified identifier of the order.
37	OrderID	Y	Order ID as assigned by the exchange.
17	ExecID	Y	Unique Execution ID assigned for each Execution Report generated.
880	TrdMatchID	N	Identifier assigned to a trade by the matching system
Component Block <Parties>			
453	NoPartyIDs	Y	Number of party identifiers. The value in this field can be 1 or 2 or 3.
→ 448	PartyID	Y	ID of the Broker client submitting the order: Broker ID/Counterparty Broker ID/BS User ID.

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→	447	PartyIdSource	Y	Defines the naming convention used in specifying the PartyID (448): ▪ D = Proprietary/Custom Code
→	452	PartyRole	Y	Role of the specified PartyID (448): ▪ 1 = Executing Firm (Broker ID that is receiving this trade) ▪ 17 = Contra Firm (Counterparty Broker ID for this trade). This is provided only if applicable. ▪ 75 = Location ID (BS User ID)
End Component Block				
Component Block <Instrument>				
	48	SecurityID	Y	Instrument identifier
	22	SecurityIDSource	Y	Identifies the source of the SecurityID (48): ▪ 8 = Exchange Symbol Required if: SecurityID (48) is specified
	207	SecurityExchange	N	The market which is used to identify the security: ▪ XHKG Required if: SecurityIDSource (22) = 8 (Exchange Symbol).
End Component Block				
	40	OrdType	N	Order type applicable to the order: ▪ 2 = Limit
	59	TimeInForce	N	Time qualifier of the order: ▪ 0 = Day (Default) Absence of this field is interpreted as 0 = Day.
	54	Side	Y	Side of the order ▪ 1 = Buy ▪ 2 = Sell ▪ 5 = Sell Short
	38	OrderQty	N	Total order quantity of the order
	44	Price	N	Price of order. Required if: OrdType (40) = 2 = Limit.
	60	TransactTime	Y	The time at which the particular message was generated.
	528	OrderCapacity	N	Designates the capacity of the firm placing the order: ▪ A = Agency ▪ P = Principal
	77	PositionEffect	N	Indicates whether the resulting position after a trade should be an opening position or closing position: ▪ C = Close Applicable only if: Side (54) = 1 (Buy) to indicate covering a short sell.

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39	OrdStatus	Y	Order Status after applying the transaction that is being communicated: ▪ 2 = Filled
150	ExecType	Y	Execution Type that indicates the reason for the generation of the Execution Report: ▪ F = Trade
31	LastPx	Y	Execution Price
32	LastQty	Y	Execution Size
14	CumQty	Y	Cumulative execution size
151	LeavesQty	Y	Open order quantity
1115	OrderCategory	N	Defines the type of interest behind a trade ▪ A = Internal Cross Order Absence of this field means the trade is not concluded within the same firm
58	Text	N	Free Text
1093	LotType	N	Lot Type of the order: ▪ 1 = Odd Lot
5681	ExchangeTradeType	N	Exchange assigned Trade Type: ▪ E = Special Lot – Semi-Automatic ▪ O = Odd Lot – Semi-Automatic
797	CopyMsgIndicator	Y	Indicates whether or not this message is a drop copy of another message. Always set to Y.
Message Trailer			

7.7.9 Trade (Semi-auto-matched) Cancelled

The OCG-C sends this execution report when a semi-auto-matched trade is cancelled by the exchange.

Note that this trade cancellation message is sent to the drop copy client if the Side (54) refers to an Odd lot/Special lot order submitted by a broker through a OCG-C session.

FIX Tag	Field Name	Required?	Description
Message Header			
35	MsgType	Y	8 = Execution Report
Message Body			
11	ClOrdID	Y	Client specified identifier of the order.
37	OrderID	Y	Order ID as assigned by the exchange.
17	ExecID	Y	Unique Execution ID assigned for each Execution Report generated.
19	ExecRefID	Y	Execution Reference identifier used with Trade Cancel; refers to the Exec ID of the original trade.
Component Block <Parties>			
453	NoPartyIDs	Y	Number of party identifiers. The value in this field can be 1 or 2.

