



# **Kazakhstan Stock Exchange Fix protocol specifications for Derivatives market**

**version 1.11.0**

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## History of changes

| Date       | Version | Changes  |
|------------|---------|--|
| 26.04.2022 | 1.11.0  | <p>Changes applied:</p> <ul style="list-style-type: none"><li>• Technical information like '\$XX\$' is no longer broadcast in the first four characters of the 'SecondaryClOrdID' field in the FIX gateway and in the FIX Drop Copy service. Now the user's comment specified when adding an order is broadcast without changes in the FIX protocol.</li><li>• In the '2.9. Other fields' section, description of the 'Flags' field was changed.</li><li>• The 'Flags' (tag 20008) field is now broadcast in the 'Execution Report' message for trades in the FIX gateway and in the all 'Execution Report' messages in the FIX Drop Copy service.</li></ul> |

# 1. Introduction

## 1.1. Document purpose

The document below describes the protocol for interaction between the FIX Gate application and client trading systems. The description is based on the standard FIX protocol (Financial Information Exchange, <https://www.fixtrading.org>, version 4.4) specification. The specification does not contain neither technical nor administrative details on network connection or security protection methods.

## 1.2. General description

FIX Gate is a server application which provides availability for user applications such as robots, terminals, technical analysis systems, etc. to connect to the exchange trading sessions using the FIX 4.4 protocol. The protocol consists of transport, session and application layers.

The transport layer defines rules of: a) transferring data as set of messages, b) composing message as set of fields, c) composing fields using field ID and field value. The transport layer description is a part of FIX 4.4 specification, therefore, it is not listed in this specification.

The session layer provides identification of each participant as well as guaranteed delivery and message consistent processing, connection status control and session recovery in case of a failure. This specification contains a brief description of the session layer protocol in order to cover certain parameters needed for establishing connection to FIX Gate.

This specification is based upon application layer protocol description, which defines rules of trading process.

## 2. Description of fields and their values

There are many messages containing the same field sets, for example, the 'Standard Header' and 'Standard Trailer' fields which contain some service information. Some of such field sets are described below:

- **Tag** – the unique field ID, used for generating a FIX message.
- **Field** – the field name, not used for generating FIX messages and described for your reference only.
- **Presence** – a field attribute: specifies whether the field in message is mandatory or non-mandatory.
  - Y - mandatory field;
  - N - non-mandatory field;
  - C - mandatory, if meets the condition (see 'Details').
- **Type** - field type.
- **Details** – detailed description of the field.
- **Allowable values** - additional limitations.

The "\*" symbol - flag of difference from the standard FIX protocol.

### 2.1. Data types

Within the protocol, the following data types are used:

| Type         | Details   |
|--------------|---|
| char         | Single character value, can include any alphanumeric character or punctuation except the delimiter. All char fields are case sensitive (i.e. m != M).   |
| String       | Alpha-numeric free format strings, can include any character or punctuation except the delimiter. All char fields are case sensitive (i.e. morstatt != Morstatt).   |
| float        | Sequence of digits with optional decimal point and sign character (ASCII characters "-", "0" - "9" and "."); the absence of the decimal point within the string will be interpreted as the float representation of an integer value. The number of decimal places used should be a factor of business/market needs and mutual agreement between counterparties. Note that float values may contain leading zeros (e.g. "00023.23" = "23.23") and may contain or omit trailing zeros after the decimal point (e.g. "23.0" = "23.0000" = "23" = "23."). |
| Price16.5    | Float field representing a price. The number of significant digits is sixteen. The number of decimal places is five.  |
| Int          | Sequence of digits without commas or decimals and optional sign character (ASCII characters "-" and "0" - "9"). The sign character utilizes one byte (i.e. positive int is "99999" while negative int is "-99999"). Note that int values may contain leading zeros (e.g. "00023" = "23"). Examples: 723 in field 21 would be mapped int as [21=723], -723 in field 12 would be mapped int as [12=-723].   |
| NumInGroup   | Int field representing the number of entries in a repeating group. Value must be positive.  |
| Int32        | Integer signed, 4 bytes.  |
| Int64        | Integer signed, 8 bytes.  |
| StringN      | String of symbols with fixed length.  |
| UTCTimestamp | Time/date combination represented in UTC (Universal Time Coordinated) in YYYYMMDD-HH:MM:SS.sss (milliseconds) or YYYYMMDD-HH:MM:SS.ssssssss (nanoseconds) format.   |
| SeqNum       | Int32 field representing a message sequence number. Value must be positive.   |
| Boolean      | Char field containing one of two values: 'Y' = True/Yes, 'N' = False/No.  |
| LocalMktDate | Date of Local Market (vs. UTC) in YYYYMMDD format. Valid values: YYYY = 0000-9999, MM = 01-12, DD = 01-31.  |

### 2.2. Standard Header group

The standard header contained in every message contains.

| Tag | Field name  | Mandatory | Type     | Details   | Allowable values |
|-----|-------------|-----------|----------|---|------------------|
| 8   | BeginString | Y         | String7  | Specifies message start and protocol version.                     | "FIX.4.4"        |
| 9   | BodyLength  | Y         | Length   | Message body length. Calculated in accordance with the standards. |                  |
| 35  | MsgType     | Y         | String10 | The MsgType ID which is unique for every message.                 |                  |

| Tag | Field name      | Mandatory | Type         | Details   | Allowable values |
|-----|-----------------|-----------|--------------|---|------------------|
| 49  | SenderCompID    | Y         | String64     | Sender ID. The allowable values are specified by the exchange individually for every trading firm (broker firm).  |                  |
| 56  | TargetCompID    | Y         | String       | Recipient ID. (FIX-gate ID).  |                  |
| 34  | MsgSeqNum       | Y         | SeqNum       | Message sequential number.  |                  |
| 52  | SendingTime     | Y         | UTCTimestamp | Message sending time.   |                  |
| 122 | OrigSendingTime | N*        | UTCTimestamp | Original message transmission time when resending messages in reply to resend request (message Resend Request (2)), in UTC. Mandatory if a message is sent in reply to resend request (message Resend Request (2)). |                  |
| 97  | PossResend      | N         | Boolean      | Indicates the message containing some data which had been already sent with another sequential number.  |                  |
| 43  | PossDupFlag     | N         | Boolean      | Indicates the allowance for resending message using the same sequential number.   |                  |

## 2.3. Standard Trailer group

The standard trailer (end) which every message contains.

| Tag | Field name | Mandatory | Type    | Details   |
|-----|------------|-----------|---------|---|
| 10  | Checksum   | Y         | String3 | Message checksum. For calculation method description see FIX, Volume 2: 'Checksum Calculation'. |

## 2.4. Order Qty Data group

The group contains some quantity data.

| Tag | Field name | Type  | Detail                     | Allowable values |
|-----|------------|-------|----------------------------|------------------|
| 38  | OrderQty   | Int64 | Instrument units quantity. | !=0              |

The 'OrderQty', 'LeavesQty' and 'LastQty' fields are the number of contracts for futures and options.

## 2.5. Parties group

The optional group 'Parties' contains the following values:

- Counterparty code, in case of negotiated order;
- Brokerage Firm code, in case of adding order with a Clearing Firm login.

The fields order is fixed.

| Tag    | Field name    | Type       | Details                     | Allowable values  |
|--------|---------------|------------|-----------------------------|---|
| 453    | NoPartyIDs    | NumInGroup | Elements quantity in block. | Must be >= 1.   |
| => 448 | PartyID       | String64   | Counterparty ID             | <ul style="list-style-type: none"> <li>• 5-letter participant code</li> <li>• Client login in SPECTRA</li> <li>• BrokerCode</li> </ul>                      |
| =>447  | PartyIDSource | char       | PartyID source type         | "C", Generally accepted market participant identifier   |
| =>452  | PartyRole     | Int32      | ID type.                    | <ul style="list-style-type: none"> <li>• "1" (Executing Firm) - 5-letter order's owner code</li> <li>• "3" (Client ID) - client login in SPECTRA</li> </ul> |

| Tag | Field name | Type | Details | Allowable values  |
|-----|------------|------|---------|---|
|     |            |      |         | <ul style="list-style-type: none"> <li>"7" (EnteringFirm) - BrokerCode, used for adding orders via CF level logins.</li> <li>"17" (Contra Firm) - 5-letter counterparty code, used for adding negotiated orders</li> <li>"18" (Contra Clearing Firm) - counterparty firm SPECTRA ID in the OTC order</li> </ul> |

## 2.6. Instrument group

The group contains instruments parameters.

| Tag | Field name | Type     | Details   | Allowable values   |
|-----|------------|----------|---|--|
| 55  | Symbol     | String25 | Instrument symbol ID.                                 | Allowable codes are defined by the Exchange. Clients can transmit both 'shorts_isin' and 'isin' instrument codes in messages. The 'Execution Report' message sent via the gateway contains the instrument ID received from client. An 'Execution Report' message sent in reply to 'Order Status Request' contains 'N/A' in its field 'Symbol'. |
| 461 | CFICode    | String6  | Instrument class according to the ISO-10962 standard. | • FXXXXX – futures   |

## 2.7. MiscFeesGrp\* group

The group contains fee data.

| Tag    | Field name   | Type       | Details                      | Allowable values    |
|--------|--------------|------------|------------------------------|---------------------|
| 136    | NoMiscFees*  | NumInGroup | Number of elements in block. | Must be = 1.        |
| => 137 | MiscFeeAmt*  | Price16.5  | Fee amount.                  |                     |
| => 139 | MiscFeeType* | Int32      | Fee type.                    | "4" (Exchange Fees) |

## 2.8. Display Instruction group

Contains parameters that are added to the iceberg order. FIX Gate determines an iceberg order by the presence of this group of parameters in the message **New Order Single**.

| Tag   | Field name         | Type  | Detail   | Allowable values   |
|-------|--------------------|-------|--|--|
| 1138  | DisplayQty         | Int64 | The number of instrument units in the constant component of the volume of the pop-up (visible part) iceberg order. | This parameter cannot be larger than the entire iceberg. A disclose volume cannot be less than the minimum lot for this instrument (values are published on the exchange website). |
| 20036 | DisplayVarianceQty | Int64 | The value of the random deviation of the volume of the pop-up part of the iceberg order.                           | The parameter value can be from zero to the value published on the exchange website.   |
| 1084  | DisplayMethod      | char  | Type of pop up.  | = 3 - Random (randomize value).  |

## 2.9. Other fields

Most of the fields meets the FIX specification. There are some of the supported fix-messages fields below. The 'Allowable values' column shows supported range of values according to the FIX protocol specification. If a field is absent in the table, please follow the FIX4.4 directives.

