Interface Specifications
HKEX China Connect Central Gateway Platform

FIX Trading Protocol

Version 1.4
2 Jun 2023

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1. Document Control

1.1 Change History

Version Number	Issue Date	Section Number	Status
1.0	1 December 2016	All	First Version
1.1	5 January 2018	Introduction of Broker-to-Client Assigned Number (BCAN) field in the New Order Single message. Section 6.3, Section 7.7.1.	Revised Version
1.2	15 February 2018	Update description for BCAN reserved values. Section 6.3, Section 7.7.1	Revised Version
1.3	18 April 2018	Add the following sections: Appendix B - Reference of Rejection Codes from Home Market Appendix C - Rejection Code for BCAN Validation	Revised Version
1.4	2 Jun 2023	Update from "OCG" to "OCG-C". Add BCAN reserved values for Mainland investors. Update Appendix B for the links. Update Appendix C for BCAN rejection code.	Revised Version

1.2 Abbreviations

Terms and abbreviations referred to in this document are tabulated as follows:

BCAN	Broker-to-Client Assigned Number
BSS	Broker Supplied System
CCASS	Central Clearing and Settlement System
CCCG	China Connect Central Gateway
CSC	China Stock Connect System
EP	HKEX Cash Trading Exchange Participant
FIX	Financial Information eXchange
OCG-C	Orion Central Gateway - the market access platform for HKEX Securities Trading
SPSA	Special Segregated Account
SSE	Shanghai Stock Exchange
SZSE	Shenzhen Stock Exchange

2.   Introduction

This document describes the FIX interface protocol of the HKEX China Connect Central Gateway ("CCCG"), the market access platform for the China Stock Connect trading service.

The CCCG provides a centralized, highly resilient, low latency, flexible and scalable platform for all Exchange Participants (EPs) to access HKEX China Stock Connect system ("CSC") for northbound trading of designated stocks listed in the home market in Mainland China.

The CCCG mostly follows the interface and event model used in Orion Central Gateway ("OCG-C"), the market access platform for Hong Kong cash market.

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.

3. Connectivity

3.1 Session

Exchange Participants connect their broker supplied systems ("BSS" or "Client") to the CCCG via subscription to one or more CCCG "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 CCCG. 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 CCCG through one or more sessions.

3.2 Comp ID

The client should use the Comp ID provided by HKEX for each session in order to connect to the CCCG. A single client may have multiple connections to the CCCG i.e., multiple FIX sessions, each with its own Comp ID.

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

Comp ID of the CCCG, as set for TargetCompID of the client initiated messages & SenderCompID of the CCCG initiated messages is "**HKEXCCCO**".

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

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) and then converted to an alphanumeric value by means

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

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 CCCG 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 CCCG 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 features that ensure 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 CCCG before attempting to follow the connection mechanism described in **Section 3.3**.

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 CCCG. 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 CCCG will validate this SenderCompID, password and IP address of the client.

Once the client is authenticated, the CCCG 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 CCCG will respond with a Logon message with SessionStatus (1409) set to 1 = Session Password Changed.

The client must wait for the Logon from the CCCG 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 CCCG 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 CCCG will terminate the session without sending a Logout or Reject:

- Invalid Comp ID or IP address

If during a logon of a client (i.e., a Comp ID), the CCCG receives a second connection attempt while a valid FIX session is already underway for that same Comp ID, the CCCG 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 which contains a sequence number that is less than what is expected and the PossDupFlag (43) is not set to Y = Yes, then the CCCG will send a Logout message and terminate the FIX connection. In this scenario the inbound sequence number will not be incremented.

If the CCCG 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 CCCG, the client is expected to wait for a time period of *10 seconds* prior to reconnecting to the CCCG.

4.2 Message Sequence Numbers

As outlined in the FIX protocol, the client and CCCG 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:

- 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 PossDupFlag 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 CCCG will terminate the session immediately without any further exchange of messages.

4.3   Heart Beat and Test Request

The client and the CCCG 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 CCCG 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 CCCG 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 CCCG 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 CCCG.

4.4   Terminating a FIX Session

Session termination can be initiated by either the CCCG 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 CCCG service is shut down. However, all open FIX connections will be terminated (a Logout message will be sent) by the CCCG when its service is shut down. Under exceptional circumstances the CCCG 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 CCCG detects a sequence gap, it should send a Resend Request.

4.5   Re-establishing a FIX Session

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 CCCG. Client initiated resets would be rejected by the CCCG.

Following scenarios exist:

4.6.1 During a Session

The CCCG 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 CCCG 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 CCCG. 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 CCCG

The system has been designed with fault tolerance and disaster recovery technology that should ensure that the CCCG 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 CCCG side, the client is expected to be able to continue the same session.

In case of a catastrophic scenario, the CCCG 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 CCCG, all previous messages will not be available for the client side.

The client and the CCCG 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).

4.8   Checksum Validation

The CCCG performs a checksum validation on all incoming messages into the input services. Incoming messages that fail the checksum validation will be rejected and the connection will be dropped by the CCCG 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.

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 CCCG expects the client to skip Sequence Reset messages when replying to a Resend Request at all times.

- When resending messages, the CCCG would use either PossDupFlag (43) or PossResend (97) to indicate whether the messages were retransmitted earlier.

  If PossDupFlag is set to 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 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

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 a gap detection from either party (lower than the next to be assigned sequence) recover all messages[1] 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. However, in the unlikely event of a failure & recovery of CCCG if the client chooses not to retransmit certain application messages upon detecting a gap while CCCG has lost the state of the original responses for those messages, the client may not receive any responses from CCCG for those application messages, which the client skipped from retransmitting during the recovery.

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[1].

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

5.4 Possible Duplicates

The CCCG handles possible duplicates according to the FIX protocol. The client and the CCCG 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 CCCG does not handle possible resends for the client-initiated messages (e.g., New Order, Cancel, etc.) and the message will be processed without considering the value in the PossResend (97) field. Any message with duplicate ClOrdID (11) will be rejected based on the Client Order ID uniqueness check and messages which conform to the uniqueness check will be processed as normal messages.

5.5.2 CCCG Initiated Messages

The CCCG 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

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[1] *During the period where the CCCG is resending messages to the client, the CCCG does not allow another Resend Request from the client. If a new Resend Request is received during this time, the CCCG will terminate the session immediately without sending the Logout message.*

3. Heartbeat

4. Test Request

5. Resent Request

6. Sequence Reset

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

5.7 Transmission of Missed Messages

The Execution Report, Business Message Reject and Reject messages generated during a period when a client is disconnected from the CCCG will be sent to the client when it next reconnects. In the unlikely event the disconnection was due to an outage of the CCCG, Business Message Reject and Reject messages may not be retransmitted and the messages which will be retransmitted will include a PossResend (97) set to Y = Yes.

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 either the following two 2 ISO MICs:

- *XSSC* = ISO Market Segment Code for Stocks listed in Shanghai Stock Exchange under Shanghai – Hong Kong Stock Connect

- *XSEC* = ISO Market Segment Code for Stocks listed in Shenzhen Stock Exchange under Shenzhen – Hong Kong Stock Connect

Security ID (48) will carry the Security Code of an instrument as assigned by the home market. It is possible that different Exchanges may have same Security Code which should be distinguished by respective ISO MIC.

Security ID (48) with leading zeroes will not be accepted.