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→	448	PartyID	Y	ID of the Broker client submitting the order: Broker ID/BS User ID.
→	447	PartyIdSource	Y	Defines the naming convention used in specifying the PartyID (448): ▪ D = Proprietary/Custom Code
→	452	PartyRole	Y	Role of the specified PartyID (448): ▪ 1 = Executing Firm (Broker ID that is receiving this cancel) ▪ 75 = Location ID (BS User ID)
End Component Block				
Component Block <Instrument>				
	48	SecurityID	Y	Instrument identifier
	22	SecurityIDSource	Y	Identifies the source of the SecurityID (48): ▪ 8 = Exchange Symbol Required if: SecurityID (48) is specified
	207	SecurityExchange	N	The market which is used to identify the security: ▪ XHKG Required if: SecurityIDSource (22) = 8 (Exchange Symbol).
End Component Block				
	40	OrdType	N	Order type applicable to the order: ▪ 2 = Limit
	59	TimeInForce	N	Time qualifier of the order: ▪ 0 = Day (Default) Absence of this field is interpreted as 0 = Day.
	54	Side	Y	Side of the order ▪ 1 = Buy ▪ 2 = Sell ▪ 5 = Sell Short
	38	OrderQty	N	Total order quantity of the order
	44	Price	N	Price of order. Required if: OrdType (40) = 2 = Limit.
	60	TransactTime	Y	The time at which the particular message was generated.
	528	OrderCapacity	N	Designates the capacity of the firm placing the order: ▪ A = Agency ▪ P = Principal
	77	PositionEffect	N	Indicates whether the resulting position after a trade should be an opening position or closing position: ▪ C = Close Applicable only if: Side (54) = 1 (Buy) to indicate covering a short sell.

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39	OrdStatus	Y	Order Status after applying the transaction that is being communicated: ▪ 0 = New ▪ 1 = Partially Filled ▪ 2 = Filled ▪ 4 = Cancelled ▪ C = Expired
150	ExecType	Y	Execution Type that indicates the reason for the generation of the Execution Report: ▪ H = Trade Cancel
31	LastPx	N	Execution Price Will be set to 0
32	LastQty	N	Execution Size Will be set to 0
14	CumQty	Y	Cumulative execution size
151	LeavesQty	Y	Open order quantity
1115	OrderCategory	N	Defines the type of interest behind a trade ▪ A = Internal Cross Order Absence of this field means the trade is not concluded within the same firm
1093	LotType	N	Lot Type of the order: ▪ 1 = Odd Lot
58	Text	N	Free Text
378	ExecRestatementReason	N	Code to identify the reason for an Execution Report message with Exec Type= H (Trade Cancel): ▪ 8 = Market (exchange) option
797	CopyMsgIndicator	Y	Indicates whether or not this message is a drop copy of another message. Always set to Y.
Message Trailer			

7.8 Business Messages – Off Exchange Trade Reporting (AE)

The OCG-C uses these messages for off-exchange trades reported.

7.8.1 Trade Accepted

FIX Tag	Field Name	Required?	Description
Message Header			
35	MsgType	Y	AE = Trade Capture Report
Message Body			
571	TradeReportID	N	Unique Identification for the Trade Capture Report assigned by the reporting side of the Trade (to be returned to the reporting broker)
1003	TradeID	Y	Unique identifier as assigned to the trade by the exchange.

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487	TradeReportTransType	Y	Identifies the trade report message transaction type: ▪ 0 = New (for the non-reporting side) ▪ 2 = Replace (for the reporting side)
856	TradeReportType	Y	Type of the Trade Report: ▪ 0 = Submit
1123	TradeHandlingInstr	N	Indicates how the trade capture report should be handled by the receiver: ▪ 0 = Trade Confirm
828	TrdType	Y	Type of the trade being reported: ▪ 4 = Late Trade ▪ 22 = Privately Negotiated Trade ▪ 102 = Odd Lot Trade ▪ 104 = Overseas Trade
150	ExecType	N	Execution type: ▪ F = Trade
939	TrdRptStatus	N	Trade Report Status: ▪ 0 = Accepted
31	LastPx	Y	Execution Price
32	LastQty	Y	Execution Size
60	TransactTime	Y	The time at which the particular message was generated.
Component Block <TrdCapRptSideGrp>			
552	NoSides	Y	Number of sides: ▪ 1 = Overseas ▪ 2 = Default
→ 54	Side	Y	Side of the trade ▪ 1 = Buy ▪ 2 = Sell ▪ 5 = Sell Short
→ Component Block <Parties>			
→ 453	NoPartyIDs	Y	Number of party identifiers. The value in this field should be 1 or 2 or 3.
→ → 448	PartyID	Y	Broker ID/Counterparty Broker ID/BS User ID.
→ → 447	PartyIdSource	Y	Defines the naming convention used in specifying the PartyID (448): ▪ D = Proprietary/Custom Code