| Tag | Field name | Details                      | Allowable values  |
|-----|------------|------------------------------|---|
| 11  | ClOrdID    | User ID of the sent message. | Any string with unique ID for every 'SenderCompID'.   |
| 39  | OrdStatus  | Order status.                | <ul style="list-style-type: none"> <li>'0' New</li> <li>'1' Partially filled</li> <li>'2' Filled</li> </ul> |

| Tag | Field name          | Details   | Allowable values  |
|-----|---------------------|---|---|
|     |                     |   | <ul style="list-style-type: none"> <li>'4' Canceled</li> <li>'5' Replaced</li> <li>'6' Pending Cancel</li> <li>'8' Rejected</li> <li>'A' Pending New</li> <li>"C" Expired</li> <li>"E" Pending Replace</li> </ul>   |
| 44  | Price               | Price   | Decimal number  |
| 54  | Side                | Direction   | <ul style="list-style-type: none"> <li>'1' - Buy</li> <li>'2' - Sell</li> </ul>   |
| 59  | TimeInForce         | Order type  | <ul style="list-style-type: none"> <li>'0' Day –Quote order (remains in queue after being partially matched).</li> <li>'3' IOC – Immediate-or-Cancel order (cancelled if not immediately executed).</li> <li>'4' FOK – Fill-or-Kill order.</li> <li>'6' GTD – Good-to-Day order</li> </ul>  |
| 102 | CxlRejReason        | Reason for cancelling/modifying request rejection.                              | <ul style="list-style-type: none"> <li>'0' Too late to cancel - The order has been already executed.</li> <li>'1' Unknown order - Order not found.</li> <li>'3' Order already in Pending Cancel or Pending Replace status.</li> <li>'99' Other – Other reason.</li> </ul>   |
| 103 | OrdRejReason        | Reason for request rejection. Specified for 'Execution Report' with ExecType=8. | <ul style="list-style-type: none"> <li>'1' Unknown symbol - Instrument not found.</li> <li>'2' Exchange closed - Trading session is over.</li> <li>'3' Order exceeds limit - Order exceeds the limits set.</li> <li>'5' Unknown order - Order not found.</li> <li>'6' Duplicate Order - Order ID already exists.</li> <li>'99' Other - Other reason.</li> </ul> |
| 150 | ExecType            | Order status report type (Execution Report).                                    | <ul style="list-style-type: none"> <li>'0' New</li> <li>'3' Done for day</li> <li>'4' Canceled</li> <li>'5' Replaced</li> <li>'6' Pending Cancel</li> <li>'8' Rejected</li> <li>'C' Expired</li> <li>'E' Pending Replace</li> <li>'F' Trade</li> <li>'I' Order Status</li> </ul>  |
| 198 | SecondaryOrderID    | Additional order ID in the SPECTRA system.                                      | String: <ul style="list-style-type: none"> <li>'F:Order ID in SPECTRA' - for futures instruments.</li> </ul>  |
| 373 | SessionRejectReason | Message reject reason ID for the session layer.                                 | <ul style="list-style-type: none"> <li>'0' – Incorrect tag.</li> </ul>  |



| Tag   | Field name             | Details  | Allowable values   |
|-------|------------------------|--|--|
|       |                        |  | <ul style="list-style-type: none"> <li>'1' – Mandatory field missing.</li> <li>'2' – Undefined tag for this message type.</li> <li>'3' – Undefined tag.</li> <li>'4' – Value missing for this tag.</li> <li>'5' – Incorrect value for this tag (value limits exceeded).</li> <li>'6' – Incorrect data format for this value.</li> <li>'7' – Decoding error.</li> <li>'8' – Signature error.</li> <li>'9' – 'CompID' error.</li> <li>'10' – 'SendingTime' accuracy error.</li> <li>'11' – Incorrect message type.</li> <li>'12' – XML validation error.</li> <li>'13' – Tag already exists.</li> <li>'14' – Tags definition order error.</li> <li>'15' – Group fields definition order error.</li> <li>'16' – Group elements number calculation error ('NumInGroup').</li> <li>'17' – Non-data field contains separator.</li> <li>'99' - Other.</li> <li>'7100' – Messages limit exceeded.</li> <li>'7101' – System error.</li> </ul> |
| 434   | CxlRejResponseTo       | Specifies request type where 'Order Cancel Reject' is reply. | <ul style="list-style-type: none"> <li>'1' – Order Cancel Request.</li> <li>'2' – Order Cancel/Replace Request.</li> </ul>   |
| 530   | MassCancelRequestType  | Mass cancel request type.                                    | <ul style="list-style-type: none"> <li>'1' – Cancel all orders for certain instrument.</li> <li>'8' or '9' – Cancel all orders in the certain market segment.</li> </ul>   |
| 531   | MassCancelResponse     | Trading system mass cancel response.                         | <ul style="list-style-type: none"> <li>'0' – Mass cancel request is rejected.</li> <li>'1' - All orders for certain instrument are cancelled.</li> <li>'8' or '9' – All orders in the certain market segment are cancelled.</li> </ul>   |
| 532   | MassCancelRejectReason | Mass cancel reject reason.                                   | '99' Other – Other reason.   |
| 1300  | MarketSegmentID*       | Market segment.  | 'F' – Futures.   |
| 20008 | Flags                  | Operation flags.   | <p>Bits of the field 'Flags' in message '4.1.6. Execution Report':</p> <ul style="list-style-type: none"> <li>0x1 – Quote</li> <li>0x2 – Counter</li> <li>0x4 – OTC order.</li> <li>0x8 – Position transfer trade.</li> <li>0x10 - Client collateral was not checked while adding order.</li> <li>0x80000 – Fill-or-Kill order.</li> <li>0x100000 – The record is a result of moving the order.</li> </ul>   |

| Tag   | Field name | Details   | Allowable values   |
|-------|------------|---|--|
|       |            |   | <ul style="list-style-type: none"> <li>• 0x200000 – The record is a result of cancelling the order.</li> <li>• 0x400000 – The record is a result of mass canceling orders.</li> <li>• 0x2000000 - Clearing session trade.</li> <li>• 0x4000000 – Negotiated trade.</li> <li>• 0x20000000 – The record is a result of order last leg deletion due to a cross-trade.</li> <li>• 0x100000000 - The record results from cancelling an order via 'Cancel on Disconnect' service.</li> <li>• 0x2000000000 - The record results from cancelling an order via 'User Kill Switch' service.</li> <li>• 0x10000000000 - The record are formed in the process of liquidation netting.</li> <li>• 0x20000000000 – The active side in the trade. The order that led to the trade when added to the order-book.</li> <li>• 0x40000000000 – The passive side in the trade. The order from the order-book involved in the trade.</li> <li>• 0x800000000000 - Iceberg order.</li> <li>• 0x2000000000000 - Disclosing of iceberg order.</li> </ul> <p>Bits of the field 'Flags' in message '4.1.3. Order Mass Cancel Request':</p> <ul style="list-style-type: none"> <li>• 0x10 – System orders.</li> <li>• 0x20 – OTC orders.</li> <li>• 0x40 – All.</li> </ul> |
| 20035 | NccRequest | Request to CCP for performing trades with Trading Member. | <ul style="list-style-type: none"> <li>• 'N' – Market order / trade.</li> </ul>  |

## 3. Session layer protocol

Session layer protocol which provides parties authentication, guaranteed messages delivery and sequential message processing, connection status and session recovery in case of any failure.

### 3.1. Supported messages

- **Logon** - Initiates session.
- **Logout** - Initiates or confirms session termination.
- **Heartbeat** - Ensures that session is up and running.
- **Test Request** - Used as part of session establishment procedure, must be replied with specific Heartbeat message.
- **Reject** – Informs party about incorrect or unknown message.
- **Resend Request** - Informs party that messages in particular range must be resent.
- **Sequence Reset** - Used to skip administrative messages on resend – 'Gap Fill mode'. Also used to reset messages sequence – 'Reset mode'.

All the messages can be sent in both directions.

#### 3.1.1. Logon

Initiates or confirms session start. This message must be the first in every session.

| Tag               | Field name      | Mandatory | Type    | Details  |
|-------------------|-----------------|-----------|---------|--|
| <'Header' group>  |                 | Y         |         | Message type 'A'.  |
| 98                | EncryptMethod   | Y         | Int     | Encryption method. Must be set to '0' – NONE_OTHER – no message encryption.. |
| 108               | HeartBtInt      | Y         | Int     | Heartbeat messages sending interval.   |
| 141               | ResetSeqNumFlag | N         | Boolean | Reset messages sequence for both parties.                                    |
| <'Trailer' group> |                 | Y         |         |  |

#### 3.1.2. Logout

Initiates or confirms session termination.

| Tag               | Field name | Mandatory | Type   | Details                        |
|-------------------|------------|-----------|--------|--------------------------------|
| <'Header' group>  |            | Y         |        | Message type '5'.              |
| 58                | Text       | N         | String | Reason for session termination |
| <'Trailer' group> |            | Y         |        |                                |

#### 3.1.3. Heartbeat

Ensures that session is up and running. If the 'Heartbeat' message is sent in response to the 'Test Request' message, the 'TestReqID' field must contain the 'Test Request' message ID.

| Tag               | Field name | Mandatory | Type   | Details  |
|-------------------|------------|-----------|--------|--|
| <'Header' group>  |            | Y         |        | Message type '0'.  |
| 112               | TestReqID  | N         | String | Mandatory if sent in response to the 'Test Request' message. |
| <'Trailer' group> |            | Y         |        |  |

#### 3.1.4. Test Request

The message calls/initiates/requests the 'Heartbeat' message from the opposite party..

| Tag              | Field name | Mandatory | Type | Details           |
|------------------|------------|-----------|------|-------------------|
| <'Header' group> |            | Y         |      | Message type '1'. |

| Tag               | Field name | Mandatory | Type   | Details  |
|-------------------|------------|-----------|--------|--|
| 112               | TestReqID  | Y         | String | Request message ID, returned in the 'Heartbeat' message. |
| <'Trailer' group> |            | Y         |        |  |

### 3.1.5. Reject

The reject message should be issued when a message is received but cannot be properly processed due to a session-level rule violation. An example of when a reject may be appropriate would be the receipt of a message with invalid basic data (e.g. MsgType=&) which successfully passes CheckSum and BodyLength checks.

| Tag               | Field name          | Mandatory | Type   | Details                   |
|-------------------|---------------------|-----------|--------|---------------------------|
| <'Header' group>  |                     | Y         |        | Message type '3'.         |
| 45                | RefSeqNum           | Y         | SeqNum | Rejected message number.  |
| 371               | RefTagID            | N         | Int    | Invalid field number.     |
| 372               | RefMsgType          | N         | String | Rejected message type.    |
| 373               | SessionRejectReason | N         | Int    | Rejection reason ID.      |
| 58                | Text                | N         | String | Rejection reason details. |
| <'Trailer' group> |                     | Y         |        |                           |

### 3.1.6. Resend Request

The message initiates resending of a particular message range. Use 'BeginSeqNo=EndSeqNo' for a single message resending and 'EndSeqNo=0' for a range of messages starting from the particular one (where '0' indicates infinity).

| Tag               | Field name | Mandatory | Type   | Details                                |
|-------------------|------------|-----------|--------|--|
| <'Header' group>  |            | Y         |        | Message type '2'.                      |
| 7                 | BeginSeqNo | Y         | SeqNum | Number of the first message to resend. |
| 16                | EndSeqNo   | Y         | SeqNum | Number of the last message to resend.  |
| <'Trailer' group> |            | Y         |        |  |

### 3.1.7. Sequence Reset

Used to skip administrative messages on resend – 'Gap Fill mode'. Also used to reset messages sequence – 'Reset mode'.

| Tag               | Field name  | Mandatory | Type    | Details   |
|-------------------|-------------|-----------|---------|---|
| <'Header' group>  |             | Y         |         | Message type '4'.   |
| 123               | GapFillFlag | N         | Boolean | Mode: <ul style="list-style-type: none"> <li>'Y' - the 'Gap Fill' mode – the 'MsgSeqNum' field is used. If there are some administrative messages to be skipped, then the 'Sequence Reset' message is used for responding to the 'Resend Request' message.</li> <li>'N' - the 'Reset' mode - Messages sequence reset mode.</li> </ul> |
| 16                | NewSeqNo    | Y         | SeqNum  | New sequence number.  |
| <'Trailer' group> |             | Y         |         |   |

## 3.2. Session establishing and termination scenarios

### 3.2.1. Session establishing and termination

For establishing connection to FIX Gate a client must send the 'Logon' message including its 'SenderCompID'. If the 'Logon' message is valid and the sender was successfully authorized then FIX Gate sends the 'Logon' message in return, confirming that the connection has been successfully established.