6.3 Party Identification

Party Identification is defined as follows:

ID	Description	FIX Tag and Value
Broker ID [1]	Identifier of the member the interest is submitted under	PartyID (448) PartyRole (452)=1 PartyIDSource (447)=D
Contra Broker ID	Identifier of the Contra member the interest is submitted under	PartyID (448) PartyRole (452)=17 PartyIDSource (447)=D
BS User ID [2]	The location ID of the member as referred to by Broker ID	PartyID (448) PartyRole (452)=75 PartyIDSource (447)=D
SPSA Investor ID [3]	Investor ID as assigned by CCASS for the Special Segregated Account (SPSA)	PartyID (448) PartyRole (452)=5 PartyIDSource (447)=D
Broker-to-Client Assigned Number (BCAN)[4]	Identifier for the client assigned by CCEP/TTEP for Northbound order submission.	PartyID (448) PartyRole (452)= 3 PartyIDSource (447)=P

Notes:

1. *Any Broker ID with leading zeroes will be rejected*

2. *BS User ID if specified would be restricted to numeric digits only with possible range of values being 1 to 99,999,999; a value with leading zeroes will be rejected.*

3. *This is the SPSA Investor ID assigned by CCASS; a value with leading zeroes will be rejected.*

4. *The valid range of BCAN for assignment to broker's specific individual or institutional clients is 100 to 9,999,999,999 while 0 to 99 are reserved by HKEX for specific BCAN type; a value with leading zeros will be rejected. It should be noted that the BCAN would not be echoed back in any of the Execution Report messages.*

6.4 Text Field

The Text (58) field sent in any business message from a client will be used as Broker Comment/Broker Reference field, and may not contain more than 10 characters; if the Text

field contains more than this permitted number of characters, the additional characters will be truncated.

Additionally, this text field is expected to contain only printable characters excluding any punctuation mark.

6.5 Order Handling

6.5.1 Order Types

The client may submit the following order types:

Order Type	Description	FIX Tag and Value
Limit	An order that will execute at or better than the specified price. The remainder, if any, is added to the order book or expired in terms of its TimeInForce (59)	OrderType (40) =2 MaxPriceLevels (1090)=1

6.5.2 Validity Types

The client may submit the following validity types:

Validity Type	Description	FIX Tag and Value
Day	An order that will expire at the end of the day.	TimeInForce (59) = 0 (Default)

6.5.3 Order, Trade and Execution Identifiers

6.5.3.1 Client Order ID

The client must ensure each ClOrdID (11) to be unique per Submitting Broker ID as an identifier of the order. The client should comply with the FIX protocol and ensure uniqueness of Client Order IDs across all messages (e.g., New Order, Cancel Request, etc.) across trading days sent under a particular Submitting Broker ID. For the time being (and until further notice) the uniqueness is required to be within a trading day and the contents of Client Order ID would be restricted to numeric digits only with possible range of values being 1 to 99,999,999.

Client order IDs with leading zeroes will be rejected by CCCG.

6.5.3.2 Order ID

The CCCG will use the OrderID (37) field of the Execution Report (35=8) to keep track of orders with the trading system.

In terms of the FIX protocol, unlike ClOrdID which requires a chaining through cancel/replace requests and cancel requests, the OrderID of an order will remain constant throughout its life.

OrderID can be optionally specified when submitting a Cancel Request.

6.5.3.3 Trade ID

The CCCG will use the TrdMatchID (880) field to identify a trade for usage, if any (subject to applicable rules), when the trade is to be (or once the trade has been) communicated to the client.

6.5.3.4 Execution ID

The CCCG will use the ExecID (17) field to affix a unique identifier for each Execution Report.

ExecID value will be unique per trading day.

6.5.4 Order Submission

Single sided orders can be submitted into the CCCG using the New Order (35=D) and the updates to the order submitted will be published in the form of Execution Reports (35=8).

The client must specify the ClOrdID (11) when submitting a New Order message.

The CCCG will respond with an Execution Report (35=8) to confirm the receipt of the request with ExecType (150) = Pending New (150=A) or to indicate the rejection with ExecType (150) = Rejected (150=8).

On acceptance of such a New Order request, CCCG will subsequently send another Execution Report (35=8) either (a) to confirm the actual acceptance of the order by the home market, with ExecType (150) = New (150=0) or (b) rejection of the order by the home market, with ExecType (150) = Rejected (150=8).

It should be noted that even if the CCCG has returned an Execution Report (35=8) with ExecType = Pending New (150=A), the subsequent but actual processing is left to the home market's governing rules and trading time table.

6.5.4.1 Message Flow – New Order
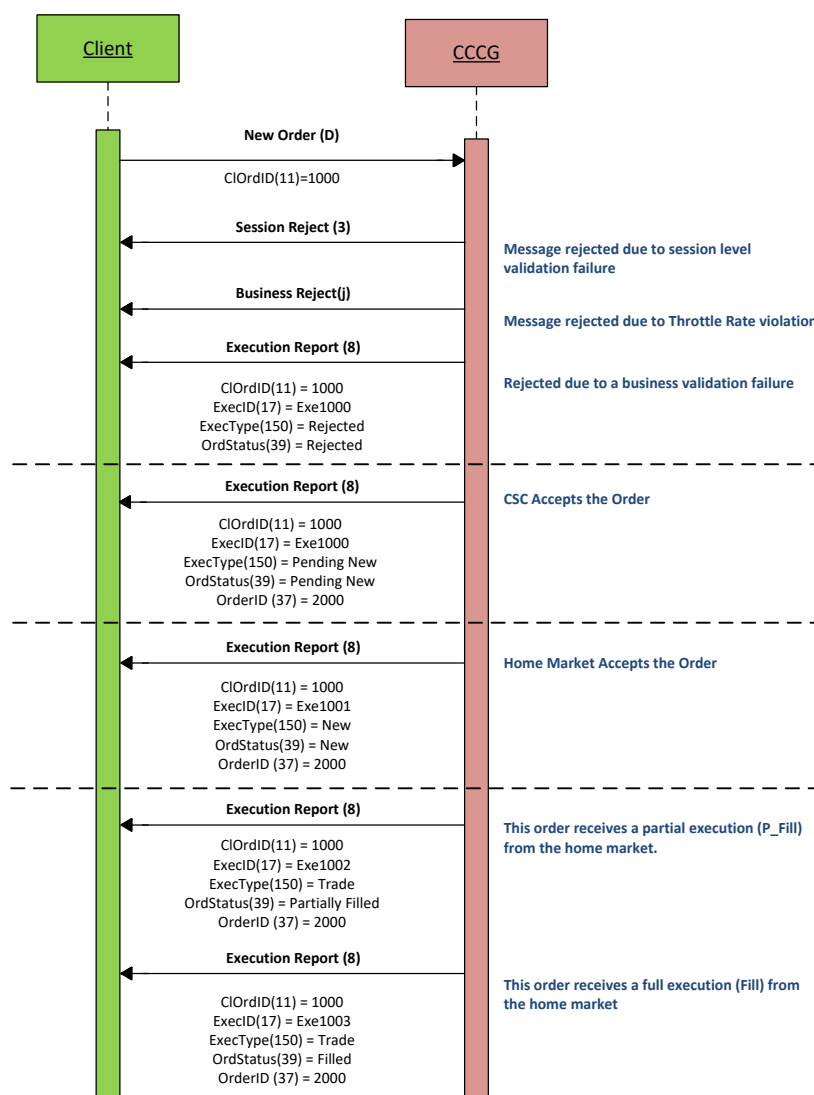
6.5.4.2 Message Flow – New Order – Rejected by Home Market
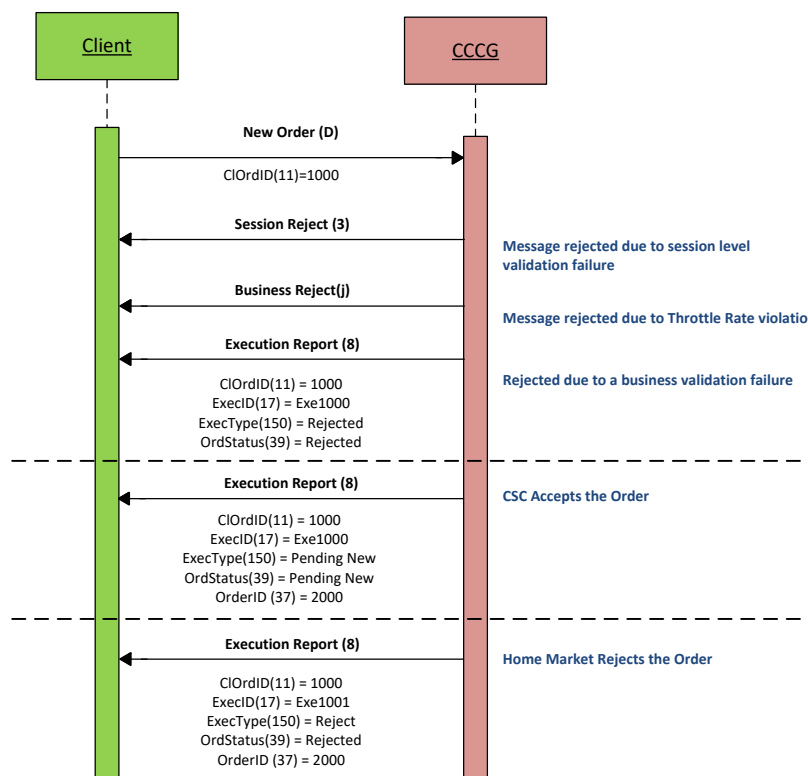
6.5.5 Cancellations