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→	→	452	PartyRole	Y	Role of the specified PartyID (448): ▪ 1 = Executing Firm (Broker ID that is receiving this trade) ▪ 17 = Contra Firm (Counterparty Broker ID) ▪ 75 = Location ID (BS User ID) For any TrdType, there will be one Broker ID with PartyRole = 1. Counterparty Broker ID (PartyRole=17) is not applicable if: TradeHandlingInstr (1123) is 1 (Two party report) and OrderCategory (1115) is A OR TradeHandlingInstr (1123) is 6 (One party report) Location ID (PartyRole = 75) is with relation to the Broker ID that reported this trade.
→	End Component Block				
→	Component Block <ClrInstGrp>				
→	576	NoClearingInstructions		N	Number of clearing instructions. Always set to 1.
→	→	577	ClearingInstruction	N	Eligibility of this trade for clearing and central counterparty processing: ▪ 0 = Process normally ▪ 1 = Exclude from all netting ▪ 14 = Buy-In
→	End Component Block				
→	Component Block <TradeReportOrderDetail>				
→	528	OrderCapacity		N	Designates the capacity of the firm: ▪ A = Agency ▪ P = Principal
→	End Component Block				
→	77	PositionEffect		N	Indicates whether the resulting position after a trade should be an opening position or closing position: ▪ C = Close Applicable only if: ▪ Side (54) = 1 (Buy) to indicate covering a short sell.
→	58	Text		N	Free Text
→	1115	OrderCategory		N	Defines the type of interest behind a trade ▪ A = Internal Cross Order Absence of this field means the trade is not concluded within the same firm
End Component Block					
Component Block <Instrument>					
48	SecurityID			Y	Instrument identifier

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22	SecurityIDSource	Y	Identifies the source of the SecurityID (48): ▪ 8 = Exchange Symbol Required if: SecurityID (48) is specified
207	SecurityExchange	N	The market which is used to identify the security: ▪ XHKG Required if: SecurityIDSource (22) = 8 (Exchange Symbol).
End Component Block			
5681	ExchangeTradeType	N	Exchange assigned Trade Type: ▪ M = Manual Trade ▪ S = Manual – Non Standard Price Trade ▪ Q = Special Lot Trade ▪ P = Odd Lot Trade ▪ R = Previous Day's Trade ▪ V = Overseas Trade
797	CopyMsgIndicator	Y	Indicates whether or not this message is a drop copy of another message. Always set to Y.
Message Trailer			

7.8.2 Trade Cancelled

FIX Tag	Field Name	Required?	Description
Message Header			
35	MsgType	Y	AE = Trade Capture Report
Message Body			
571	TradeReportID	N	Unique Identification for the Trade Capture Report assigned by the reporting side of the Trade (to be returned to the reporting broker)
1003	TradeID	Y	Unique identifier as assigned to the trade by the exchange.
487	TradeReportTransType	Y	Identifies the trade report message transaction type: ▪ 0 = New (for the party opposite to that requesting this cancel) ▪ 2 = Replace (for the party requesting this cancel) ▪ 5 = Cancel due to back out of trade (for both buyer and seller if ExecType = L)
856	TradeReportType	Y	Type of the Trade Report: ▪ 6 = Trade Report Cancel
1123	TradeHandlingInstr	N	Indicates how the trade capture report should be handled by the receiver: ▪ 0 = Trade Confirm

