Hi-Cert - Fix Protocol

Notes for FIX developers

Version 1.1

Confidential

list

TABLE OF CONTENTS

HISTORY OF CHANGES

Date	Version	Author	Description
6/18/2020	1.0	List SPA	First Release
11/4/2020	1.1	List SPA	Iceberg Orders are not allowed

1 STATEMENT OF NON-DISCLOSURE

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2 SCOPE

Hi-Cert is the Hi-Mtf Market Segment dedicated to Certificates and Covered Warrants characterized by a Market Model appropriately defined for achieving more competitive spreads and high standards in terms of ordered trading.

The ISVs can choose between the standard FIX protocol (4.4 or 5.0 versions) and the platform FTX's native APIs.

This document is intended as an addendum to the document *FIX Messages Requirements Trading and Drop Copy HiMTF - Certificates* (v.1.0 or later) to help developers to set up a FIX interface to the Hi-Cert market of the HiMTF exchange.

The document *FIX Messages Requirements Trading and Drop Copy HiMTF - Certificates* must be used as the main guide to connect to the Hi-Cert market, while this document describes usage notes for FIX messages and field which are typical of the Hi-Cert market section.

3 HI – CERT MARKET MODEL

The main characteristics of the Hi-Cert market model are:

- "Ibrid" CLOB model with an "Order Driven" (All to All) base with only one mandatory **Liquidity Provider (LP)**.
- Continuous negotiation with no recurring auctions.
- Matching allowed only within the bid-offer quotes of the LP.
- Continuous negotiation only if the LP is present.
- Automatic suspension if the LP is absent.
- LP can activate a validation mechanism for the quotes on the market book called **Request For Execution** (RFE, briefly described in the next section of this document).
- Orders within LP quotes match without triggering the RFE mechanism.
- The **RFE is generated in case of imminent matching** between an order and a quote with RFE modality set.
- LP is notified via a specific message when the RFE starts and ends.
- LP quotes are **non-anonymous**. The market book shows the identity code of the LP owner of the quote and whether the quote is subject to the RFE.

The LP must send Bid-Offer quotes as well as Bid-Only quotes, according to their liquidity obligations.

The orders from the price taker accepted by the market have the following characteristics:
- The order types admitted are: Limit orders and Market to Limit orders.
- Orders with a duration exceeding the ongoing trading day are not allowed.
- Iceberg orders are NOT allowed.
- All Or Nothing orders are allowed as well as partially executable orders.
- Price Taker can send orders for their own account as well as on behalf of their clients.

4 THE RFE MECHANISM

This section describes briefly the functioning of the Request For Execution in order to understand the protocol messages to cope with RFE. For a complete description, please refer to the official Market Rule Book.

The RFE mechanism aims to reduce quotation errors and enables the LP to expose prices with narrower spreads, thus having a benefic effect on liquidity and on final customers. It is generated in case of imminent matching between an order and a quote with RFE modality set.

For any enabled financial instrument the LP can send "Firm" (executable) quotes or "Subject" quotes. The LP can set or update such indication with **a specific flag in the quotation message**. It indicates whether the quote can trigger a Request for Execution (RFE) or not, as well as its execution modality during an RFE:

- If set to "Subject", an RFE is triggered when the quote is hit by a matching price. If set to "Firm", this quote cannot trigger an RFE and the matching price is automatically accepted.
- During an RFE, "Firm" is used to confirm the matching price (aka quote validation) and "Subject" is rejected (not a valid value during an RFE).

Anytime an RFE starts or ends, the **market sends a specific message to the LP** owner of that financial instrument.

During the RFE phase:

- The matching is suspended until the end of the RFE.
- The price takers can continue to create, modify or cancel their orders. They are accepted but not visible in the market book.
- The LP can only send a quote validation (with a "Firm" quote) or let the RFE to expire.
- "Subject" quotes are rejected by the market, as considered unintended, and the RFE phase continues.
- When quote validation is received, matching is restored.

The LP must reply to the RFE with a Quote validation as fast as possible, within a maximum time period indicated in the market Rule Book, in order to execute the trade. If no answer from the LP arrives within this period, or the Quote is cancelled or not validated, the Quote is removed from the order book and the security suspended until the LP re-activate the quotation.