The remainder of an open order may be cancelled via the Cancel Request (35=F) message. The CCCG will respond with either:

a) an Execution Report (35=8) to confirm the receipt of the request with ExecType (150) = Pending Cancel (150=6) or

b) a Cancel Reject (35=9) message to indicate a rejection of the request.

On acceptance of a Cancel Request, CCCG will subsequently send either:

a) another Execution Report (35=8) with ExecType (150) = Cancelled (150=4) to confirm the actual cancellation by the home market or

b) a Cancel Reject (35=9) message for a rejection by the home market.

The client should identify the order being cancelled by its OrigClOrdID (41). The client can specify the OrderID (37) in the Cancel Request message but it is not a mandatory requirement. If the OrderID (37) is specified in the Cancel Request message, the system will validate the specified OrderID with the actual OrderID assigned to the particular order by the system (order is identified by the OrigClOrdID). The Cancel Request will be rejected if the specified OrderID is invalid based on this validation.

The client may not cancel an order that is fully filled or cancelled or expired.

If the client sends a cancel request for an order for which a cancellation is already being processed the incoming cancel request will be rejected.

It should be noted that even if the CCCG has returned an Execution Report (35=8) with ExecType (150) = Pending Cancel (150=6), the subsequent but actual cancellation processing is left to the home market's governing rules and trading time table.

6.5.5.1 Message Flow – Cancel Request

General Message Flow:

6.5.5.2 Message Flow – Cancel Request

Cancel Request is rejected by the home market:
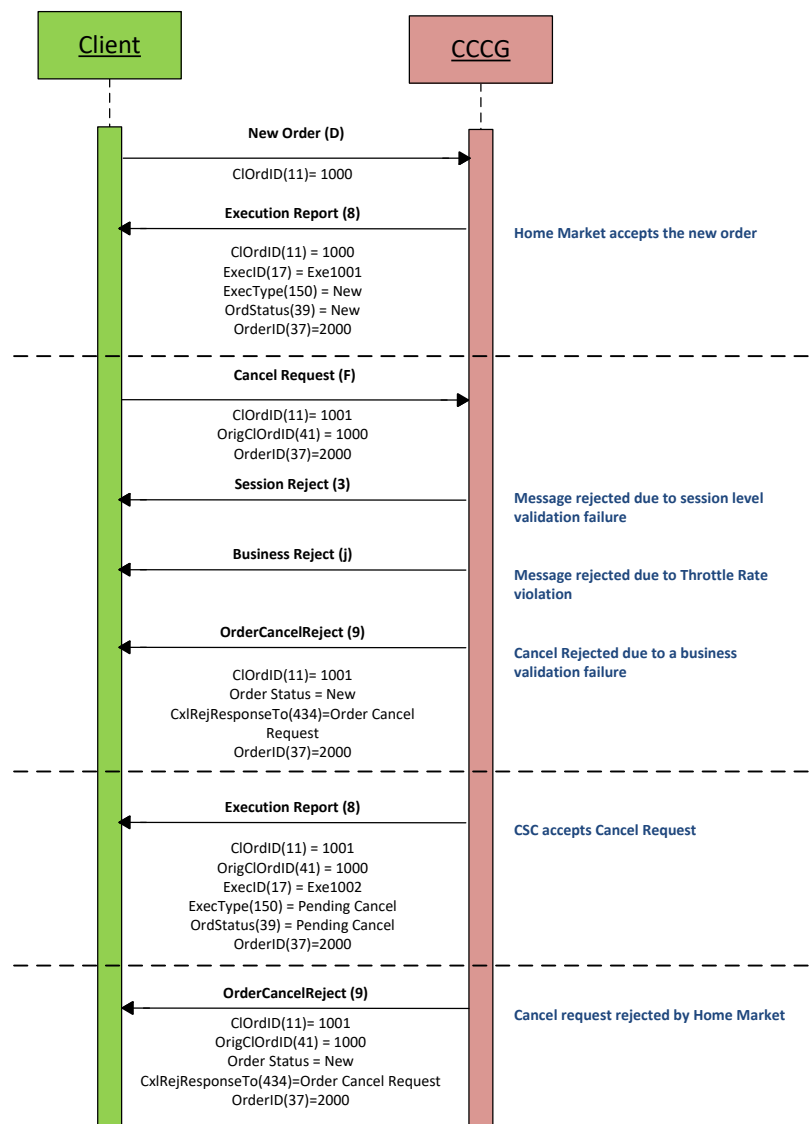
6.5.5.3 Message Flow – Cancel Request

Cancel Request is submitted before home market accepts the order:
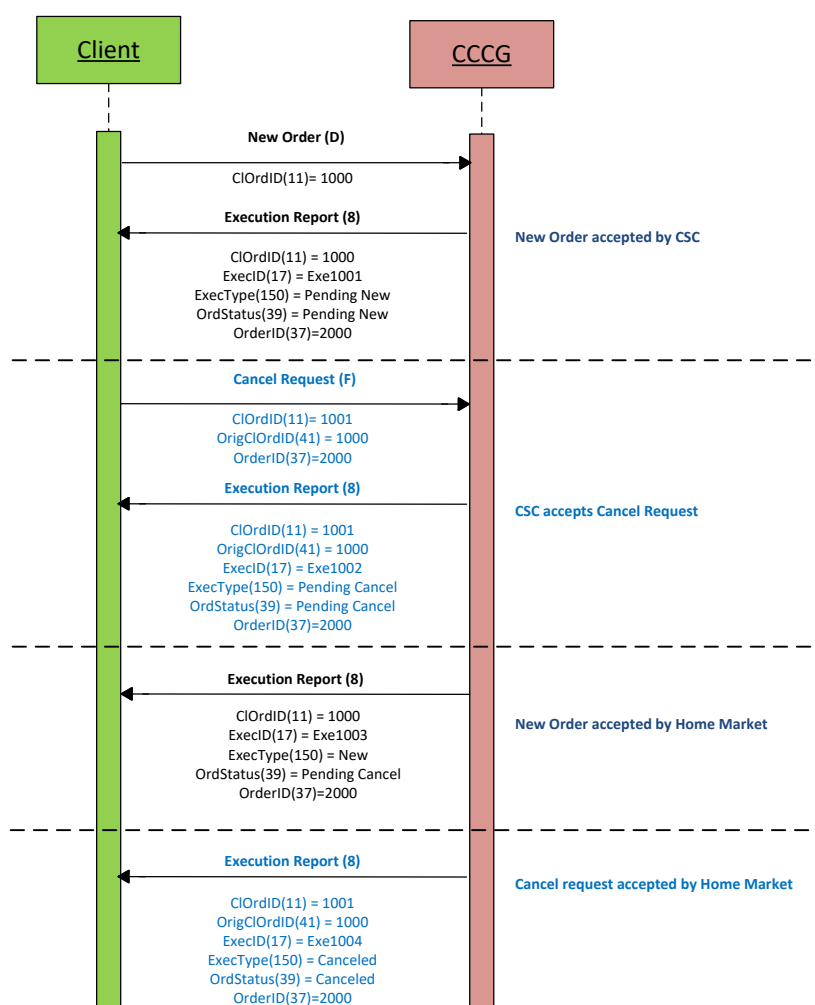
6.5.6 Mass Cancellation