For correct session termination, client must send the 'Logout' message to FIX Gate and receive one in return. Any other ways of session closing/termination are incorrect and may lead to an error.

Also, before sending the 'Logout' message it is recommended to send the 'Test Request' message to FIX Gate and receive the 'Heartbeat' message in return. This may help to avoid missing and/or lost messages.

When a connection has been established via FIX Gate, it is recommended to wait 30 seconds after closing the previous session before sending a new Logon message. Otherwise, the connection will be terminated by FIX Gate without any additional notifications.

### 3.2.2. Message resending request

During the initialization process or due to unexpected connection break there may be numeration error when the incoming message sequence number is greater than expected (while the common message number is always greater by 1 than that of the last message in log). In this case, a client must request the retransmission via sending the 'Resend Request' message including sequence number range for the missing messages (the 'BeginSeqNo', 'EndSeqNo' fields values).

### 3.2.3. Session status monitoring

The 'Heartbeat' message is used to monitor the FIX session status as well as gaps in messages sequence numbers in case of missing some incoming messages. In order to do this, the client application generates the 'Heartbeat' messages and sends it to FIX Gate in accordance with time interval specified by the 'HeartBtInt' field value in the 'Logon' Message.

If there is no reply from FIX Gate within the specified time interval (the 'HeartBtInt' field value + transmission time), the client should generate and send the 'Test Request' message to Fix Gate. In case of no reply within the specified time interval the client should reestablish connection to the FIX Gate.

### 3.2.4. Resetting message sequence

The following methods are used to reset message sequence:

- Sending the 'Logon' message with the 'ResetSeqNumFlag' flag.
- Sending the 'Sequence Reset' in the 'Reset mode' mode.
- By schedule. For example, message sequence can be automatically reset by the Exchange before starting a trading session.

After message sequence was reset, there is no more option to resend any message via the 'Resend Request' procedure.

### 3.2.5. Session recovery after failure

In order to recover session after failure, the client should send the 'Logon' message which includes the sequence number 1 more than that of the last message in log (the 'MsgSeqNum' field). If the incoming 'Logon' message sequence number is greater than expected, then the client must request the retransmission via sending the 'Resend Request' message including sequence number range for the missing messages.

If the primary FIX gate server is unreachable, the client is recommended to establish connection to the secondary server to continue working according to the rules stated above.

The primary and secondary servers do not synchronize message sequence numbers, so that a client will not be able to receive messages starting from the last received one once they have switched from one server to another. When trying to connect to another server, the client will receive a message with its sequence number less than expected. In this case, it is recommended to reset the message sequence number counter.

## 4. Trading interaction

### 4.1. Supported messages

- **New Order Single** – Request for generating a new trading order, sent from client to the FIX Gate server.
- **Order Cancel Request** – Order cancel request, sent from client to the FIX Gate server.
- **Order Mass Cancel Request** – Order mass cancel request, sent from client to the FIX Gate server.
- **Order Cancel/Replace Request** – Order replace request, sent from client to the FIX Gate server.
- **Order Status Request** – Order current status request, sent from client to the FIX Gate server.
- **Execution Report** – Order status data, sent from the FIX Gate server to client.
- **Order Cancel Reject** – Order cancel reject reason, sent from the FIX Gate server to client.
- **Order Mass Cancel Report** – Reply to the 'Order Mass Cancel Request' message, sent from the FIX Gate server to client.

#### 4.1.1. New Order Single

Adding new order for any type of instruments.

| Tag              | Field name         | Mandatory | Type         | Details  |
|------------------|--------------------|-----------|--------------|--|
| <'Header' group> |                    | Y         |              | Message type 'D'.  |
| 60               | TransactTime       | Y         | UTCTimestamp | Order sending time (UTC). Date format: YYYYMM-MDD-HH:MM:SS.ssssssss  |
| 11               | ClOrdID            | Y         | String20     | User ID of the order.  |
| 583              | ClOrdLinkID        | N         | Int32        | External ID.   |
| 20021            | MatchRef           | N         | String10     | Client ID of negotiated order. Client IDs are used to securely match negotiated orders.  |
| 40               | OrdType            | Y         | char         | Order type. Supported order type: '2' – Limit  |
| 55               | Symbol             | Y         | String25     | Instrument symbol ID.  |
| 461              | CFICode            | C*        | String6      | Instrument class according to the ISO-10962 standard.<br>• FXXXXX – futures  |
| 1                | Account            | Y*        | String3      | 3-symbol client code.  |
| 59               | TimeInForce        | N         | char         | Order type. If the field is missing, then its value is set to '0' (quote order).   |
| 54               | Side               | Y         | char         | Order direction.   |
| 1138             | DisplayQty         | C         | Int64        | The number of instrument units in the constant component of the volume of the pop-up (visible part) iceberg order. It is required if there are 'DisplayVarianceQty' and 'DisplayMethod' fields in the message. |
| 20036            | DisplayVarianceQty | C         | Int64        | The value of the random deviation of the volume of the pop-up part of the iceberg order. It is required if there are 'DisplayQty' and 'DisplayMethod' fields in the message.                                   |
| 1084             | DisplayMethod      | C         | char         | = 3 - Random (randomize value). It is required if there are 'DisplayQty' and 'DisplayVarianceQty' fields in the message.   |
| 38               | OrderQty           | Y*        | Int64        | Instrument units quantity (for iceberg order - instrument units quantity for the entire order).  |
| 44               | Price              | C         | Price16.5    | Order price. Mandatory for the type 2 orders ('OrdType'=2 (Limit)).  |
| 526              | SecondaryClOrdID   | N         | String20     | Comment field, added to orders and trades.   |
| 453              | NoPartyIDs         | N         | NumInGroup   | "1" or "2"   |
| => 448           | PartyID            | C         | String64     | Counterparty ID:<br><br>• BrokerCode, used for adding orders via CF level logins.<br><br>• 5-letter counterparty code, used for adding negotiated orders.<br><br>Mandatory if NoPartyIDs >= 1.                 |
| => 447           | PartyIDSource      | C         | char         | "C" (Generally accepted market participant identifier). Mandatory if NoPartyIDs >= 1.  |
| => 452           | PartyRole          | C         | Int32        | ID type:   |

| Tag               | Field name       | Mandatory | Type         | Details  |
|-------------------|------------------|-----------|--------------|--|
|                   |                  |           |              | <ul style="list-style-type: none"> <li>"7" (EnteringFirm) - BrokerCode, used for adding orders via CF level logins.</li> <li>"17" (Contra Firm) - 5-letter counterparty code, used for adding negotiated orders</li> </ul> Mandatory if NoPartyIDs >= 1. |
| 432               | ExpireDate       | C         | LocalMktDate | Order expiration date. Date format: YYYYMMDD. Mandatory for the orders with 'TimeInForce'=6 (GTD).   |
| 1300              | MarketSegmentID* | N         | char         | Market segment the order is specified for. If missing, then the market segment is specified in accordance with 'CFICode'.  |
| 20035             | NccRequest       | N         | Boolean      | Always 'N'.  |
| <'Trailer' group> |                  | Y         |              |  |

#### 4.1.2. Order Cancel Request

| Tag               | Field name    | Mandatory | Type         | Details  |
|-------------------|---------------|-----------|--------------|--|
| <'Header' group>  |               | Y         |              | Message type 'F'.  |
| 453               | NoPartyIDs    | N         | NumInGroup   | "1"  |
| => 448            | PartyID       | C         | String64     | BrokerCode. Mandatory if NoPartyIDs = 1.   |
| => 447            | PartyIDSource | C         | char         | "C" (Generally accepted market participant identifier). Mandatory if NoPartyIDs = 1.                                     |
| => 452            | PartyRole     | C         | Int32        | "7" (EnteringFirm). Mandatory if NoPartyIDs = 1.   |
| 11                | ClOrdID       | Y         | String20     | User ID of the order.  |
| 37                | OrderID       | C*        | Int64        | Order ID to cancel in SPECTRA. Allowable values: >0. Mandatory, if the 'OrigClOrdID' field is missing.                   |
| 41                | OrigClOrdID   | C*        | String20     | User ID of the order to cancel. Mandatory, if the 'OrderID' field is missing.  |
| 55                | Symbol        | Y         | String25     | Instrument symbol ID.  |
| 461               | CFICode       | C*        | String6      | Instrument class according to the ISO-10962 standard. <ul style="list-style-type: none"> <li>FXXXXX – futures</li> </ul> |
| 54                | Side          | Y         | char         | Order direction.   |
| 60                | TransactTime  | Y         | UTCTimestamp | Order sending time (UTC). Date format: YYYYMMDD-HH:MM:SS.ssssssss  |
| 20035             | NccRequest    | N         | Boolean      | Always 'N'.  |
| 38                | OrderQty      | Y*        | Int64        | Instrument units quantity.   |
| <'Trailer' group> |               | Y         |              |  |

#### 4.1.3. Order Mass Cancel Request

| Tag              | Field name             | Mandatory | Type       | Details  |
|------------------|------------------------|-----------|------------|--|
| <'Header' group> |                        | Y         |            | Message type 'q'.  |
| 453              | NoPartyIDs             | N         | NumInGroup | "1"  |
| => 448           | PartyID                | C         | String64   | BrokerCode. Mandatory if NoPartyIDs = 1.   |
| => 447           | PartyIDSource          | C         | char       | "C" (Generally accepted market participant identifier). Mandatory if NoPartyIDs = 1.   |
| => 452           | PartyRole              | C         | Int32      | "7" (EnteringFirm). Mandatory if NoPartyIDs = 1.   |
| 11               | ClOrdID                | Y         | String20   | User ID of the order.  |
| 583              | ClOrdLinkID            | N         | Int32      | External ID.   |
| 530              | MassCancelRequest-Type | Y         | char       | Mass cancel request type.  |
| 1300             | MarketSegmentID        | C         | char       | Market segment to search orders to cancel. Mandatory if MassCancelRequestType = 1, or MassCancelRequestType = 8, or MassCancelRequestType = 9. |

| Tag               | Field name   | Mandatory | Type         | Details   |
|-------------------|--------------|-----------|--------------|---|
| 54                | Side         | N         | char         | Order type by direction: <ul style="list-style-type: none"> <li>• '1' – Buy orders.</li> <li>• '2' – Sell orders.</li> <li>• 'Y' – All orders.</li> </ul> If the field is missing in the incoming message, all orders will be canceled ('Y' value).   |
| 1                 | Account*     | C         | String3      | Client account ID. If the 'Account' parameter is not specified or equal to '%%%', then all orders for all client accounts will be canceled.<br><br>It is reasonable to set for BF and/or CF logins only.  |
| 20008             | Flags        | N         | Int32        | Whether to cancel orders on their negotiated sign: <ul style="list-style-type: none"> <li>• 0x10 - System orders</li> <li>• 0x20 - OTC orders</li> <li>• 0x40 - All</li> </ul> If there is no field 'Flags' in the input message, FIX Gate transmit the value '0x40 - All' into the trading system. |
| 55                | Symbol       | C*        | String25     | Instrument symbol ID. Mandatory, if 'MassCancelRequestType'=1.  |
| 60                | TransactTime | Y         | UTCTimestamp | Order sending time (UTC). Date format: YYYYMM-MDD-HH:MM:SS.sssssssss  |
| <'Trailer' group> |              | Y         |              |   |

You can delete only your orders from the trading system. Therefore, all the variants described below for mass cancelling of orders are possible only within the framework of a certain brokerage firm code. Then other conditions for the selection of orders are carried out sequentially.