The RFE phase can early-terminate once the order(s) in imminent matching is cancelled, or once the Quote is cancelled or validated.

5 FIX MESSAGES FOR LPS ONLY

This section lists the FIX messages which are meant to be used only by LPs. Moreover, here are highlighted those messages and tags that must be used by the LPs for the management of the RFE mechanism described in the chapter 4, and are shown some examples of workflows involving the RFE.

The complete list of the supported messages among with a description of their workflows are detailed in the document *FIX Messages Requirements Trading and Drop Copy HiMTF – Certificates*.

The FIX messages intended for the LPs only are the followings:

- **Quote (Type S)**: such message must be used in order to send new quotes, as well as to edit or cancel existing quotes.
- **Quote Status Report (Type AI)**: such message is sent by the market to the LP in order to acknowledge a previously received Quote (Type S) message.
- **Security Status Request (type E)** and **Security Status (type F)**: such messages can be used both by LPs and Price Takers, but only the LPs can use them in order to know when an RFE starts or ends.

5.1 RFE RELATED MESSAGES AND TAGS (FOR LPS ONLY)

This paragraph highlights those FIX messages and tags that must be used by the LPs for the management of the RFE mechanism described in the chapter 4

Quote (type S) message

Anytime during the negotiation, the LP can set the following **RFEIndicator** flag in order to make the quote "Subject" (RFE required) or "Firm" (RFE not required, immediately executable). As described in chapter 4, during an RFE, "Firm" value is also used to confirm the matching price (quote validation), whereas the "Subject" value is rejected (not a valid value during an RFE).

Tag	Field Name	Content	Data Type	Req
5002	RFEIndicator	Possible values: • 0 = Subject • 1 = Firm If the quote is Firm, a trade is automatically made when the quote is hit. Otherwise, with a Subject quote, the Liquidity provider is required to confirm for a trade to be concluded.	Char	N

Security Status Request (type E) and Security Status (type F) messages

The LP has also the possibility to receive a notification from the market any time a RFE starts or ends. This is possible by sending a **Security Status Request** message (type E) to the market, specifying the willing to receive all the security status updated as unsolicited messages with the appropriate value of the following tag.

263	SubscriptionRequestType	Subscription Request Type Valid values: • 0 = Snapshot • **1 = Snapshot + Updates (Subscribe)** • 2 = Disable previous Snapshot + Update Request (Unsubscribe)	Char	Y

After that any time the status of the security changes, including when a RFE starts or ends, the market will send to the LP a **Security Status** message (type F) with the indication status in the following tag:

326	SecurityTradingStatus	Identifies the trading status applicable: it has to be defined according to FTX Platform. Valid values: • **17 = Ready to trade (start of session)** • 2 = Trading Halt • 18 = Not Available for trading (end of session) • **30 = Request For Execution**	Integer	Y

5.2 RFE WORKFLOWS

The following pictures describe the workflow of some RFE scenarios involving the LP, the Market and a Price Taker.