Request for Mass order cancellation is not supported in CSC for the reason that China Connect markets do not offer such a function.

6.5.7 Amending an Order

Amendment of an attribute of an order is not supported in CSC for the reason that China Connect markets do not accept such an amendment.

6.5.8 Cancel Auto-matched Trades

There is no applicable business scenario where an already concluded trade could be cancelled.

6.5.9 General Order Handling Notes

1. CCCG may accept an order handling request before respective home market is open. During this period, CCCG would return only an Execution Report (35=8) to confirm the receipt of the request with ExecType = Pending New (150=A) for a request to submit a new order / ExecType = Pending Cancel (150=6) for a request to cancel an existing order, if this request passes through CSC's local validation rules. Subsequent processing results would be returned only after the respective home market is open and the request is processed by the home market.

2. The same behavior applies during the mid-day close of the respective home market.

3. For an order handling request submitted after the respective home market is closed for the day but before CCCG/CSC stops accepting further order handling requests for the day, CCCG would return the Execution Report (35=8) to acknowledge the receipt of the request with ExecType = Pending New (150=A) for a request to submit a new order / ExecType = Pending Cancel (150=6) for a request to cancel an existing order, if this request passes through CSC's local validation rules; but there will be no further events for this request, such pending requests will be cleaned up by CSC at the end of the day and therefore these requests will not be carried forward to the next trading day.

4. An order may be cancelled by the trading system of the home market, after accepting this order, due to rules and validations governing the home market; CCCG would return an Execution Report (35=8) to notify an unsolicited order cancel with Exec Restatement Reason = Cancelled by home market (378=108).

6.5.10 Execution Reports

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

ExecType (150)	Description	OrdStatus (39)
A = Pending New	**Order Pending to be accepted by the Home Market** Indicates that a new order has been accepted by CSC and forwarded to the home market.	▪ A = Pending New
0 = New	**Order Accepted** Indicates that a new order has been accepted by the market.	▪ 0 = New ▪ 6 = Pending Cancel
8 = Rejected	**Order Rejected** Indicates that an order has been rejected. The reason for the rejection is specified in the field OrdRejReason (103).	▪ 8 = Rejected
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 ▪ 6 = Pending Cancel
6 = Pending Cancel	**Order Pending to be Cancelled** Indicates that an Order Cancel Request has been accepted by CSC and forwarded to the home market.	▪ 6 = Pending Cancel
4 = Cancelled	**Order Cancelled** Indicates that an Order Cancel Request has been accepted and successfully processed by the home market. 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

6.5.11 Order Status

The previous section broadly covers the OrdStatus (39) values for different types of executions. For a rejection of Order Cancel Request (35=F) request, the following possible states are returned in the Order Cancel Reject (35=9) message:

- 0 = New
- 1 = Partially Filled
- 2 = Filled
- 4 = Cancelled
- 6 = Pending Cancel
- 8 = Rejected
- A = Pending New

6.6 Message Rejection

6.6.1 Session Level Reject

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 CCCG).

6.6.2 Business Message Reject

Business Message Reject (35=j) will be used in rejecting any business message due to application level validation failures such as MPS rate violations, conditionally required field violations, etc.

6.7 Cancel On Disconnect

This service will not be offered for CCCG.

6.8 Message Rate Throttling

HKEX has implemented a scheme for throttling message traffic where each Comp ID is only permitted to submit up to a specified number of business messages per second (MPS).

The client can request for message rate entitlement information pertaining to that client by sending a User Request (35=BE) message and the CCCG will reply with a User Response (35=BF) message to convey the message rate entitlement information.

Every message that exceeds the maximum rate of a Comp ID will be rejected via a Business Message Reject; the Text field within the Business Message Reject will indicate the remaining throttle interval time.

HKEX reserves the right to drop the client session with or without sending a Logout (35=5) message to the client, if that client is found to be excessively violating the message rate.

6.9 Party Entitlements

The client can request for entitlement information for Broker IDs of that client via Party Entitlement Request (35=CU) Message. If the Request is accepted, Party Entitlement Report (35=CV) message will carry the entitlement information.

7. Message Definitions

7.1 Supported Message Types

All supported message types initiated by the client or the CCCG:

#	Message	Message Type	Usage
1.	Heartbeat	0	Allows the client and the CCCG 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 CCCG 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 CCCG to increase the expected incoming sequence number of the other party.
6.	Logon	A	Allows the client and the CCCG to establish a FIX session.
7.	Logout	5	Allows the client and the CCCG 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 Pending Acceptance ▪ Order Accepted ▪ Order Rejected ▪ Order Cancelled ▪ Trade ▪ Order Pending Cancellation
10.	Order Cancel Reject	9	Indicates that a Cancel request has been rejected
11.	New Order – Single	D	Allows the client to submit a new order.
12.	Order Cancel Request	F	Allows the client to cancel a live order in the execution venue.
13.	User Request	BE	Allows the client to request for throttle entitlement details
14.	User Response	BF	Response to the User Request
15.	Party Entitlements Request	CU	Request entitlement information for Exchange participant
16.	Party Entitlements Report	CV	Response to Party Entitlements Request

Note: HKEX may add new data fields and/or new messages to serve new business requirements in the future and BSS should be designed to adopt these interface changes in a flexible approach.

7.2   In-bound Messages

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

1. New Order – Single (35=D)
2. Order Cancel Request (35=F)
3. User Request (35=BE)
4. Party Entitlements Request (35=CU)

7.3   Out-bound Messages

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

1. Execution Report (35=8)
2. Order Cancel Reject (35=9)
3. Business Message Reject (35=j)
4. User Response (35=BF)
5. Party Entitlements Response (35=CV)

7.4   Message Header

All messages exchanged between the client and the CCCG 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

FIX Tag	Field Name	Required?	Description
			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 CCCG.

7.5   Message Trailer

All messages exchanged between the client and the CCCG 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, 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 CCCG 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)
1404	EncryptedNewPassword	N	Encrypted new password – encrypted via the method specified in EncryptedPasswordMethod (1400)
1409	SessionStatus	N	Status of the FIX session.
			Required if the message is generated by the CCCG.

FIX Tag	Field Name	Required?	Description
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 CCCG to the client.
58	Text	N	Text field will be used to convey the number of days to password expiry when the CCCG replies with a Logon (35=A) message upon a successful logon attempt.
Message Trailer			

EncryptedPassword (1402) <u>must be present</u> in the Logon message (35=A) initiated by the client.

7.6.2 Logout (5)

This message can be initiated by both client and the CCCG.

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 CCCG.
58	Text	N	Textual reason for the logout.
Message Trailer			

7.6.3 Heartbeat (0)

This message can be initiated by both client and CCCG.