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150		ExecType	N	Execution Type that indicates the reason for the generation of this confirmation: ▪ H = Trade Cancel (by the counter-party) ▪ L = Triggered or activated by System (cancelled by the exchange)
31		LastPx	Y	Execution Price
32		LastQty	Y	Execution Size
60		TransactTime	Y	The time at which the particular message was generated.
Component Block <TrdCapRptSideGrp>				
552		NoSides	Y	Number of sides: ▪ 1
→	54	Side	Y	Side of the trade ▪ 1 = Buy ▪ 2 = Sell ▪ 5 = Sell Short
→	Component Block <Parties>			
→	453	NoPartyIDs	Y	Number of party identifiers. The value in this field should be 1 or 2.
→ →	448	PartyID	Y	Broker ID for this side of the trade/BS User ID.
→ →	447	PartyIdSource	Y	Defines the naming convention used in specifying the PartyID (448): ▪ D = Proprietary/Custom Code
→ →	452	PartyRole	Y	Role of the specified PartyID (448): ▪ 1 = Executing Firm (Broker ID that is receiving this trade message) ▪ 75 = Location ID (BS User ID)
→	End Component Block			
End Component Block				
Component Block <Instrument>				
48		SecurityID	Y	Instrument identifier
22		SecurityIDSource	Y	Identifies the source of the SecurityID (48): ▪ 8 = Exchange Symbol Required if: SecurityID (48) is specified
207		SecurityExchange	N	The market which is used to identify the security: ▪ XHKG Required if: SecurityIDSource (22) = 8 (Exchange Symbol).
End Component Block				
797		CopyMsgIndicator	Y	Indicates whether or not this message is a drop copy of another message. Always set to Y.
Message Trailer				

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7.9 Business Messages – Semi-Auto Matched Trade

The OCG-C uses these messages for the odd-lot/special lot trades concluded through semi-automatic trading.

7.9.1 Trade Accepted

The OCG-C sends this message to the drop copy client if:

- The Side (54) in this trade message refers to the submitter of the trade,
- The Side (54) in this trade message refers to the resting order, but this order was submitted by a broker ID belonging to a non-OCG-C session.

FIX Tag	Field Name	Required?	Description
Message Header			
35	MsgType	Y	AE = Trade Capture Report
Message Body			
571	TradeReportID	N	Unique Identification for the Trade Capture Report assigned by the reporting side of the Trade (to be returned to the reporting broker)
1003	TradeID	Y	Unique identifier as assigned to the trade by the exchange.
487	TradeReportTransType	Y	Identifies the trade report message transaction type: ▪ 0 = New (for the resting order side) ▪ 2 = Replace (for the trade reporting side)
856	TradeReportType	Y	Type of the Trade Report: ▪ 0 = Submit
828	TrdType	Y	Type of the trade being reported: ▪ 102 = Odd Lot Trade
150	ExecType	N	Execution type: ▪ F = Trade
939	TrdRptStatus	N	Trade Report Status: ▪ 0 = Accepted
31	LastPx	Y	Execution Price
32	LastQty	Y	Execution Size
60	TransactTime	Y	The time at which the particular message was generated.
Component Block <TrdCapRptSideGrp>			
552	NoSides	Y	Number of sides: ▪ 2 = Default
→ 54	Side	Y	Side of the trade ▪ 1 = Buy ▪ 2 = Sell ▪ 5 = Sell Short
→ Component Block <Parties>			