RFE with Quote validation

The following is a scenario of an RFE that ends because the market received a quote validation within the RFE time out.
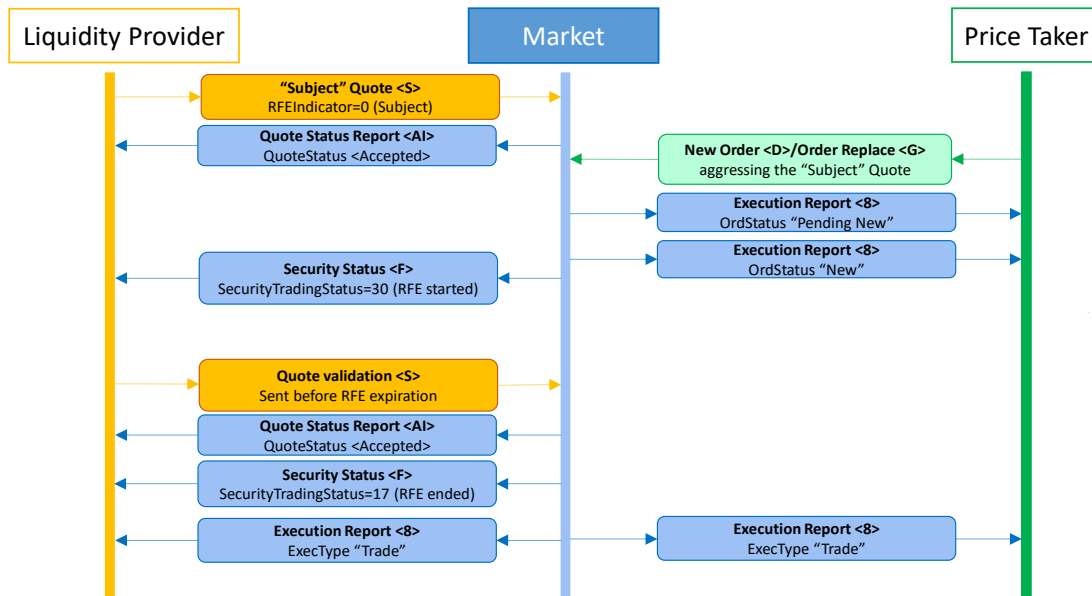
In this scenario we assume that the quote and the order are still compatible at the end of the RFE, thus a trade between LP and PT is done.

RFE expiration

The following is a scenario of an RFE that expires without quote validation.
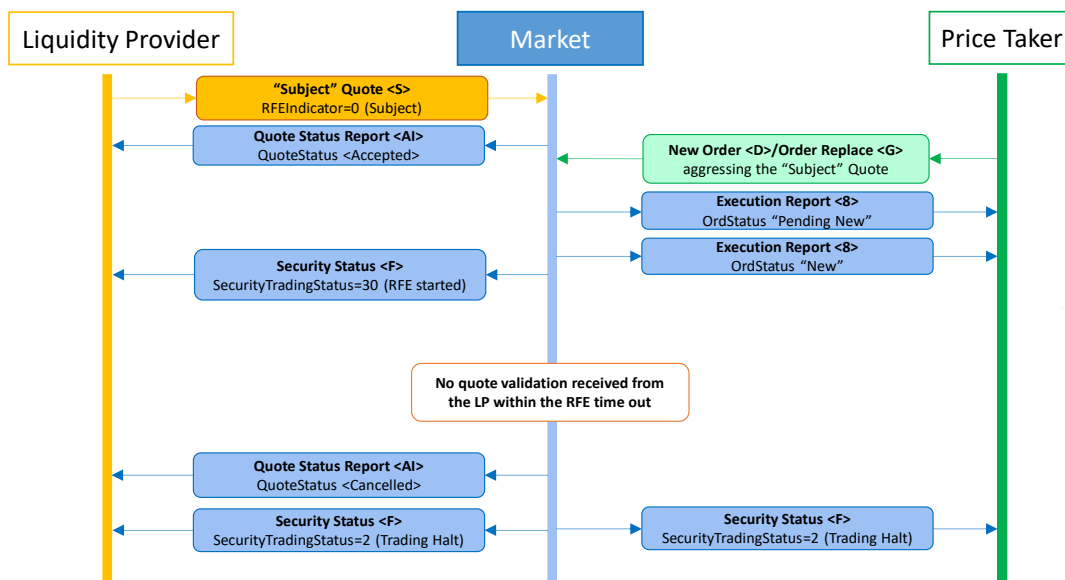
This scenario shows how the market:

1. automatically cancel the quote due to the RFE expiration, and
2. automatically suspend the security due to the quotes is cancelled.

6 FIX MESSAGES FOR PRICE TAKERS ONLY

This section lists the FIX messages which are meant to be used only by the Price Takers.

The complete list of the supported messages among with a description of their workflows are detailed in the document *FIX Messages Requirements Trading and Drop Copy HiMTF – Certificates*.