Mass cancelling orders is possible according to the following parameters:

- by external order identifier in the user system. If the **ClOrdLinkId** field is in the message and contains a value other than zero, then all orders with this number are removed. In this case, the values of the **Side**, **Flags** and **Symbol** parameters are ignored;
- by a specific instrument or by a specific market segment:
  - **MassCancelRequestType=1** - cancellation of orders for a specific instrument code. In this case, the message must necessarily contain the code of the instrument by which orders are deleted;
  - **MassCancelRequestType=8** or **MassCancelRequestType=9** - cancellation of orders in a specific market segment.

In both cases, the code of the market segment (in which orders are deleted) sets in the field **MarketSegmentID**;

- by orders directions:
  - **Side=1** – all buy orders are canceled;
  - **Side=2** – all sell orders are canceled;
  - **Side=Y** – all buy and sell orders are canceled.

If there is no **Side** field in the input message, then orders of all directions (buy and sell) are canceled by default;

- by orders type (common/ negotiated):
  - **Flags=0x10** – all common orders are canceled;
  - **Flags=0x20** – all negotiated orders are canceled;
  - **Flags=0x40** – all common and negotiated orders are canceled.

If there is no **Flags** field in the input message, then orders of all types (common and negotiated) are canceled by default;

- by client code - the specific client account for which orders should be canceled set in the **Account** field.

If the **Account** parameter is not set or is '%%%', then all orders for all clients' accounts are removed. Setting '%%%' makes sense only for BF and RF logins.



#### 4.1.4. Order Cancel/Replace Request

Order price/volume replace request.

| Tag               | Field name    | Mandatory | Type         | Details   |
|-------------------|---------------|-----------|--------------|---|
| <'Header' group>  |               | Y         |              | Message type 'G'.   |
| 453               | NoPartyIDs    | N         | NumInGroup   | "1"   |
| => 448            | PartyID       | C         | String64     | BrokerCode. Mandatory if NoPartyIDs = 1.  |
| => 447            | PartyIDSource | C         | char         | "C" (Generally accepted market participant identifier). Mandatory if NoPartyIDs = 1.                    |
| => 452            | PartyRole     | C         | Int32        | "7" (EnteringFirm). Mandatory if NoPartyIDs = 1.  |
| 11                | ClOrdID       | Y         | String20     | User ID of the price/volume replace order.  |
| 37                | OrderID       | C*        | Int64        | Order ID to replace in SPECTRA. Allowable values: >0. Mandatory, if the 'OrigClOrdID' field is missing. |
| 41                | OrigClOrdID   | C*        | String20     | User ID of the order to cancel. Mandatory, if the 'OrderID' field is missing.                           |
| 583               | ClOrdLinkID   | N         | Int32        | External ID.  |
| 38                | OrderQty      | Y*        | Int64        | New instrument quantity for the first order.  |
| 44                | Price         | C         | Price16.5    | New price for the first order. Mandatory for orders where 'OrdType'=2 (Limit).                          |
| 55                | Symbol        | Y         | String25     | Instrument symbol ID.   |
| 461               | CFIcode       | C*        | String6      | Instrument class according to the ISO-10962 standard.<br>• FXXXXX – futures                             |
| 54                | Side          | Y         | char         | Order direction.  |
| 60                | TransactTime  | Y         | UTCTimestamp | Order sending time (UTC). Date format: YYYYMM-MDD-HH:MM:SS.ssssssss                                     |
| 20035             | NccRequest    | N         | Boolean      | Always 'N'.   |
| <'Trailer' group> |               | Y         |              |   |

#### 4.1.5. Order Status Request

| Tag               | Field name     | Mandatory | Type     | Details  |
|-------------------|----------------|-----------|----------|--|
| <'Header' group>  |                | Y         |          | Message type 'H'.  |
| 11                | ClOrdID        | C*        | String20 | Client ID of the requested order. Mandatory if OrderID is missing. Allowable values: > 0.                            |
| 37                | OrderID        | C*        | Int64    | Order ID in the SPECTRA system. Mandatory if ClOrdID is missing. Allowable values: >0.                               |
| 55                | Symbol         | Y         | String25 | Instrument symbol ID.  |
| 54                | Side           | Y         | char     | Order direction.   |
| 790               | OrdStatusReqID | N         | String64 | Can be used for the status request message identification. The value is returned via the 'Execution Report' message. |
| <'Trailer' group> |                | Y         |          |  |

#### 4.1.6. Execution Report

Order status change report. The message is sent as a reply when:

- Order was successfully added;
- Order was rejected;
- Order was successfully canceled;
- Order current status was requested;
- Order current status request was rejected;
- Order was replaced;
- Multi-day order was relisted;

- Order was executed.

| Tag               | Field name            | Mandatory | Type         | Details  |
|-------------------|-----------------------|-----------|--------------|--|
| <'Header' group>  |                       | Y         |              | Message type '8'.  |
| 11                | ClOrdID               | Y*        | String20     | User ID of the order sent.   |
| 41                | OrigClOrdID           | N         | String20     | User ID of the order to be canceled/replaced.  |
| 583               | ClOrdLinkID           | N         | Int32        | External ID.   |
| 150               | ExecType              | Y         | char         | Report type.   |
| 39                | OrdStatus             | Y         | char         | Order status.  |
| 17                | ExecID                | Y         | String64     | Unique ID generated by FIX Gate for every outgoing 'Execution Report' message.   |
| 37                | OrderID               | Y         | Int64        | Order ID in SPECTRA (for iceberg order – ID of the entire order).  |
| 198               | SecondaryOrderID      | N         | String64     | Order secondary ID.  |
| 336               | TradingSessionID      | N         | Int32        | Trading session ID.  |
| 1                 | Account               | N         | String7      | 7-symbol client account code.  |
| 60                | TransactTime          | N         | UTCTimestamp | Order status changing time/Reply sending time. Date format: YYYYMM-MDD-HH:MM:SS.sss. The field is not transmitted if OrdStatus=6 (Pending Cancel) or OrdStatus=E (Pending Replace).<br><br>The field is not transmitted when "Order was rejected". |
| 55                | Symbol                | Y         | String25     | Instrument symbol ID.  |
| 54                | Side                  | Y         | char         | Direction.   |
| 44                | Price                 | C         | Price16.5    | Price. If 'ExecType'=F (Trade), then Price=0.  |
| 32                | LastQty               | C         | Int64        | Instrument quantity in trade. Specified for 'Execution Report' with 'ExecType'=F (Trade).  |
| 38                | OrderQty              | Y*        | Int64        | Instrument units quantity (for iceberg order - instrument units quantity for the entire order).  |
| 151               | LeavesQty             | Y         | Int64        | Volume left.   |
| 14                | CumQty                | Y         | Int64        | Total instrument units quantity bought or sold via the order.  |
| 6                 | AvgPx                 | Y         | Price16.5    | Trade average price via the order.   |
| 103               | OrdRejReason          | N         | Int32        | Request rejection reason. Specified for 'Execution Report' where 'ExecType'=8 (Rejected).  |
| 58                | Text                  | N         | String255    | Message text.  |
| 790               | OrdStatusReqID        | N         | String64     | Order status request ID. Specified for 'Execution Report' where 'ExecType'=I (Order Status).   |
| 526               | SecondaryClOrdID      | N         | String20     | Comment.   |
| <'Parties' group> |                       | N         |              | Used for the OTC order reports.  |
| 527               | SecondaryExecID       | N         | Int64        | Trade ID. Specified for 'Execution Report' where 'ExecType'=F (Trade).   |
| 880               | TrdMatchID            | N         | Int64        | Trade ID. Specified for 'Execution Report' where 'ExecType'=F (Trade) for multi-leg trades.  |
| 31                | LastPx                | C         | Price16.5    | Matched trade price. Specified for 'Execution Report' where 'ExecType'=F (Trade).  |
| 136               | NoMiscFees*           | N         | NumInGroup   | '1' Specified for 'Execution Report' where 'ExecType'=F (Trade).   |
| => 137            | MiscFeeAmt*           | Y         | Price16.5    | Trade fee.   |
| => 139            | MiscFeeType*          | Y         | Int32        | '4' (Exchange Fees)  |
| 432               | ExpireDate            | C         | LocalMktDate | Order expiration date. Specified for the orders with 'TimeInForce'=6 (GTD).  |
| 20008             | Flags                 | N         | Int64        | Operation flags.   |
| 40                | OrdType               | N         | char         | Order type. '2' – Limit  |
| 20018             | Revision              | N         | Int64        | Service field, replication system.<br><br>The field is not transmitted when "Order was rejected".  |
| 378               | ExecRestatementReason | N         | Int32        | Order cancellation reason. Applied when order was cancelled by the Trading System. '100' – Cancelled via Cancel on Disconnect.   |

| Tag              | Field name         | Mandatory | Type    | Details   |
|------------------|--------------------|-----------|---------|---|
| 20035            | NccRequest         | N         | Boolean | Always 'N'.   |
| 1138             | DisplayQty         | C         | Int64   | The number of instrument units in the constant component of the volume of the pop-up (visible part) iceberg order. It is broadcast for iceberg orders.  |
| 20036            | DisplayVarianceQty | C         | Int64   | The value of the random deviation of the volume of the pop-up part of the iceberg order. It is broadcast for iceberg orders.  |
| 1084             | DisplayMethod      | C         | char    | = 3 - Random (randomize value). It is broadcast for iceberg orders.   |
| 278              | MDEntryID          | C         | Int64   | The identifier of the pop-up part on the Iceberg order, assigned by the trading system. ID corresponds to the 'MDEntryID' field in the anonymous stream of orders and trades. It is broadcast for iceberg orders. |
| <Trailer' group> |                    | Y         |         |   |