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→		453	NoPartyIDs	Y	Number of party identifiers. The value in this field should be 1 or 2 or 3.
→	→	448	PartyID	Y	Broker ID/Counterparty Broker ID/BS User ID.
→	→	447	PartyIdSource	Y	Defines the naming convention used in specifying the PartyID (448): ▪ D = Proprietary/Custom Code
→	→	452	PartyRole	Y	Role of the specified PartyID (448): ▪ 1 = Executing Firm (Broker ID that is receiving this trade) ▪ 17 = Contra Firm (Counterparty Broker ID) ▪ 75 = Location ID (BS User ID) There will be one Broker ID with PartyRole = 1. Location ID (PartyRole = 75) is with relation to the Broker ID associated with the side.
→	End Component Block				
→	Component Block <TradeReportOrderDetail>				
→		37	OrderID	N	Order ID associated with the order. Applicable only if the Side refers to the resting order.
→		11	ClOrdID	N	Client specified identifier of the order. Applicable only if the Side refers to the resting order.
→		528	OrderCapacity	N	Designates the capacity of the firm: ▪ A = Agency ▪ P = Principal
→	End Component Block				
→		77	PositionEffect	N	Indicates whether the resulting position after a trade should be an opening position or closing position: ▪ C = Close Applicable only if: ▪ Side (54) = 1 (Buy) to indicate covering a short sell.
→		58	Text	N	Free Text
→		1115	OrderCategory	N	Defines the type of interest behind a trade ▪ A = Internal Cross Order Absence of this field means the trade is not concluded within the same firm
End Component Block					
Component Block <Instrument>					
		48	SecurityID	Y	Instrument identifier
		22	SecurityIDSource	Y	Identifies the source of the SecurityID (48): ▪ 8 = Exchange Symbol Required if: SecurityID (48) is specified

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207	SecurityExchange	N	The market which is used to identify the security: ▪ XHKG Required if: SecurityIDSource (22) = 8 (Exchange Symbol).
End Component Block			
5681	ExchangeTradeType	N	Exchange assigned Trade Type: ▪ E = Special Lot – Semi-Automatic ▪ O = Odd Lot – Semi-Automatic
797	CopyMsgIndicator	Y	Indicates whether or not this message is a drop copy of another message. Always set to Y.
Message Trailer			

7.9.2 Trade Cancelled

The OCG-C sends this message to the drop copy client if:

- The Side (54) in this message refers to the submitter of the trade,
- The Side (54) in this message refers to the resting order, but this order was submitted by a broker ID belonging to a non-OCG-C session.

FIX Tag	Field Name	Required?	Description
Message Header			
35	MsgType	Y	AE = Trade Capture Report
Message Body			
1003	TradeID	Y	Unique identifier as assigned to the trade by the exchange.
487	TradeReportTransType	Y	Identifies the trade report message transaction type: ▪ 5 = Cancel due to back out of trade (for both buyer and seller if ExecType = L)
856	TradeReportType	Y	Type of the Trade Report: ▪ 6 = Trade Report Cancel
150	ExecType	N	Execution Type that indicates the reason for the generation of this confirmation: ▪ L = Triggered or activated by System (cancelled by the exchange)
31	LastPx	Y	Execution Price
32	LastQty	Y	Execution Size
60	TransactTime	Y	The time at which the particular message was generated.
Component Block <TrdCapRptSideGrp>			

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		552	NoSides	Y	Number of sides: ▪ 1
→		54	Side	Y	Side of the trade ▪ 1 = Buy ▪ 2 = Sell ▪ 5 = Sell Short
→	Component Block <Parties>				
→		453	NoPartyIDs	Y	Number of party identifiers. The value in this field should be 1 or 2.
→	→	448	PartyID	Y	Broker ID for this side of the trade/BS User ID.
→	→	447	PartyIdSource	Y	Defines the naming convention used in specifying the PartyID (448): ▪ D = Proprietary/Custom Code
→	→	452	PartyRole	Y	Role of the specified PartyID (448): ▪ 1 = Executing Firm (Broker ID that is receiving this trade message) ▪ 75 = Location ID (BS User ID)
→	End Component Block				
End Component Block					
Component Block <Instrument>					
		48	SecurityID	Y	Instrument identifier
		22	SecurityIDSource	Y	Identifies the source of the SecurityID (48): ▪ 8 = Exchange Symbol Required if: SecurityID (48) is specified
		207	SecurityExchange	N	The market which is used to identify the security: ▪ XHKG Required if: SecurityIDSource (22) = 8 (Exchange Symbol).
End Component Block					
		797	CopyMsgIndicator	Y	Indicates whether or not this message is a drop copy of another message. Always set to Y.
Message Trailer					

7.10 Infrastructure

7.10.1 Business Message Reject (j)

This message can be initiated by the OCG-C.