The FIX messages intended for the Price Takers only are the followings:

- New Order (Type D)
- Order Cancel (Type F) / Cancel/Replace (Type G)
- Order Cancel Reject (Type 9)

The orders from the price taker accepted by the market have the following characteristics:
- The order types admitted are: **Limit orders** and **Market to Limit orders**.
- Orders with a duration exceeding the ongoing trading day are not allowed.
- **Iceberg** orders are NOT allowed.
- **All Or Nothing** orders are allowed as well as partially executable orders.
- Price Taker can send orders for their own account as well as on behalf of their clients.

From the trading level point of view the RFEs are transparent to Price Takers, hence they don't need to cope with specific trading messages or fields related to the RFE mechanism.
As we will describe in the next section, the only message related to RFE, which is of interest to the PTs, is the Market Data message. That's because of the non-anonymous book where it is reported the identity code of the LP owner of the quote and whether the quote is subject to the RFE

7 FIX MESSAGES FOR BOTH LPS AND PRICE TAKERS

This section lists the FIX messages which are meant to be used by both the two categories of market participants: Liquidity Providers and Price Takers.

The complete list of the supported messages among with a description of their workflows are detailed in the document *FIX Messages Requirements Trading and Drop Copy HiMTF – Certificates*.

The Fix messages intended for both the LPs and the PTs are the followings:

- Trading Application Level Messages:
  - Execution Report (Type 8)
- Market Reference Data Application Messages:
  - Security Definition Request (type c)
  - Security Definition (type d)
  - Security Status Request (type e)
  - Security Status (type f)
  - Market Data Request (type V)
  - Market Data - Snapshot /Full Refresh (type W)

Among such messages the only related to the RFE mechanism are:

- Security Definition (type d): a new tag (RFEEnabled) specifies whether the LP can use the RFE mechanism or not for that specific financial instrument.
- Security Status (type f) (**only for LP**): as described in section 4, a new value (30 = Request For Execution) to tag (SecurityTradingStatus) has been added in order to notify to the LP any time a RFE starts or ends.
- Market Data - Snapshot /Full Refresh (type W): a tag has been added to notify to both LPs and PTs whether the quote in the book is subject to the RFE or it is firm.

In the following the excerpts of the document *FIX Messages Requirements Trading and Drop Copy HiMTF – Certificates* related to RFE and to Security Definition and Market Data - Snapshot /Full Refresh messages.

Security Definition (type d)

The following Tag of the Security Definition (type d) message indicates to market participants whether the LP is using the RFE mechanism.

Tag	Field Name	Content	Data Type	Req
4000	RFEEnabled	Specifies whether the liquidity provider can quote with the RFE indicator set to subject or not. Possible values: - 0 = No - 1 = Yes	Char	N

Market Data - Snapshot / Full Refresh Sent when there is a change in the Order Book

The following Tags of the Market Data - Snapshot / Full Refresh Sent message indicate the identity code of the LP owner of the quote and whether the quote is subject to the RFE.

Tag	Field Name	Content	Data Type	Req
Component Block<Parties>				
453	NoPartyIDs	Number of PartyID (448), PartyIDSource (447), and PartyRole (452) entries.	Integer	N
->448	PartyID	Party identifier/code. See PartyIDSource (447) and PartyRole (452). The PartyID can contain a generic string only if PartyRole = 3 (ClientID). In this case, PartyIDSource must be D (Custom Code). For the other values of PartyIDSource, the PartyID must contain a number (number 0,1,2,3 are currently reserved for NoClient, ALGO, PNAL and CLIENT). Note that if PartyRole = 3 or 5, the Party Identifier must be between 0 and 4294967295	String (32)	N
->447	PartyIDSource	Identifies class or source of the PartyID (448) value • D = Proprietary/Custom code • M = Algorithm Short Code • N = Natural Person Short Code Requested for MiFID II requirements.	Char	N
->452	PartyRole	Identifies the type or role of the PartyID Valid Value • 3 = ClientID • 5 = Investor ID (the Investment Decision Maker) 12 = Executing Trader (the Executing Decision Maker)	Integer	N
End Component Block<Parties>				
4002	IsTradable	Possible values: • A = Automatic (the quote is firm) • M= Manual (the quote is subject)	Char	Y

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