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 CCCG.

FIX Tag	Field Name	Required?	Description
Message Header			

FIX Tag	Field Name	Required?	Description
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 CCCG.

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

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.

FIX Tag	Field Name	Required?	Description
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 CCCG.

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

7.7.1 New Order – Single (D)

This message is initiated by the client to send a new order.

FIX Tag	Field Name	Required?	Description
Message Header			
35	MsgType	Y	D = New Order Single
Message Body			
11	ClOrdID	Y	Client specified identifier of the order.
Component Block <Parties>			
453	NoPartyIDs	Y	Number of party identifiers. The value in this field should be 1 or 2 or 3 or 4.
→ 448	PartyID	Y	ID of the Broker client submitting the order: Broker ID/SPSA Investor ID/BS User ID/Broker-to-Client Assigned Number (BCAN) At least Broker ID and BCAN must be specified. Valid BCAN range for assignment to broker's specific individual or institutional clients: 100 to 9,999,999,999 Valid BCAN reserved values (refer relevant business rule): ▪ 1 = for individual clients without client consent (for sell orders only) ▪ 2 = for institutional clients without client consent (for sell orders only) ▪ 3 = for individual Mainland investors (for sell orders only) ▪ 4 = for institutional Mainland investors (for sell orders only) A value with leading zeros will be rejected.
→ 447	PartyIdSource	Y	Defines the naming convention used in specifying the PartyID (448): ▪ D = Proprietary/Custom Code ▪ P = Short code identifier (only applicable for PartyRole=3(=Client ID))
→ 452	PartyRole	Y	Role of the specified PartyID (448): ▪ 1 = Executing Firm (Broker ID that is submitting this order) ▪ 3 = Client ID (Broker-to-Client Assigned Number); BCAN is enforced by the regulatory body and is mandatory to provide. ▪ 5 = Investor ID (SPSA Investor ID) ▪ 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).
			Required if:
			SecurityID (48) is specified
207	SecurityExchange	N	The market which is used to identify the security.
			Required if:
			SecurityIDSource (22) = 8 (Exchange Symbol).
End Component Block			
40	OrdType	Y	Order type applicable to the order:
			▪ 2 = Limit
58	Text	N	Free Text
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	Y	Total order quantity of the order
44	Price	N	Price of the order.
			Required if:
			OrdType (40) = 2 = Limit.
60	TransactTime	Y	The time at which the particular message was generated.
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.
528	OrderCapacity	N	Designates the capacity of the firm placing the order:
			▪ A = Agency
			▪ P = Principal
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.
Component Block <DisclosureInstructionGrp>			
1812	NoDisclosureInstructions	Y	Number of disclosure instructions below.
→ 1813	Disclosure Type	Y	Type of disclosure instruction to convey:
			▪ 100 = None (No specific information to disclose)
			It is a mandatory field for future use. EP should specify Disclosure Type 100 with Disclosure Instruction (1814) = 1 for completeness.

	1814	Disclosure Instruction	Y	Instruction to disclose information or to use default values of the receiver: ▪ 1 = Yes
End Component Block				
Message Trailer				

Notes:

1. *MaxPriceLevels (1090)* is expected be present in all New Order messages due to the order types supported by CCCG at present.

7.7.2 Order Cancel Request (F)

This message is initiated by the client to cancel an existing order.

FIX Tag		Field Name	Required?	Description
Message Header				
35		MsgType	Y	F = Order Cancel Request
Message Body				
11		ClOrdID	Y	Client specified identifier of this cancel request.
37		OrderID	N	Order ID of the original order.
41		OrigClOrdID	Y	Client Order ID of the order being cancelled.
Component Block <Parties>				
453		NoPartyIDs	Y	Number of party identifiers. The value in this field should be 1 or 2.
→	448	PartyID	Y	ID of the Broker client submitting the order cancel request – Broker ID or BS User ID. If Broker ID then it must be the same as in the original order. At least Broker ID must be present.
→	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 this 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). Required if: SecurityID (48) is specified
207		SecurityExchange	N	The market which is used to identify the security. Required if: SecurityIDSource (22) = 8 (Exchange Symbol).
End Component Block				
38		OrderQty	Y	Total order quantity of the order
54		Side	Y	Side of the order ▪ 1 = Buy ▪ 2 = Sell ▪ 5 = Sell Short
58		Text	N	Free Text
60		TransactTime	Y	The time at which the particular message was generated.
Message Trailer				

7.7.3   Execution Report (8)

7.7.3.1 Order Registered

The CCCG will send this execution report once the new order is registered in CSC and forwarded to the home market for processing.

	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 CSC.
	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 or 3.
→	448	PartyID	Y	ID of the Broker client submitting the order: Broker ID/ SPSA Investor 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) ▪ 5 = Investor ID (SPSA Investor ID) ▪ 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). Required if: SecurityID (48) is specified
	207	SecurityExchange	N	The market which is used to identify the security. 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.

FIX Tag	Field Name	Required?	Description
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
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.
39	OrdStatus	Y	Order Status after applying the transaction that is being communicated: ▪ A = Pending New
150	ExecType	Y	Execution Type that indicates the reason for the generation of the Execution Report: ▪ A = Pending 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: ▪ 2 = Round Lot
Message Trailer			

Notes:
1. *If LotType (1093) is absent then this execution report caries a board (i.e., round) lot order.*

7.7.3.2 Order Accepted

The CCCG will send this execution report once the new order has been accepted by the home market.

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 CSC.
	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 or 3.
→	448	PartyID	Y	ID of the Broker client submitting the order: Broker ID/ SPSA Investor 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) ▪ 5 = Investor ID (SPSA Investor ID) ▪ 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). Required if: SecurityID (48) is specified
	207	SecurityExchange	N	The market which is used to identify the security. 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
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.
39	OrdStatus	Y	Order Status after applying the transaction that is being communicated: ▪ 0 = New ▪ 6 = Pending Cancel
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: ▪ 2 = Round Lot
Message Trailer			

Notes:
2. If LotType (1093) is absent then this execution report caries a board (i.e., round) lot order.

7.7.3.3 Order Rejected

The CCCG will send this execution report once the new order is rejected.

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 CSC.
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 or 3.

	448	PartyID	Y	ID of the Broker client submitting the order: Broker ID/SPSA Investor 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) ▪ 5 = Investor ID (SPSA Investor ID) ▪ 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). Required if: SecurityID (48) is specified
	207	SecurityExchange	N	The market which is used to identify the security. 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
	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.

FIX Tag	Field Name	Required?	Description
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: ▪ 8 = Rejected
150	ExecType	Y	Execution Type that indicates the reason for the generation of the Execution Report: ▪ 8 = Reject
14	CumQty	Y	Cumulative execution size
151	LeavesQty	Y	Open order quantity
103	OrdRejReason	N	Reject code indicating the reason for the order reject: ▪ 3 = Order exceeds Limit ▪ 6 = Duplicate order (e.g., dupe ClOrdID) ▪ 13 = Incorrect quantity ▪ 22 = Short sell not permitted ▪ 99 = Other ▪ 101 = Price exceeds current price band (override not allowed)
1328	RejectText	N	Textual description of the rejection that is being communicated through this execution report
58	Text	N	Free Text
Message Trailer			

7.7.3.4 Order Cancel Request Registered

The CCCG sends this execution report once the Cancel Request for an order is accepted within CSC and forwarded to the home market.