FIX Tag	Field Name	Required?	Description
Message Header			
35	MsgType	Y	j= Business Message Reject

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Message Body			
45	RefSeqNum	N	Sequence number of the message which caused the rejection
372	RefMsgType	Y	Message type of the rejected message.
379	BusinessRejectRefID	N	The value of the business-level "ID" field on the message being referenced.
380	BusinessRejectReason	Y	Code specifying the reason for the rejection of the message: ▪ 0 = Other ▪ 3 = Unspecified Message Type ▪ 4 = Application not available
58	Text	N	Where possible, message to explain reason for rejection
Message Trailer			

8. Data Dictionary

8.1 Session Level

Tag	Field Name	Data Type	Description
7	BeginSeqNo	SeqNum	Sequence number of first message in range.
8	BeginString	String	Identifies beginning of new message and protocol version Valid values: FIXT.1.1
9	BodyLength	Length	Number of characters after this field up to and including the delimiter immediately preceding the CheckSum.
10	CheckSum	String	Three byte, simple checksum. Always the last field in message
16	EndSeqNo	SeqNum	Sequence number of last message in range
34	MsgSeqNum	SeqNum	Sequence number of the message.
35	MsgType	String	▪ 0 = Heartbeat ▪ 1 =Test Request ▪ 2 = Resend Request ▪ 3 = Reject ▪ 4 = Sequence Reset ▪ 5 = Logout ▪ 8 = Execution Report ▪ j = Business Message Reject ▪ A = Logon ▪ AE = Trade Capture Report
36	NewSeqNo	SeqNum	Sequence number of the next message to be transmitted.
43	PossDupFlag	Boolean	Whether the message was previously transmitted under the same MsgSeqNum (34). Absence of this field is interpreted as Original Transmission (N).
45	RefSeqNum	SeqNum	Sequence number of the rejected message.
49	SenderCompID	String	Comp ID of the party sending the message.
52	SendingTime	UTCTimestamp	Time the message was transmitted. Format: YYYYMMDD-HH:MM:SS.ssssss
56	TargetCompID	String	Comp ID of the party the message is sent to

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97	PossResend	Boolean	Whether the message was previously transmitted under a different MsgSeqNum (34). Absence of this field is interpreted as Original Transmission (N).
98	EncryptMethod	Int	Method of encryption
108	HeartBtInt	Int	Indicates the heartbeat interval in seconds.
112	TestReqID	String	Required if the heartbeat is a response to a Test Request. The value in this field should echo the TestReqID (112) received in the Test Request. Identifier for the request
122	OrigSendingTime	UTCTimestamp	Time the message was originally transmitted. If the original time is not available, this should be the same value as SendingTime (52). Required if PossDupFlag (43) is Possible Duplicate (Y). Format: YYYYMMDD-HH:MM:SS.ssssss
123	GapFillFlag	Boolean	Mode in which the message is being used. Absence of this field is interpreted as Sequence Reset (N).
371	RefTagID	Int	If a message is rejected due to an issue with a particular field its tag number will be indicated.
372	RefMsgType	String	Message type of the rejected message.

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373	SessionRejectReason	Int	Code specifying the reason for the reject: ▪ 0 = Invalid Tag Number ▪ 1 = Required Tag Missing ▪ 2 = Tag not defined for this message ▪ 3 = Undefined tag ▪ 4 = Tag specified without a value ▪ 5 = Value is incorrect (out of range) for this tag ▪ 6 = Incorrect data format for value ▪ 9 = CompID problem ▪ 10 = Sending Time Accuracy problem ▪ 11 = Invalid Msg Type ▪ 13 = Tag appears more than once ▪ 15 = Repeating group fields out of order ▪ 16 = Incorrect NumInGroup count for repeating group ▪ 18 = Invalid/Unsupported Application Version ▪ 99 = Other
379	BusinessRejectRefID	String	The value of the business-level "ID" field on the message being referenced.
380	BusinessRejectReason	Int	Code specifying the reason for the rejection of the business message ▪ 0 = Other ▪ 3= Unspecified Message Type ▪ 4= Application not available
464	TestMessageIndicator	Boolean	Used to specify that this FIX session will be sending and receiving "test" vs. "production" messages Only applicable for Logon (35=A) message from the OCG-C to the client
554	Password	String	Password assigned to the Comp ID. Required if the message is generated by the client.
789	NextExpectedMsgSeqNum	SeqNum	Next expected MsgSeqNum value to be received
925	NewPassword	String	New password for the Comp ID.
1128	ApplVerID	String	Version of FIX used in the message. Required if the message is generated by the OCG-C.
1137	DefaultApplVerID	String	Default version of FIX messages used in this session.