#### 4.1.7. Order Cancel Reject

| Tag              | Field Name       | Mandatory | Type      | Details  |
|------------------|------------------|-----------|-----------|--|
| <Header' group>  |                  | Y         |           | Message type '9'.  |
| 37               | OrderID          | Y         | Int64     | Order ID in SPECTRA.   |
| 198              | SecondaryOrderID | N         | String64  | Secondary order ID.  |
| 11               | ClOrdID          | Y         | String20  | User ID of the order cancel command.                                       |
| 41               | OrigClOrdID      | Y         | String20  | User ID of the order to be canceled/replaced.                              |
| 39               | OrdStatus        | Y         | char      | Order current status.  |
| 434              | CxlRejResponseTo | Y         | char      | Specifies the request type which caused the 'Order Cancel Reject' message. |
| 102              | CxlRejReason     | N         | Int32     | Order cancel/replacing rejection reason.                                   |
| 58               | Text             | N         | String255 | Message text.  |
| <Trailer' group> |                  | Y         |           |  |

#### 4.1.8. Order Mass Cancel Report

Order mass cancel report (successful/ unsuccessful).

| Tag              | Field name             | Mandatory | Type      | Details  |
|------------------|------------------------|-----------|-----------|--|
| <Header' group>  |                        | Y         |           | Message type 'r'.  |
| 11               | ClOrdID                | Y*        | String20  | User ID of the order mass cancellation request.  |
| 37               | OrderID                | Y         | String64  | Unique ID generated by FIX Gate for every outgoing 'Order Mass Cancel Report' message. |
| 530              | MassCancelRequestType  | Y         | char      | Mass cancel request type.  |
| 531              | MassCancelResponse     | Y         | char      | Mass cancel response by the trading system.  |
| 532              | MassCancelRejectReason | C         | Int32     | Mass cancel rejection reason. Mandatory if 'MassCancelResponse'=0 (Reject).            |
| 533              | TotalAffectedOrders    | N         | Int32     | Number of orders cancelled.  |
| 58               | Text                   | N         | String255 | Message text.  |
| <Trailer' group> |                        | Y         |           |  |

### 4.2. Trading interaction scenarios

#### 4.2.1. Adding order

Most of the orders are accepted by the trading system without any additional condition.

| Step | Client         | FIX Gate   | Details   |
|------|----------------|--|---|
| 1    | NewOrderSingle |  | The client sends a new order into the trading system. |
| 2    |                | ExecutionReport,<br>ExecType=0(New),<br>OrdStatus=0(New) | The system sends the order adding confirmation.       |

| Step  | Client | FIX Gate   | Details  |
|-------|--------|--|--|
| 3...n |        | <b>ExecutionReport</b> ,<br>ExecType=F(Trade),<br>OrdStatus=2(Filled) or<br>OrdStatus=1(PartiallyFilled) | The system returns the trade parameters and its status (fully/partially filled). Therefore, the 'ExecutionReport' message containing the order status can be sent several times. |

Also, the order can be rejected by the system.

| Step | Client                | FIX Gate   | Details   |
|------|-----------------------|--|---|
| 1    | <b>NewOrderSingle</b> |  | The client sends a new order to the trading system.           |
| 2    |                       | <b>ExecutionReport</b> ,<br>ExecType=8(Rejected),<br>OrdStatus=8(Rejected) | The system rejects the order adding the reason for rejection. |

An order containing TimeInForce=3(IOC) can be completely matched, cancelled or partly matched with its leftover part cancelled.

| Step | Client                | FIX Gate  | Details  |
|------|-----------------------|---|--|
| 1    | <b>NewOrderSingle</b> |   | The client sends a new order into the trading system.  |
| 2    |                       | <b>ExecutionReport</b> ,<br>ExecType=0(New),<br>OrdStatus=0(New)      | The system sends the order adding confirmation.  |
| 3    |                       | <b>ExecutionReport</b> ,<br>ExecType=F(Trade),<br>OrdStatus=2(Filled) | The message transmits the trade parameters and indicates that the order has been completely matched. |

| Step | Client                | FIX Gate   | Details   |
|------|-----------------------|--|---|
| 1    | <b>NewOrderSingle</b> |  | The client sends a new order into the trading system.   |
| 2    |                       | <b>ExecutionReport</b> ,<br>ExecType=0(New),<br>OrdStatus=0(New)               | The system sends the order adding confirmation.   |
| 3    |                       | <b>ExecutionReport</b> ,<br>ExecType=F(Trade),<br>OrdStatus=1(PartiallyFilled) | The message transmits the trade parameters and indicates that the order is partially matched. |
| 4    |                       | <b>ExecutionReport</b> ,<br>ExecType=4(Canceled),<br>OrdStatus=4(Canceled)     | The message indicates that the order's leftover part has been cancelled.                      |

| Step | Client                | FIX Gate   | Details  |
|------|-----------------------|--|--|
| 1    | <b>NewOrderSingle</b> |  | The client sends a new order into the trading system.    |
| 2    |                       | <b>ExecutionReport</b> ,<br>ExecType=0(New),<br>OrdStatus=0(New)           | The system sends the order adding confirmation.          |
| 3    |                       | <b>ExecutionReport</b> ,<br>ExecType=4(Canceled),<br>OrdStatus=4(Canceled) | The message indicates that the order has been cancelled. |

#### 4.2.2. Cancelling order

A successfully placed order can be cancelled by client by using either its 'OrderID' or 'OrigClOrdID' (an ID specified by the client).

| Step  | Client                    | FIX Gate   | Details  |
|-------|---------------------------|--|--|
| 1     | <b>NewOrderSingle</b>     |  | The client sends a new order into the trading system.  |
| 2     |                           | <b>ExecutionReport</b> ,<br>ExecType=0(New),<br>OrdStatus=0(New)                     | The system sends the order adding confirmation.  |
| 3...n |                           | <b>ExecutionReport</b> ,<br>ExecType=F(Trade),<br>OrdStatus=1(PartiallyFilled)       | The order can be partially filled. Therefore, the 'ExecutionReport' message containing the order status can be sent several times. |
| n+1   | <b>OrderCancelRequest</b> |  | The client sends the order cancel request.   |
| n+2   |                           | <b>ExecutionReport</b> ,<br>ExecType=6(PendingCancel),<br>OrdStatus=6(PendingCancel) | The system confirms receiving of the order cancel request.   |

| Step | Client | FIX Gate   | Details   |
|------|--------|--|---|
| n+3  |        | <b>ExecutionReport</b> ,<br>ExecType=4(Canceled),<br>OrdStatus=4(Canceled) | The system returns the order cancel confirmation. |

If the order has been already cancelled or filled, the cancel request will be rejected by the system.

| Step | Client                    | FIX Gate  | Details   |
|------|---------------------------|---|---|
| 1    | <b>NewOrderSingle</b>     |   | The client sends a new order to the trading system.   |
| 2    |                           | <b>ExecutionReport</b> ,<br>ExecType=0(New),  | The system sends the order adding confirmation.   |
| 3    | <b>OrderCancelRequest</b> |   | The client sends the order cancel request.  |
| 4    |                           | <b>ExecutionReport</b> ,<br>ExecType=F(Trade),<br>OrdStatus=2(Filled)                 | The order has been fully filled.  |
| 5    |                           | <b>OrderCancelReject</b> ,<br>CxlRejReason=0(Too late to cancel), OrdStatus=2(Filled) | The system rejects order cancel request adding the reason for rejection along with the order current status report. |

If the selected order is already being added, cancelled or replaced, the cancellation request will be also rejected by the system.

| Step | Client                    | FIX Gate   | Details   |
|------|---------------------------|--|---|
| 1    | <b>NewOrderSingle</b>     |  | The client sends a new order to the trading system.   |
| 2    | <b>OrderCancelRequest</b> |  | The client sends the order cancel request.  |
| 3    |                           | <b>OrderCancelReject</b> ,<br>CxlRejReason=3(Order already in PendingCancel or PendingReplace status), OrdStatus=A(PendingNew) | The system rejects order cancel request adding the reason for rejection along with the order current status report. |

| Step | Client                    | FIX Gate   | Details   |
|------|---------------------------|--|---|
| 1    | <b>NewOrderSingle</b>     |  | The client sends a new order to the trading system.   |
| 2    |                           | <b>ExecutionReport</b> ,<br>ExecType=0(New),<br>OrdStatus=0(New)   | The system confirms receiving of the order.   |
| 3    | <b>OrderCancelRequest</b> |  | The client sends the order cancel request.  |
| 4    |                           | <b>OrderCancelReject</b> ,<br>CxlRejReason=3(Order already in PendingCancel or PendingReplace status),<br>OrdStatus=6(PendingCancel) or<br>OrdStatus=E(PendingReplace) | The system rejects order cancel request adding the reason for rejection along with the order current status report. |

#### 4.2.3. Order mass cancel

The 'Execution Report' message is sent for every order canceled due to the mass cancel request ('Order Cancel Reject' if the cancel request was rejected). After that, the system sends the 'Order Mass Cancel Report' message containing the mass cancel report.

| Step | Client                        | FIX Gate   | Details                                   |
|------|-------------------------------|--|---|
| 1    | <b>OrderMassCancelRequest</b> |  | The client sends the mass cancel request. |
| 2    |                               | <b>ExecutionReport</b> ,<br>ExecType=4(Canceled),<br>OrdStatus=4(Canceled) | Order cancel confirmation message.        |
| 3    |                               | <b>ExecutionReport</b> ,<br>ExecType=4(Canceled),<br>OrdStatus=4(Canceled) | Order cancel confirmation message.        |
| 4    |                               | <b>ExecutionReport</b> ,<br>ExecType=4(Canceled),<br>OrdStatus=4(Canceled) | Order cancel confirmation message.        |
| 5    |                               | <b>OrderMassCancelReport</b>   | Order mass cancel report message.         |

#### 4.2.4. Replacing

Clients can modify the order price/volume values by using either 'OrderID' or 'OrigClOrdID' (an ID specified by the client).

| Step  | Client                            | FIX Gate   | Details  |
|-------|-----------------------------------|--|--|
| 1     | <b>NewOrderSingle</b>             |  | The client sends a new order to the trading system.  |
| 2     |                                   | <b>ExecutionReport</b> ,<br>ExecType=0(New),<br>OrdStatus=0(New)                             | The system sends the order adding confirmation.  |
| 3...n |                                   | <b>ExecutionReport</b> ,<br>ExecType=F(Trade),<br>OrdStatus=1(PartiallyFilled)               | The order can be partially filled. Therefore, the 'ExecutionReport' message can be sent several times. |
| n+1   | <b>OrderCancel/ReplaceRequest</b> |  | The client sends order replacement request.  |
| n+2   |                                   | <b>ExecutionReport</b> ,<br>ExecType=E(PendingReplace),<br>OrdStatus=E(PendingReplace)       | The system confirms receiving of the order replacement request.  |
| n+3   |                                   | <b>ExecutionReport</b> ,<br>ExecType=5(Replaced),<br>OrdStatus=0(New) or 1(Partially-Filled) | The system sends the order replacement confirmation message.   |