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 cancel request.
41	OrigClOrdID	Y	Original client specified identifier for the incoming cancel request
37	OrderID	Y	Order ID as assigned by CSC.
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). Required if: SecurityID (48) is specified
	207	SecurityExchange	N	The market which is used to identify the security. 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
	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: ▪ 6 = Pending Cancel
150	ExecType	Y	Execution Type that indicates the reason for the generation of the Execution Report: ▪ 6 = Pending Cancel
14	CumQty	Y	Cumulative execution size
151	LeavesQty	Y	Open order quantity
58	Text	N	Free Text
Message Trailer			

7.7.3.5 Order Cancelled

The CCCG sends this execution report once the Cancel Request for an order is accepted by the home market.

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 cancel request.
41		OrigClOrdID	Y	Original client specified identifier for the incoming cancel request
37		OrderID	Y	Order ID as assigned by CSC.
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). Required if: SecurityID (48) is specified
207	SecurityExchange	N	The market which is used to identify the security. 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
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

FIX Tag	Field Name	Required?	Description
14	CumQty	Y	Cumulative execution size
151	LeavesQty	Y	Open order quantity
58	Text	N	Free Text
Message Trailer			

7.7.3.6 Order Cancelled – Unsolicited

The CCCG will send this execution report for an unsolicited cancel of an order.

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 CSC.
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). Required if: SecurityID (48) is specified
207		SecurityExchange	N	The market which is used to identify the security. 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
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
1328	RejectText	N	Textual description of the reason for unsolicited cancel
58	Text	N	Free Text
378	ExecRestatementReason	N	Code to identify the reason for an Execution Report message with ExecType= 4 (Cancel): ■ 8 = Market Operation ■ 99 = Other ■ 105 = Cancel due to Broker suspension ■ 106 = Cancel due to Exchange Participant suspension ■ 107 = System Cancel ■ 108 = Cancelled by the home market

Message Trailer

7.7.3.7 Trade (Order Executed)

The CCCG sends this execution report for a trade concluded at the home market.

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 CSC.
17	ExecID	Y	Unique Execution ID assigned for each Execution Report generated.
880	TrdMatchID	N	Identifier assigned to a trade by the home market.
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.
→ 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). Required if: SecurityID (48) is specified
207	SecurityExchange	N	The market which is used to identify the security. 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
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 ▪ 6 = Pending Cancel
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
58	Text	N	Free Text
1093	LotType	N	Lot Type of the order: ▪ 2 = Round Lot
75	TradeDate	N	Indicates date of trading day. Absence of this field indicates current day.

Message Trailer

Notes:

1. *Counterparty Broker ID (*PartyID with PartyRole=17*)* may or may not always be present in the Parties block.

7.7.4 Cancel Reject (9)

The CCCG sends this message when a Cancel Order (35=F) request is rejected.

FIX Tag		Field Name	Required?	Description
Message Header				
35		MsgType	Y	9 = Cancel Reject
Message Body				
11		ClOrdID	Y	Client identifier as specified in the Cancel or Cancel/Replace request.
41		OrigClOrdID	N	Original Client specified identifier of the order.
37		OrderID	Y	Order ID as assigned by CSC.
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 is receiving this cancel) ▪ 75 = Location ID (BS User ID)
End Component Block				
60		TransactTime	Y	The time at which the particular message was generated
39		OrdStatus	Y	Order status as at the time of this rejection: ▪ 0 = New ▪ 1 = Partially Filled ▪ 2 = Filled ▪ 4 = Cancelled ▪ 8 = Rejected ▪ 6 = Pending Cancel ▪ A = Pending New OrdStatus will be set to 8 = Rejected if: ● Cancel Reject is due to an Order Cancel Request but it's an unknown order
434		CxlRejResponseTo	Y	Indicates whether the message is being generated as an amend reject or a cancel reject: ▪ 1 = Order Cancel Request

102	CxlRejReason	N	Reject code indicating the reason for the order reject: ▪ 0 = Too late to cancel ▪ 1 = Unknown order ▪ 3 = Order already in Pending Cancel or Pending Replace status ▪ 6 = Duplicate ClOrdID (11) received ▪ 99 = Other (default)
58	Text	N	Free Text
1328	RejectText	N	Textual description of the rejection that is being communicated through this execution report

Message Trailer

7.8 Entitlements

7.8.1 Party Entitlement Request (CU)

The client sends this message to request for entitlement details.

FIX Tag	Field Name	Required?	Description
Message Header			
35	MsgType	Y	CU= Party Entitlements Request
Message Body			
1770	EntitlementsRequestID	Y	Client assigned identifier for this request
Message Trailer			

7.8.2 Party Entitlement Report (CV)

The CCCG sends this message in response to a request for entitlement details.

The CCCG will fragment this Party Entitlement Report per each Broker ID belonging to the client. The CCCG will use TotNoPartyList (1512) to specify the total number of Broker IDs for which the entitlement information is provided. The last message will have the LastFragment (893) set to Y.

FIX Tag	Field Name	Required?	Description
Message Header			
35	MsgType	Y	CV = Party Entitlements Report
Message Body			
1771	EntitlementsReportID	Y	Identified assigned to this report message.
1770	EntitlementsRequestID	N	Client assigned identifier to the Party Entitlements Request message. Conditionally required if the Party Entitlement Report is in response to a Party Entitlements Request

1511			RequestResult	N	Conditionally required if the Party Entitlement Report is in response to a Party Entitlements Request: ▪ 0 = Valid Request ▪ 1 = Invalid or unsupported request ▪ 2 = No data found that match selection criteria ▪ 3 = Not authorized to retrieve data ▪ 4 = Data temporarily unavailable ▪ 5 = Request for data not supported ▪ 99 = Other
1512			TotNoPartyList	N	Number of Broker IDs to be returned
893			LastFragment	N	Indicates whether this message is the last in a sequence of fragmented messages: ▪ N = No ▪ Y = Yes
Component Block <PartyEntitlementGrp>					
1772			NoPartyEntitlements	Y	Number of party entitlement values
→	Component Block <PartyDetailGrp>				
→	1671		NoPartyDetails	Y	Number of party identifiers. The value in this field should be 1.
	→	1691	PartyDetailID	Y	Broker ID
→	→	1692	PartyDetailIDSource	Y	Defines the naming convention used in specifying the PartyID (448): ▪ D = Proprietary/Custom Code
→	→	1693	PartyDetailRole	Y	Role of the specified PartyID (448): ▪ 1 = Executing Firm
→	End Component Block				
→	Component Block <EntitlementGrp>				
→	1773		NoEntitlements	N	Number of entitlements here

→	→		1774	EntitlementIndicator		Determines if the party is entitled: ▪ Y- Entitled ▪ N- Not Entitled Required if: NoEntitlements (1773) > 0
→	→		1775	EntitlementType	N	Absence of this field indicates the meaning of the entitlement is implicit. ▪ 0 = Trade
→	→	Component Block <MarketSegmentScopeGrp>				
→	→		1310	NoMarketSegments	N	Number of Market entitlements
→	→	→	1301	MarketID	N	Identifies the Market/ Market Segment. Required if: NoMarketSegments (1310) > 0
→	→	End Component Block				
→	→		1776	EntitlementID	N	Unique identifier for a specific NoElements (1773) repeating group instance.
→	End Component Block					
End Component Block						
Message Trailer						

7.9 Infrastructure

7.9.1 Business Message Reject (j)

This message can be initiated by the CCCG.

FIX Tag	Field Name	Required?	Description
Message Header			
35	MsgType	Y	j= Business Message Reject
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 ▪ 1 = Unknown ID ▪ 2 = Unknown Security ▪ 3 = Unspecified Message Type ▪ 4 = Application not available ▪ 5 = Conditionally required field missing ▪ 8 = Throttle limit exceeded
58	Text	N	Where possible, message to explain reason for rejection In case the BusinessRejectReason (380) = 8 (Throttle Limit Exceeded), the Text (58) field will indicate the remaining throttle interval time in milliseconds.
Message Trailer			

7.9.2 User Request (BE)

The User Request messages can be used by the client to request for throttle entitlement details for this requesting client.