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1400	EncryptedPasswordMethod	Int	Enumeration defining the encryption method used to encrypt password fields: 101 = RSA
1402	EncryptedPassword	Data	Encrypted password – encrypted via the method specified in EncryptedPasswordMethod (1400). Padding scheme supported is PKCS #1 or OAEP.
1404	EncryptedNewPassword	Data	Encrypted new password – encrypted via the method specified in EncryptedPasswordMethod (1400). Padding scheme supported is PKCS #1 or OAEP.
1409	SessionStatus	Int	Status of the FIX session. Required if the message is generated by the server. ▪ 0 = Session active ▪ 1 = Session password changed ▪ 2 = Session password due to expire ▪ 3 = New session password does not comply with policy ▪ 4 = Session logout complete ▪ 5 = Invalid username or password ▪ 6 = Account locked ▪ 7 = Logons are not allowed at this time ▪ 8 = Password expired ▪ 100 = Password change is required ▪ 101 = Other

8.2 Business Level

Tag	Field Name	Data Type	Description
11	ClOrdID	String	Unique identifier of the order as assigned by the client
14	CumQty	Qty	Total quantity filled
17	ExecID	String	Unique Execution ID assigned by the system for each Execution Report generated
19	ExecRefID	String	Reference identifier used with Trade and Trade Cancel execution types
22	SecurityIDSource	String	Identifier of the source of the SecurityID (48) value.
31	LastPx	Price	Price of this fill. Execution price
32	LastQty	Qty	Quantity executed in this fill. Execution size

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37	OrderID	String	Unique identifier for Order as assigned by the server
38	OrderQty	Qty	Total order quantity.
39	OrdStatus	Char	Current status of the order: ▪ 0 = New ▪ 1 = Partially filled ▪ 2 = Filled ▪ 4 = Cancelled ▪ 8 = Rejected ▪ C = Expired
40	OrdType	Char	Type of the order: ▪ 1 = Market ▪ 2 = Limit
41	OrigClOrdID	String	ClOrdID (11) of the previous order (NOT the initial order of the day) as assigned by the client, used to identify the previous order in cancel and cancel/replace requests
44	Price	Price	Limit price of the order
48	SecurityID	String	Identifier of the instrument.
54	Side	Char	Side of the order: ▪ 1 = Buy ▪ 2 = Sell ▪ 5 = Sell short
58	Text	String	Free format text string
59	TimeInForce	Char	Specifies how long the order remains in effect: ▪ Absent = Day ▪ 0 =Day ▪ 3 = IOC ▪ 4 = FOK ▪ 9 = At Crossing
60	TransactTime	UTCTimestamp	Time qualifier of the order. Format: YYYYMMDD-HH:MM:SS.ssssss
77	PositionEffect	Char	Indicates whether the resulting position after a trade should be an opening position or closing position: ▪ C = Close
150	ExecType	Char	Describes the specific Execution report ▪ 0 = New ▪ C = Expired ▪ F = Trade ▪ H = Trade Cancel ▪ 4 = Cancelled ▪ 5 = Replaced ▪ L – Triggered or activated by system