If the order has been already cancelled or filled, the replacement request will be rejected by the system.

| Step | Client                            | FIX Gate  | Details  |
|------|-----------------------------------|---|--|
| 1    | <b>NewOrderSingle</b>             |   | The client sends a new order to the trading system.  |
| 2    |                                   | <b>ExecutionReport</b> ,<br>ExecType=0(New),  | The system sends the order adding confirmation.  |
| 3    | <b>OrderCancel/ReplaceRequest</b> |   | The client sends order replacement request.  |
| 4    |                                   | <b>ExecutionReport</b> ,<br>ExecType=F(Trade),<br>OrdStatus=2(Filled)                 | The order has been fully filled.   |
| 5    |                                   | <b>OrderCancelReject</b> ,<br>CxlRejReason=0(Too late to cancel), OrdStatus=2(Filled) | The system rejects order replacement request adding the reason for rejection along with the order current status report. |

If the selected order is already being added, cancelled or replaced, the cancellation request will be also rejected by the system.

| Step | Client                            | FIX Gate   | Details  |
|------|-----------------------------------|--|--|
| 1    | <b>NewOrderSingle</b>             |  | The client sends a new order to the trading system.  |
| 2    | <b>OrderCancel/ReplaceRequest</b> |  | The client sends order replacement request.  |
| 3    |                                   | <b>OrderCancelReject</b> ,<br>CxlRejReason=3(Order already in PendingCancel or PendingReplace status), OrdStatus=A(PendingNew) | The system rejects order replacement request adding the reason for rejection along with the order current status report. |

| Step | Client                            | FIX Gate   | Details  |
|------|-----------------------------------|--|--|
| 1    | <b>NewOrderSingle</b>             |  | The client sends a new order to the trading system.  |
| 2    |                                   | <b>ExecutionReport</b> ,<br>ExecType=0(New),<br>OrdStatus=0(New)   | The system sends the order adding confirmation.  |
| 3    | <b>OrderCancel/ReplaceRequest</b> |  | The client sends order replacement request.  |
| 4    |                                   | <b>OrderCancelReject</b> ,<br>CxlRejReason=3(Order already in PendingCancel or PendingReplace status),<br>OrdStatus=6(PendingCancel) or<br>OrdStatus=E(PendingReplace) | The system rejects order replacement request adding the reason for rejection along with the order current status report. |

If a message **OrderCancel/ReplaceRequest** sent from the client side contains a value in field OrderQty which is equal or less than that of the field CumQty (the total number of trades matched), then the message **OrderCancel/ReplaceRequest** indicates the client side's intention to cancel the leftover part of the order.

| Step | Client                | FIX Gate | Details   |
|------|-----------------------|----------|---|
| 1    | <b>NewOrderSingle</b> |          | The client sends a new order to the trading system. |

| Step | Client                            | FIX Gate   | Details  |
|------|-----------------------------------|--|--|
| 2    |                                   | <b>ExecutionReport</b> ,<br>ExecType=0(New),<br>OrdStatus=0(New)         | The system sends the order adding confirmation.  |
| 3    | <b>OrderCancel/ReplaceRequest</b> |  | The client sends order replacement request.  |
| 4    |                                   | <b>ExecutionReport</b> ,<br>ExecType=5(Replaced),<br>OrdStatus=2(Filled) | The system confirms order cancellation. OrdStatus=2(Filled) sends out in accordance with specifications provided in sections C.3.b and C.3.c of vol. 4 of the FIX 4.4 protocol specification guidelines. |

#### 4.2.5. Order current status request

Clients can request order current status report by using its 'ClOrdID'.

| Step | Client                    | FIX Gate   | Details  |
|------|---------------------------|--|--|
| 1    | <b>OrderStatusRequest</b> |  | The client sends an order current status request . |
| 2    |                           | <b>ExecutionReport</b> ,<br>ExecType=1(OrderStatus)  | The system sends the order current status report.  |
| 2    |                           | <b>ExecutionReport</b> ,<br>ExecType=1(OrderStatus),<br>OrdStatus=8(Rejected),<br>OrdRejReason=5(UnknownOrder) | The system reply if the order is not found.        |

#### 4.2.6. Relisting multi-days orders

Multi-day orders are the orders with a fixed expiration date. Such orders will be automatically relisted for the next trading session, with a new number, and with a reference to the client order ID (field 'ClOrdID') taken from the last trading session. Upon relisting an order, the trading system verifies the instrument and the client availability, and the funds sufficiency. In case of a negative result, the order will be rejected.

The multi-day orders are relisted during the Evening clearing session. After an order has been successfully relisted, the clients will receive the messages 'Execution Report', 'ExecType=0(New)', 'OrdStatus=0(New)' (adding a new order). If an order has been rejected by the system, the clients will receive the messages 'Execution Report', 'ExecType=8(Rejected)', 'OrdStatus=8(Rejected)'.

On the expiration date, a multi-day order will be automatically cancelled after closing the Evening trading session.

#### 4.2.7. Execution Reports broadcast for the DAY type orders

After the main trading session ends, the 'DAY' type orders (expiring upon the end of trading session) are cancelled. The 'Execution Report' are sent to clients, where 'ExecType'=C(Expired), 'OrdStatus'=C(Expired).

#### 4.2.8. Managing iceberg orders

An Iceberg order is a variation of a quote order. It allows to hide a part of its volume from the market to minimize the large order impact on the market price. Iceberg orders appear in the order-book in portions. The next portion "pops up" only after the visible part of the order will be executed. This process can be repeated until the whole hidden part is used.

Standard FIX protocol messages are used to manage iceberg orders:

- New Order Single - Add new iceberg order.
- Order Cancel Request - Cancel iceberg order.
- Order Cancel/Replace Request - Change of iceberg order price (volume change is not available).

##### 4.2.8.1. Adding iceberg order

When adding an iceberg order, it additionally indicates the parameters for calculating the size of the pop-up (visible) part. The pop-up part consists of a constant part and a randomly calculated addition. To do this, a 'DisplayInstruction' group of fields was added to the standard 'New Order Single' message, including the following fields:

- DisplayQty - The number of instrument units in the constant component of the volume of the pop-up (visible part) iceberg order.
- DisplayVarianceQty - The value of the random deviation of the volume of the pop-up part of the iceberg order.
- DisplayMethod - Type of pop up (= 3 - Random).

It is precisely by the presence of the 'DisplayInstruction' group in the client message that FIX Gate determines that the order is an iceberg.

The 'OrderQty' field (Tag = 38) is used to set the volume of the entire iceberg order.

As a result of adding an iceberg order, a 'Execution Report (New, New)' message is sent to the client. This message contains 'DisplayInstruction' group of fields and 'MDEntryID' field (Tag=278), in which ID of visible part of iceberg order is broadcast. ID of the entire iceberg order is broadcast in 'OrderID' field (Tag=37).

If the visible part of the iceberg order is executed to the trade, the client receives 'Execution Report (Trade, Filled)' message. "Pop up" of the new visible part is not broadcast.

| Step  | Client         | FIX Gate   | Details   |
|-------|----------------|--|---|
| 1     | NewOrderSingle |  | The client sends a new iceberg order into the trading system.   |
| 2     |                | ExecutionReport,<br>ExecType=0(New),<br>OrdStatus=0(New), DisplayQty,<br>DisplayVarianceQty, DisplayMethod,<br>MDEntryID | The system sends the order adding confirmation - <b>Execution Report</b> message, containing 'DisplayInstruction' group of fields and 'MDEntryID' field.  |
| 3...n |                | ExecutionReport,<br>ExecType=F(Trade),<br>OrdStatus=2(Filled) or<br>OrdStatus=1(PartiallyFilled)                         | The system returns the trade parameters and its status (fully/ partially filled). Therefore, the 'ExecutionReport' message containing 'PartiallyFilled' order status can be sent several times. |

Also, the iceberg order can be rejected by the system.

| Step | Client         | FIX Gate   | Details   |
|------|----------------|--|---|
| 1    | NewOrderSingle |  | The client sends a new iceberg order into the trading system. |
| 2    |                | ExecutionReport,<br>ExecType=8(Rejected),<br>OrdStatus=8(Rejected) | The system rejects the order adding the reason for rejection. |

#### 4.2.8.2. Cancelling iceberg order

A successfully placed iceberg order can be cancelled by client by using either its 'OrderID' or 'OrigClOrdID' (an ID specified by the client).

| Step  | Client             | FIX Gate   | Details  |
|-------|--------------------|--|--|
| 1     | NewOrderSingle     |  | The client sends a new iceberg order into the trading system.  |
| 2     |                    | ExecutionReport,<br>ExecType=0(New),<br>OrdStatus=0(New)                     | The system sends the order adding confirmation.  |
| 3...n |                    | ExecutionReport,<br>ExecType=F(Trade),<br>OrdStatus=1(PartiallyFilled)       | The iceberg order can be partially filled. Therefore, the 'ExecutionReport' message containing the order status can be sent several times. |
| n+1   | OrderCancelRequest |  | The client sends the order cancel request.   |
| n+2   |                    | ExecutionReport,<br>ExecType=6(PendingCancel),<br>OrdStatus=6(PendingCancel) | The system confirms receiving of the order cancel request.   |
| n+3   |                    | ExecutionReport,<br>ExecType=4(Canceled),<br>OrdStatus=4(Canceled)           | The system returns the iceberg order cancel confirmation.  |

If the iceberg order has been already cancelled or filled, the cancel request will be rejected by the system.

| Step | Client             | FIX Gate   | Details   |
|------|--------------------|--|---|
| 1    | NewOrderSingle     |  | The client sends a new iceberg order into the trading system.   |
| 2    |                    | ExecutionReport,<br>ExecType=0(New),<br>OrdStatus=0(New)                         | The system sends the order adding confirmation.   |
| 3    | OrderCancelRequest |  | The client sends the iceberg order cancel request.  |
| 4    |                    | ExecutionReport,<br>ExecType=F(Trade),<br>OrdStatus=2(Filled)                    | The order has been fully filled.  |
| 5    |                    | OrderCancelReject,<br>CxlRejReason=0(Too late to cancel),<br>OrdStatus=2(Filled) | The system rejects order cancel request adding the reason for rejection along with the order current status report. |

#### 4.2.8.3. Replacing iceberg order

Clients can modify the iceberg order price value by using either 'OrderID' or 'OrigClOrdID' (an ID specified by the client). The iceberg order volume is not available for change.



| Step  | Client                            | FIX Gate   | Details  |
|-------|-----------------------------------|--|--|
| 1     | <b>NewOrderSingle</b>             |  | The client sends a new iceberg order into the trading system.  |
| 2     |                                   | <b>ExecutionReport</b> ,<br>ExecType=0(New),<br>OrdStatus=0(New)                             | The system sends the order adding confirmation.  |
| 3...n |                                   | <b>ExecutionReport</b> ,<br>ExecType=F(Trade),<br>OrdStatus=1(PartiallyFilled)               | The iceberg order can be partially filled. Therefore, the 'ExecutionReport' message can be sent several times. |
| n+1   | <b>OrderCancel/ReplaceRequest</b> |  | The client sends iceberg order replacement request.  |
| n+2   |                                   | <b>ExecutionReport</b> ,<br>ExecType=E(PendingReplace),<br>OrdStatus=E(PendingReplace)       | The system confirms receiving of the order replacement request.  |
| n+3   |                                   | <b>ExecutionReport</b> ,<br>ExecType=5(Replaced),<br>OrdStatus=0(New) or 1(Partially-Filled) | The system sends the order replacement confirmation message.   |