FIX Tag	Field Name	Required?	Description
Message Header			
35	MsgType	Y	BE= User Request
Message Body			
923	UserRequestID	Y	Client assigned identifier for this request
924	UserRequestType	Y	Indicates the action required: ▪ 5 = Request Throttle Limit
553	UserName	Y	Same as SenderCompID
Message Trailer			

7.9.3 User Response (BF)

The User Response message is used by the CCCG as a response to a User Request to provide throttle entitlement details for the requesting client.

FIX Tag		Field Name	Required?	Description
Message Header				
35		MsgType	Y	BF= User Response
Message Body				
923		UserRequestID	Y	Client assigned identifier for the User Request
553		UserName	Y	As provided in 35=BE
Component Block <ThrottleParamsGrp>				
1610		NoThrottles	N	Throttle information to follow
→	1611	ThrottleAction	N	Action to be taken should throttle limit be exceeded: ▪ 2 = Reject
→	1612	ThrottleType	N	Type of throttle: ▪ 0 = Inbound Rate (Absolute throttle rate)
→	1613	ThrottleNoMsgs	N	The maximum number of messages allowed by the throttle. Can be used only when ThrottleType (1612) = Inbound Rate. Indicates, along with ThrottleTimeUnit (1614), the interval of time in which ThrottleNoMsgs (1613) may be sent. Default is 1.
→	1614	ThrottleTimeInterval	N	Indicates the interval of time in which the Throttle No Messages may be sent based on the Throttle Time Unit specified. Default Seconds Required if: ThrottleType (1612) = 0 (Inbound Rate)
→	1615	ThrottleTimeUnit	N	Indicates the unit in which Throttle Time Interval is expressed: ▪ 0 = Seconds(default if not specified) Required if: Throttle Type = 0 (Inbound Rate)
End Component Block				
Message Trailer				

8. Data Dictionary

8.1 Session Level

Tag	Field Name	Data Type	Description	Comments
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 ▪ 9 = Order Cancel Reject ▪ A = Logon ▪ D = New Order – Single ▪ F = Order Cancel Request ▪ BE = User Request ▪ BF = User Response ▪ CU = Party Entitlement Request ▪ CV = Party Entitlement 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.	Limited to maximum 11 characters
52	SendingTime	UTCTimestamp	Time the message was transmitted. Format: YYYYMMDD-HH:MM:SS.sss	
56	TargetCompID	String	Comp ID of the party the message is sent to	Limited to maximum 11 characters
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	Limited to maximum 20 characters
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.sss	
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.	Limited to maximum 3 characters
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	
380	BusinessRejectReason	Int	Code specifying the reason for the rejection of the business message ▪ 0 = Other ▪ 1= Unknown ID ▪ 2 = Unknown Security ▪ 3= Unspecified Message Type ▪ 4= Application not available ▪ 5 = Conditionally required field missing ▪ 8 = Throttle Limit exceeded	
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 CCCG to the client	

554	Password	String	Password assigned to the Comp ID. Required if the message is generated by the client.	Limited to maximum 24 characters
789	NextExpectedMsgSeqNum	SeqNum	Next expected MsgSeqNum value to be received	
925	NewPassword	String	New password for the Comp ID.	Limited to maximum 24 characters
1128	ApplVerID	String	Version of FIX used in the message. Required if the message is generated by the CCCG.	Limited to maximum 4 characters
1137	DefaultApplVerID	String	Default version of FIX messages used in this session.	Limited to maximum 4 characters
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)	Limited to maximum 449 characters
1404	EncryptedNewPassword	Data	Encrypted new password – encrypted via the method specified in EncryptedPasswordMethod (1400)	Limited to maximum 449 characters
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 the 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	Comments
11	ClOrdID	String	Unique identifier of the order as assigned by the client	Limited to maximum 8 digits
14	CumQty	Qty	Total quantity filled	
17	ExecID	String	Unique Execution ID assigned by the system for each Execution Report generated	Limited to maximum 20 characters
19	ExecRefID	String	Reference identifier used with Trade and Trade Cancel execution types	Limited to maximum 20 characters
22	SecurityIDSource	String	Identifies the source of the SecurityID (48). ▪ 8 = Exchange Symbol Required if: SecurityID (48) is specified	Limited to maximum 4 characters
31	LastPx	Price	Price of this fill. Execution price	
32	LastQty	Qty	Quantity executed in this fill. Execution size	
37	OrderID	String	Unique identifier for Order as assigned by CSC	Limited to maximum 20 characters
38	OrderQty	Qty	Total order quantity.	
39	OrdStatus	Char	Current status of the order: ▪ 0 = New ▪ 1 = Partially filled ▪ 2 = Filled ▪ 4 = Cancelled ▪ 6 = Pending Cancel ▪ 8 = Rejected ▪ A = Pending New	
40	OrdType	Char	Type of the order: ▪ 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	Limited to maximum 8 digits
44	Price	Price	Limit price of the order	
48	SecurityID	String	Identifier of the instrument.	Limited to maximum 20 characters
54	Side	Char	Side of the order: ▪ 1 = Buy ▪ 2 = Sell ▪ 5 = Sell short	
58	Text	String	Free format text string	Limited to maximum 90 characters
59	TimeInForce	Char	Specifies how long the order remains in effect: ▪ 0 =Day Absent = Day	
60	TransactTime	UTCTimestamp	Time qualifier of the order Format: YYYYMMDD-HH:MM:SS.sss	
75	TradeDate	LocalMktDate	Indicates date of trading day. Absence of this field indicates current day. If present, may carry a date different from current date, if "**Test Message Indicator** in **Logon** message = *Test Mode*"	
77	PositionEffect	Char	Indicates whether the resulting position after a trade should be an opening position or closing position: ▪ C = Close	

102	CxlRejReason	Int	Code to identify reason for cancel rejection ▪ 0 = Too late to cancel ▪ 1 = Unknown Order ▪ 3 = Order already in Pending Cancel or Pending Replace status ▪ 6 = Duplicate ClOrdID (11) received ▪ 99 = Other	
103	OrdRejReason	Int	Code to identify reason for order rejection ▪ 3 = Order exceed limit ▪ 6 = Duplicate order ▪ 13 = Incorrect quantity ▪ 22 = Short sell not permitted ▪ 99 = Other ▪ 101 = Price exceeds current price band (override not allowed)	
150	ExecType	Char	Describes the specific Execution report ▪ 0 = New ▪ 6 = Pending Cancel ▪ 8 = Rejected ▪ A = Pending New ▪ F = Trade ▪ 4 = Cancelled	
151	LeavesQty	Qty	Quantity open for further execution	
207	SecurityExchange	Exchange	Market used to help identify a security. Valid values: ▪ XSSC = Stocks listed in Shanghai Stock Exchange under Shanghai – Hong Kong Stock Connect ▪ XSEC = Stocks listed in Shenzhen Stock Exchange under Shenzhen – Hong Kong Stock Connect Required if: SecurityIDSource (22) = 8 (Exchange Symbol).	Limited to maximum 4 characters

378	ExecRestatementReason	Int	Code to identify reason for an Execution Report message sent when communicating an unsolicited cancel: ▪ 8 = Market (Exchange) Option ▪ 99 = Other ▪ 105 = Cancel due to Broker suspension ▪ 106 = Cancel due to Exchange Participant suspension ▪ 107 = System Cancel ▪ 108 = Cancelled by the home market	
379	BusinessRejectRefID	String	The value of the business-level "ID" field on the message being referenced.	Limited to maximum 20 characters
434	CxlRejResponseTo	Char	Identifies the type of request that a Cancel Reject is in response to: ▪ 1 = Order Cancel Request	
447	PartyIDSource	Char	Identifies class or source of the PartyID (448) value.	
448	PartyID	String	Party identifier/code	Limited to maximum 11 characters
452	PartyRole	Int	Identifies the type or role of the PartyID (448) specified	
453	NoPartyIDs	NumInGroup	Number of PartyID	
528	OrderCapacity	Char	Designates the capacity of the firm placing the order: ▪ A = Agency ▪ P = Principal	
553	UserName	String	User id or username	Limited to maximum 49 characters
574	MatchType	String	The point in the matching process at which this trade was matched: ▪ 4 = Auto Match	Limited to maximum 5 characters
880	TrdMatchID	String	Identifier assigned to a trade by the home market.	Limited to maximum 24 characters
893	LastFragment	Boolean	Indicates whether this message is the last in a sequence of messages.	