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151	LeavesQty	Qty	Quantity open for further execution
207	SecurityExchange	Exchange	Market used to help identify a security. Valid values
378	ExecRestatementReason	Int	Code to identify reason for an Execution Report message sent when communicating an unsolicited cancel: ▪ 6 = Cancel on Trading Halt/VCM ▪ 8 = Market (Exchange) Option ▪ 100 = Unsolicited Cancel ▪ 101 = On Behalf Of Single Cancel ▪ 102 = On Behalf Of Mass Cancel ▪ 103 = Mass Cancelled by the Broker ▪ 104 = Cancel on Disconnect ▪ 105 = Cancel due to Broker suspension ▪ 106 = Cancel due to Exchange Participant suspension ▪ 107 = System Cancel
447	PartyIDSource	Char	Identifies class or source of the PartyID (448) value.
448	PartyID	String	Party identifier/code
452	Party Role	Int	Identifies the type or role of the PartyID (448) specified
453	NoPartyIDs	NumInGroup	Number of PartyID
487	TradeReportTransType	Int	Identifies Trade Report message transaction type: ▪ 0 = New ▪ 2 = Replace ▪ 5 = Cancel due to back out of trade.
528	OrderCapacity	Char	Designates the capacity of the firm placing the order: ▪ 1 = Agency ▪ 2 = Principal
529	OrderRestrictions	MultipleChar	Restrictions associated with an order: ▪ 2 = Index Arbitrage ▪ 5 = Acting As Market Maker Or Specialist In Security ▪ 6 = Acting As Market Maker Or Specialist In Underlying of a derivative security The above 3 values are applicable only if Side = 5 (Sell Short)
552	NoSides	NumINGroup	Number of Side repeating group instances
571	TradeReportID	String	Unique identifier of trade capture report

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574	MatchType	String	The point in the matching process at which this trade was matched: ▪ 4 = Auto Match ▪ 5 = Cross Auction
576	NoClearingInstructions	NumINGroup	Number of clearing instructions
577	ClearingInstruction	Int	Clearing Information: ▪ 0 = Process normally ▪ 1 = Exclude from all netting ▪ 14 = Buy In
797	CopyMsgIndicator	Boolean	Indicates whether or not the message is a drop copy of another message.
828	TrdType	Int	Type of the trade being reported: ▪ 4 = Late Trade ▪ 22 = Privately Negotiated Trade ▪ 102 = Odd Lot Trade ▪ 104 = Overseas Trade
856	TradeReportType	Int	Type of the Trade Report: ▪ 0 = New ▪ 6 = Trade Report Cancel
880	TrdMatchID	String	Identifier assigned to a trade by the matching system
939	TrdRptStatus	Int	Trade Report Status: ▪ 0 = Accepted ▪ 1 = Rejected Absence of this field indicates 0 = Accepted
1003	TradeID	String	The unique ID assigned to the trade entity once it is received or matched by the Exchange
1057	AggressorIndicator	Boolean	Used to identify whether the order initiator is an aggressor or not in the auto-matched trade during continuous trading session: ▪ Y = Order initiator is aggressor ▪ N = Order initiator is passive
1090	MaxPriceLevels	Int	Allows an order to specify a maximum number of price levels to trade through
1093	LotType	Char	Lot Type of the order: ▪ 1 = Odd Lot ▪ 2 = Round Lot Absence of this field indicates a Round (i.e., Board) Lot order.
1115	OrderCategory	Char	Defines the type of interest behind a trade: ▪ A = Internal Cross Order

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1123	TradeHandlingInstr	Char	Indicates how the trade capture report should be handled by the receiver: ▪ 0 = Trade Confirm ▪ 1 = Two Party Report ▪ 6 = One Party Report
1328	RejectText	String	Rejection text
5681	ExchangeTradeType	Char	Exchange assigned trade type for a reported trade: ▪ M = Manual Trade ▪ S = Manual Non Standard price ▪ Q = Special Lot ▪ P = Odd Lot ▪ R = Previous Day ▪ V = Overseas ▪ E = Special Lot – Semi-Auto ▪ O = Odd Lot – Semi-Auto

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Appendices

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A. Password Policy

- Length is 8 characters.
- Must comprise of a mix of alphabets (A-Z and a-z) and digits (0-9)
- Must be changed on first-time logon or first logon after reset from HKEX market operations.
- New password can't be one of the previous 5 passwords.
- Can't be changed more than once per day.
- Session will be locked after 3 consecutive invalid passwords
- Expires every 90 days.

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