If the iceberg order has been already cancelled or filled, the replacement request will be rejected by the system.

| Step | Client                            | FIX Gate   | Details  |
|------|-----------------------------------|--|--|
| 1    | <b>NewOrderSingle</b>             |  | The client sends a new iceberg order into the trading system.  |
| 2    |                                   | <b>ExecutionReport</b> ,<br>ExecType=0(New),<br>OrdStatus=0(New)                         | The system sends the order adding confirmation.  |
| 3    | <b>OrderCancel/ReplaceRequest</b> |  | The client sends iceberg order replacement request.  |
| 4    |                                   | <b>ExecutionReport</b> ,<br>ExecType=F(Trade),<br>OrdStatus=2(Filled)                    | The order has been fully filled.   |
| 5    |                                   | <b>OrderCancelReject</b> ,<br>CxlRejReason=0(Too late to cancel),<br>OrdStatus=2(Filled) | The system rejects order replacement request adding the reason for rejection along with the order current status report. |

If 'OrderCancel/ReplaceRequest' message sent from the client side contains any value in 'OrderQty' field, then FixGate rejects the 'Order Cancel / Replace Request', and 'Reject' message is sent to the user.

| Step | Client                            | FIX Gate   | Details   |
|------|-----------------------------------|--|---|
| 1    | <b>NewOrderSingle</b>             |  | The client sends a new iceberg order into the trading system. |
| 2    |                                   | <b>ExecutionReport</b> ,<br>ExecType=0(New),<br>OrdStatus=0(New)   | The system sends the order adding confirmation.               |
| 3    | <b>OrderCancel/ReplaceRequest</b> |  | The client sends iceberg order replacement request.           |
| 4    |                                   | <b>Reject</b> ,<br>SessionRejectReason=5(Value is incorrect (out of range) for this tag),<br>Text="Change of OrderQty of the Iceberg order is not supported" | The system rejects iceberg order replacement request.         |

#### 4.2.9. Checking of ClOrdID duplication

If there is a duplication of 'ClOrdID' when adding, replacing or cancelling a regular or iceberg order, FixGate sends an 'Execution Report (Rejected, Rejected)' message to the client and fills the 'OrderQty', 'LeavesQty' and 'CumQty' fields with the value "0".

### 4.3. Abnormal activity control

There is the abnormal activity control system within FIX Gate, which disallows users to send more messages (within the same fix-session) than it is specified in the connection request. Now, the limitations are 30, 60, 90, etc. (but not more than 300) trading operations per second. Trade operations are 'New Order Single', 'Order Cancel Request', 'Order Cancel/Replace Request', 'Mass Cancel Request' messages. For all other operations (excluding the session layer messages) the limitation is 500 operations per second.

If the sending limit is exceeded, the client receives the 'Reject' message containing the rejection notification.

| Tag               | Field name          | Mandatory | Type      | Details   |
|-------------------|---------------------|-----------|-----------|---|
| <'Header' group>  |                     | Y         |           | Message type '3'.   |
| 45                | RefSeqNum           | Y         | SeqNum    | Rejected message number.  |
| 372               | RefMsgType          | N         | String10  | Rejected message type.  |
| 373               | SessionRejectReason | N         | Int32     | =7100 (Flood control)   |
| 58                | Text                | N         | String255 | Reason for rejection. The error text is formatted as: "penalty_remain=%d;queue_size=%d;message=%s", where <ul style="list-style-type: none"> <li>penalty_remain – time interval in milliseconds before sending the next sending attempt.</li> <li>queue_size – number of messages from a single user;</li> <li>message – message text.</li> </ul> |
| <'Trailer' group> |                     | Y         |           |   |

Every time a new message received, the number of messages for the last second is calculated anew. Therefore, if a client repeatedly sends more requests per second with the frequency greater than it is allowed, then his messages won't be processed at all.

## 4.4. Error processing

In case of any error in message delivery and processing (on the system layer), the client ID can receive either a message sending error or a reply 'system error' message.

| Tag               | Field name          | Mandatory | Type      | Details   |
|-------------------|---------------------|-----------|-----------|---|
| <'Header' group>  |                     | Y         |           |   |
| 45                | RefSeqNum           | Y         | SeqNum    | Rejected message number.  |
| 372               | RefMsgType          | N         | String10  | Rejected message type.  |
| 373               | SessionRejectReason | N         | Int32     | =7101 (System error)  |
| 58                | Text                | N         | String255 | Reason for rejection. Text is formatted as: 'code=%d;message=%s'. |
| <'Trailer' group> |                     | Y         |           |   |

In case of a failure in communication between the gateway and the trading system, FIX Gate stops processing of client orders and sends along with sending them the 'Business Message Reject' messages in reply.

| Tag               | Field name           | Mandatory | Type      | Details                        |
|-------------------|----------------------|-----------|-----------|--------------------------------|
| <'Header' group>  |                      | Y         |           | Message type 'j'.              |
| 45                | RefSeqNum            | Y         | SeqNum    | Rejected message number.       |
| 372               | RefMsgType           | N         | String10  | Rejected message type.         |
| 380               | BusinessRejectReason | N         | Int32     | =4 (Application not available) |
| 58                | Text                 | N         | String255 | 'Application not available'    |
| <'Trailer' group> |                      | Y         |           |                                |

If the 'Logon' or any other trading message from client contains an incorrect value in the 'SenderCompID' or 'TargetCompID' fields, then FIX Gate sends a 'Logout' type message in respond and terminates the session.

| Tag               | Field name | Mandatory | Type      | Details                  |
|-------------------|------------|-----------|-----------|--------------------------|
| <'Header' group>  |            | Y         |           | Message type '5'.        |
| 58                | Text       | N         | String255 | 'FIX protocol violation' |
| <'Trailer' group> |            | Y         |           |                          |

## 4.5. Automatic order cancellation option (Cancel On Disconnect)

The trading system includes a client connection control feature ('Cancel On Disconnect' or 'COD'). This option allows to automatically cancel some client's orders (anonymous orders without specified expiration time) on disconnect.

To enable/disable the 'COD' option, a trading participant should apply the appropriate request to the Client Center. The 'COD' option will be enabled for the ID (p2login) belonging to the trading participant.

When an ID connects to the trading system having the 'Cancel On Disconnect' option enabled, the trading system starts to monitor its connection activity in the 'COD' mode.

The connection activity monitoring algorithm is as following:

- If the 'COD' mode is enabled for the client, the system monitors the client's activity on transaction level via messages sent by the client side.
- The client side specifies a 'HeartBtInt' value in the message 'Logon'. Therefore, if the client side has not sent any messages within the time interval from  $2 * \text{HeartBtInt}$  up to  $3 * \text{HeartBtInt}$ , or the client side has lost its connection to the FIX Gate, all their active orders will be cancelled automatically.

Order cancellation conditions are as following:

- The FIX-session was closed by client via 'Logout' command. Orders will be cancelled on disconnect.
- FIX user has lost connection to FIX-server or become unable to operate properly due to an error. Once the connection loss has been detected, all orders will be cancelled.
- FIX user has been disconnected due to FIX heartbeats timeout (specified at FIX Logon). Orders will be cancelled on disconnect.
- There may occur an issue when FIX server or an API clients access server connected to the Trading System via gateway becomes unable to operate properly: it loses connections to a client but does not inform the Trading System about it. The Trading System cannot handle such issues; if occurs, the issue should be resolved on the client side.

All orders added by clients with COD-mode enabled are cancelled when the evening trading session ends and when the Trading System has been restored after a failure.

Every time the 'COD' cancels an order, the Trading System sends message 'Execution Report' to the client, where ExecType=4(Canceled), OrdStatus=4(Canceled), ExecRestatementReason=100 (Cancelled via 'Cancel On Disconnect').

## 5. Drop Copy service

**Drop Copy** is a service which allows clients to obtain order status messages along with trading messages themselves for Clearing Firms, Brokerage Firms or for specified clients accounts passed either through FIX Gate, Plaza-2 Gate, or Wire Gate (TWIME).

The service does not translate the status 'Pending' and reports for rejected trades on all layers excluding the clearing layer.

Each **Drop Copy** client is provided with the separate FIX login, which is not valid for making trading operations.

There are two ways of translation are available according to the client's settings:

- translation of trades
- translation of order status and trades

### 5.1. Session layer

The **Drop Copy** service session layer is equal to that of the standard FIX session, i. e. clients are connected to and authenticated by the **Drop Copy** server using the standard methods, with possibility to exchange the 'Heartbeat' messages and make the 'Resend Request' requests.

### 5.2. Trades broadcast

Trades are broadcasted using the 'Execution Report' messages.

#### 5.2.1. Common instruments trades

| Tag               | Field name       | Mandatory | Type         | Details  |
|-------------------|------------------|-----------|--------------|--|
| <'Header' group>  |                  | Y         |              | Message type '8'.  |
| 11                | ClOrdID          | N         | String20     | Order user's ID  |
| 583               | ClOrdLinkID      | N         | Int32        | External ID  |
| 150               | ExecType         | Y         | char         | =F(Trade)  |
| 39                | OrdStatus        | Y         | char         | =2(Filled) or =1(PartiallyFilled)  |
| 17                | ExecID           | Y         | String64     | The unique ID generated by FIX Gate for every outgoing 'Execution Report' message. |
| 37                | OrderID          | Y         | Int64        | Order ID in SPECTRA.   |
| 198               | SecondaryOrderID | N         | String64     | Order secondary ID.  |
| 336               | TradingSessionID | N         | Int32        | Trading session ID.  |
| 1                 | Account          | N         | String7      | Client account ID.   |
| 60                | TransactTime     | N         | UTCTimestamp | Order status change time. Date format: YYYYMM-MDD-HH:MM:SS.ssssssss.               |
| 55                | Symbol           | Y         | String25     | Instrument symbol ID.  |
| 54                | Side             | Y         | char         | Operation direction.   |
| 44                | Price            | C         | Price16.5    | =0   |
| 38                | OrderQty         | N         | Int64        | =0   |
| 151               | LeavesQty        | Y         | Int64        | =0   |
| 14                | CumQty           | Y         | Int64        | =0   |
| 32                | LastQty          | C         | Int64        | Instrument quantity in trade.  |
| <'Parties' group> |                  | N         |              | Used for the OTC order reports.  |
| 527               | SecondaryExecID  | N         | Int64        | Trade ID.  |
| 31                | LastPx           | C         | Price16.5    | Trade price.   |
| 136               | NoMiscFees*      | N         | NumInGroup   | =1   |
| => 137            | MiscFeeAmt*      | Y         | Price16.5    | Trade fee.   |
| => 139            | MiscFeeType*     | Y         | Int32        | =4' (Exchange Fees)  |
| 377               | SolicitedFlag    | N         | Boolean      | =N' (Was not solicited)  |
| 797               | CopyMsgIndicator | N         | Boolean      | =Y'  |
| 20008             | Flags            | N         | Int64        | Operation flags.   |
| 20035             | NccRequest       | Y         | Boolean      | Always 'N'.  |

| Tag               | Field name | Mandatory | Type  | Details   |
|-------------------|------------|-----------|-------|---|
| 278               | MDEntryID  | C         | Int64 | The identifier of the pop-up part on the Iceberg order, assigned by the trading system. ID corresponds to the 'MDEntryID' field in the anonymous stream of orders and trades. It is broadcast for iceberg orders. |
| <'Trailer' group> |            | Y         |       |   |

## 5.3. Translation of order reports and trades

Order reports and trades are translated by sending messages 'Execution Report' to clients.