923	UserRequestID	String	Unique identifier for a User Request	Limited to maximum 19 characters
924	UserRequestType	Int	Indicates the action required by a User Request Message	
1090	MaxPriceLevels	Int	Allows an order to specify a maximum number of price levels to trade through	
1093	LotType	Char	Defines the lot type assigned to the order: ▪ 2 = Round Lot	
1301	MarketID	Exchange	Identifies the market / market segment in the entitlement scope: ▪ ASHR = Market Segment for stocks listed in Shanghai, under Shanghai – Hong Kong Stock Connect. ▪ ASZR = Market Segment for stocks listed in Shenzhen, under Shenzhen– Hong Kong Stock Connect.	Limited to maximum 4 characters
1310	NoMarketSegments	NumInGroup	Number of Market entitlements	
1328	RejectText	String	Rejection text	Limited to maximum 99 characters
1511	RequestResult	Int	Conditionally required if the Party Entitlement Report is in response to a Party Entitlements Request: ▪ 0 = Valid Request ▪ 1 = Invalid or unsupported request ▪ 2 = No data found that match selection criteria ▪ 3 = Not authorized to retrieve data ▪ 4 = Data temporarily unavailable ▪ 5 = Request for data not supported ▪ 99 = Other	
1512	TotNoPartyList	Int	Total broker Ids to be returned	
1610	NoThrottles	NumInGroup	Number of Throttle to follow	
1611	ThrottleAction	Int	Action to be taken once the throttle limit is exceeded: ▪ 2 = Reject	

1612	ThrottleType	Int	Type of throttle : ■ 0 = Inbound Rate	
1613	ThrottleNoMsgs	Int	Maximum Number of messages allowed by the throttle	
1614	ThrottleTimeInterval	Int	Indicates, along with ThrottleTimeUnit, the interval of time in which ThrottleNoMsgs may be sent. Can be used only when ThrottleType = Inbound Rate.	
1615	ThrottleTimeUnit	Int	Indicates, along with ThrottleTimeUnit, the interval of time in which ThrottleNoMsgs may be sent: ■ 0 = Seconds Can be used only when ThrottleType = Inbound Rate.	
1671	NoPartyDetails	NumInGroup	Number of party details	
1691	PartyDetailID	String	The identification of the party. Required when NoPartyDetails (1671) > 0	Limited to maximum 11 characters
1692	PartyDetailIDSource	Char	Source of the identifier of the PartyDetailID (1691) specified.	
1693	PartyDetailRole	Int	Identifies the type or role of PartyDetailID (1691) specified	
1770	EntitlementsRequestID	String	EntitlementsRequestID of the PartyEntitlementRequest message the response is to	Limited to maximum 20 characters
1771	EntitlementsReportID	String	Unique identifier for PartyEntitlementReport	Limited to maximum 20 characters
1772	NoPartyEntitlements	NumINGroup	Number of party entitlement values	
1773	NoEntitlements	NumINGroup	Number of entitlement values	
1774	EntitlementIndicator	Bool	Determines if the party is entitled: ■ Y= Entitled ■ N= Not Entitled Required if: NoEntitlements(1773) >0.	

1775	EntitlementType	Int	Absence of this field indicates that the entitlement is implicit: ▪ 0 = Trade	
1776	EntitlementID	String	Unique identifier for specific a specific NoElements (1773) repeating group instance	Limited to maximum 20 characters
1812	NoDisclosureInstructions	NumINGroup	No of Disclosure Instructions	
1813	DisclosureType	Int	Information subject to disclosure: ▪ 100 = None	
1814	DisclosureInstruction	Int	Instruction to disclose information or to use default values of the receiver: ▪ 1 = Yes	

Appendices

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.

B. Reference of Rejection Codes from Home Market

1. When New order is rejected by home market, CCCG will send Execution Report (Order Rejected) with:

   OrdRejReason(103)=99
   RejectText(1328)="9101 Rejected by market back-end   nnnnn"
   where nnnnn is the error code returned by the home market (SSE or SZSE)

2. When Cancel order is rejected by home market, CCCG will send Cancel Reject with:
   CxlRejReason(102)=99
   RejectText(1328)="9101 Rejected by market back-end   nnnnn"
   where nnnnn is the error code returned by the home market (SSE or SZSE)

3. Error code returned by SSE can be referred to the latest version of the error code excel document provided in the Shanghai Stock Exchange's web site of the following link:
   http://www.sse.com.cn/services/tradingservice/tradingtech/technical/other/
   Document name: "IS111 上海证券交易所报盘软件错误代码表 n.nn 版"

4. Error code returned by SZSE can be referred to the latest version of the Error Code section of the SZSE Trading Interface document provided in the Shenzhen Stock Exchange's web site of the following link:
   http://www.szse.cn/marketServices/technicalservice/index.html
   Document name: "深圳证券交易所 Binary 交易数据接口规范（Vern.nnn）"
   Relevant section: "委托申报拒绝原因代码"

Note: Error codes are subjected to change by the mainland stock exchanges and therefore CCEPs should always refer the latest version of error code documents available on the web sites of respective mainland stock exchanges.

C. Rejection Code for BCAN Validation

This appendix provides the scenarios of BCAN rejection for order submission and the corresponding reject message and error code for reference.

Scenario	Rejected By	Reject Message
BCAN tag missing	CCCG/CSC	Reject (3) SessionRejectReason(373) = 1 (Required Tag Missing)
Blank BCAN value	CCCG/CSC	Reject (3) SessionRejectReason(373) = 4 (Tag specified without a value)
Invalid BCAN format (e.g. non-numeric, value with leading zero(s))	CCCG/CSC	Execution Report (8) – Order Rejected OrdRejReason(103) = 99 (Other) RejectText(1328) = "2058 Invalid BCAN"
BCAN rejected by home market	Home Market	Execution Report (8) – Order Rejected OrdRejReason(103) = 99 (Other) RejectText(1328) = "9101 Rejected by market back-end nnnnn" where nnnnn can be referred to the table of rejection code for SSE & SZSE below

Rejection Code for BCAN Validation from Home Market

Reject Code	Description
Shanghai Stock Exchange (SSE)	
01104	券商客户编码为空
11080	投资者对该产品没有买权限
11082	投资者对该产品没有卖权限
11266	投资者对该产品子类型没有买权限
11268	投资者对该产品子类型没有卖权限
13576	券商代码或券商客户编码非法
13578	券商用户编码为预设值无买权限
Shenzhen Stock Exchange (SZSE)	
20001	BCAN 为无效编码
20002	BCAN 为无效编码 (已注销等)
20029	市场参与者业务资格被限制
20069	委托的 BCAN 在预设值范围内且不为卖委托
20171	委托的 BCAN 为内地投资者且不为卖委托

Note:
BCAN rejection codes in the table are provided by SSE & SZSE and are subjected to change by the mainland stock exchanges. HKEX may not update this error code table at the same time of change by the respective mainland stock exchanges.