### 5.3.1. Adding order

| Tag               | Field name         | Mandatory | Type         | Details   |
|-------------------|--------------------|-----------|--------------|---|
| <'Header' group>  |                    | Y         |              | Message type '8'.   |
| 11                | ClOrdID            | N         | String20     | Client's order ID.  |
| 583               | ClOrdLinkID        | N         | Int32        | External ID   |
| 150               | ExecType           | Y         | char         | =0(New)   |
| 39                | OrdStatus          | Y         | char         | =0(New)   |
| 17                | ExecID             | Y         | String64     | The unique ID generated by FIX Gate for every outgoing 'Execution Report' message.  |
| 37                | OrderID            | Y         | Int64        | Order ID within SPECTRA. The prefix 'DC:F:' stays for futures.  |
| 198               | SecondaryOrderID   | N         | String64     | Additional order ID. The prefix 'F:' stays for futures.   |
| 336               | TradingSessionID   | N         | Int32        | Trading session ID.   |
| 1                 | Account            | N         | String7      | Client account code.  |
| 60                | TransactTime       | N         | UTCTimestamp | Order status change time. Date format: YYYYMM-MDD-HH:MM:SS.ssssssss.  |
| 55                | Symbol             | Y         | String25     | Instrument symbol ID.   |
| 54                | Side               | Y         | char         | Operation direction.  |
| 44                | Price              | C         | Price16.5    | Price.  |
| 38                | OrderQty           | Y*        | Int64        | Instrument units quantity (for iceberg order - instrument units quantity for the entire order).   |
| 151               | LeavesQty          | Y         | Int64        | Order amount left to be exercised.  |
| 14                | CumQty             | Y         | Int64        | Total quantity of instruments bought or sold by the order.  |
| 6                 | AvgPx              | Y         | Price16.5    | =0  |
| 526               | SecondaryClOrdID   | N         | String20     | Comment.  |
| <'Parties' group> |                    | N         |              | Used for the OTC order reports.   |
| 40                | OrdType            | Y         | char         | =Limit  |
| 20035             | NccRequest         | Y         | Boolean      | Always 'N'.   |
| 1138              | DisplayQty         | C         | Int64        | The number of instrument units in the constant component of the volume of the pop-up (visible part) iceberg order. It is broadcast for iceberg orders.  |
| 20036             | DisplayVarianceQty | C         | Int64        | The value of the random deviation of the volume of the pop-up part of the iceberg order. It is broadcast for iceberg orders.  |
| 1084              | DisplayMethod      | C         | char         | = 3 - Random (randomize value). It is broadcast for iceberg orders.   |
| 278               | MDEntryID          | C         | Int64        | The identifier of the pop-up part on the Iceberg order, assigned by the trading system. ID corresponds to the 'MDEntryID' field in the anonymous stream of orders and trades. It is broadcast for iceberg orders. |
| 20038             | FirstOrderID       | N         | Int64        | ID number of the first order. The prefix 'DC:F:' stays for futures.   |
| <'Trailer' group> |                    | Y         |              |   |

### 5.3.2. Deleting order

| Tag              | Field name | Mandatory | Type | Details         |
|------------------|------------|-----------|------|-----------------|
| <'Header' group> |            | Y         |      | Order type '8'. |

| Tag               | Field name       | Mandatory | Type         | Details   |
|-------------------|------------------|-----------|--------------|---|
| 11                | ClOrdID          | N         | String20     | Client's order ID.  |
| 583               | ClOrdLinkId      | N         | Int32        | External ID   |
| 41                | OrigClOrdID      | N         | String20     | Client's ID of canceled/replaced order.   |
| 150               | ExecType         | Y         | char         | =4(Canceled)  |
| 39                | OrdStatus        | Y         | char         | =4(Canceled)  |
| 17                | ExecID           | Y         | String64     | The unique ID generated by FIX Gate for every outgoing 'Execution Report' message.  |
| 37                | OrderID          | Y         | Int64        | Order ID within SPECTRA. The prefix 'DC:F:' stays for futures.  |
| 198               | SecondaryOrderID | N         | String64     | Additional order ID. The prefix 'F:' stays for futures.   |
| 336               | TradingSessionID | N         | Int32        | Trading session ID.   |
| 1                 | Account          | N         | String7      | Client account code.  |
| 60                | TransactTime     | N         | UTCTimestamp | Order status change time. Date format: YYYYMM-MDD-HH:MM:SS.ssssssss.  |
| 55                | Symbol           | Y         | String25     | Instrument symbol ID.   |
| 54                | Side             | Y         | char         | Operation direction.  |
| 44                | Price            | C         | Price16.5    | Price.  |
| 38                | OrderQty         | Y*        | Int64        | Instrument units quantity.  |
| 151               | LeavesQty        | Y         | Int64        | =0  |
| 14                | CumQty           | Y         | Int64        | Total quantity of instruments bought or sold by the order.  |
| 6                 | AvgPx            | Y         | Price16.5    | =0  |
| 526               | SecondaryClOrdID | N         | String20     | Comment.  |
| <'Parties' group> |                  | N         |              | Used for the OTC order reports.   |
| 40                | OrdType          | Y         | char         | =Limit  |
| 20035             | NccRequest       | Y         | Boolean      | Always 'N'.   |
| 278               | MDEntryID        | C         | Int64        | The identifier of the pop-up part on the Iceberg order, assigned by the trading system. ID corresponds to the 'MDEntryID' field in the anonymous stream of orders and trades. It is broadcast for iceberg orders. |
| <'Trailer' group> |                  | Y         |              |   |

### 5.3.3. Moving order

| Tag              | Field name       | Mandatory | Type         | Details  |
|------------------|------------------|-----------|--------------|--|
| <'Header' group> |                  | Y         |              | Order type '8'.  |
| 11               | ClOrdID          | N         | String20     | Client's order ID.   |
| 583              | ClOrdLinkId      | N         | Int32        | External ID  |
| 41               | OrigClOrdID      | N         | String20     | Client's ID of canceled/replaced order.  |
| 150              | ExecType         | Y         | char         | =5(Replaced)   |
| 39               | OrdStatus        | Y         | char         | =0(New)  |
| 17               | ExecID           | Y         | String64     | The unique ID generated by FIX Gate for every outgoing 'Execution Report' message. |
| 37               | OrderID          | Y         | Int64        | Order ID within SPECTRA. The prefix 'DC:F:' stays for futures.                     |
| 198              | SecondaryOrderID | N         | String64     | Additional order ID. The prefix 'F:' stays for futures.                            |
| 336              | TradingSessionID | N         | Int32        | Trading session ID.  |
| 1                | Account          | N         | String7      | Client account code.   |
| 60               | TransactTime     | N         | UTCTimestamp | Order status change time. Date format: YYYYMM-MDD-HH:MM:SS.ssssssss.               |
| 55               | Symbol           | Y         | String25     | Instrument symbol ID.  |
| 54               | Side             | Y         | char         | Operation direction.   |
| 44               | Price            | C         | Price16.5    | Price.   |

| Tag               | Field name       | Mandatory | Type      | Details   |
|-------------------|------------------|-----------|-----------|---|
| 38                | OrderQty         | Y*        | Int64     | Instrument units quantity (for iceberg order - instrument units quantity for the entire order).   |
| 151               | LeavesQty        | Y         | Int64     | Order quantity left to be exercised.  |
| 14                | CumQty           | Y         | Int64     | Total amount of instruments bought or sold by the order.  |
| 6                 | AvgPx            | Y         | Price16.5 | =0  |
| 526               | SecondaryClOrdID | N         | String20  | Comment.  |
| <'Parties' group> |                  | N         |           | Used for the OTC order reports.   |
| 40                | OrdType          | Y         | char      | =Limit  |
| 20035             | NccRequest       | Y         | Boolean   | Always 'N'.   |
| 278               | MDEntryID        | C         | Int64     | The identifier of the pop-up part on the Iceberg order, assigned by the trading system. ID corresponds to the 'MDEntryID' field in the anonymous stream of orders and trades. It is broadcast for iceberg orders. |
| 9945              | OrigOrderID      | Y         | Int64     | ID number of the remote order. The prefix 'DC:F:' stays for futures.  |
| <'Trailer' group> |                  | Y         |           |   |

### 5.3.4. Common instruments trades

| Tag               | Field name       | Mandatory | Type         | Details  |
|-------------------|------------------|-----------|--------------|--|
| <'Header' group>  |                  | Y         |              | Order type '8'.  |
| 11                | ClOrdID          | N         | String20     | Client's order ID.   |
| 583               | ClOrdLinkID      | N         | Int32        | External ID  |
| 150               | ExecType         | Y         | char         | =F(Trade)  |
| 39                | OrdStatus        | Y         | char         | =2(Filled) or =1(PartiallyFilled)  |
| 17                | ExecID           | Y         | String64     | The unique ID generated by FIX Gate for every outgoing 'Execution Report' message. |
| 37                | OrderID          | Y         | Int64        | Order ID within SPECTRA. The prefix 'DC:F:' stays for futures.                     |
| 198               | SecondaryOrderID | N         | String64     | Additional order ID. The prefix 'F:' stays for futures.                            |
| 336               | TradingSessionID | N         | Int32        | Trading session ID.  |
| 1                 | Account          | N         | String7      | Client account code.   |
| 60                | TransactTime     | N         | UTCTimestamp | Order status change time. Date format: YYYYMM-MDD-HH:MM:SS.ssssssss.               |
| 55                | Symbol           | Y         | String25     | Instrument symbol ID.  |
| 54                | Side             | Y         | char         | Operation direction.   |
| 44                | Price            | C         | Price16.5    | =0   |
| 38                | OrderQty         | Y*        | Int64        | Instrument units quantity.   |
| 151               | LeavesQty        | Y         | Int64        | Order amount left to be exercised.   |
| 14                | CumQty           | Y         | Int64        | Total quantity of instruments bought or sold by the order.                         |
| 32                | LastQty          | C         | Int64        | Instrument quantity in order.  |
| <'Parties' group> |                  | N         |              | Used for the OTC order reports.  |
| 527               | SecondaryExecID  | N         | Int64        | Trade ID.  |
| 31                | LastPx           | C         | Price16.5    | Matched trade price.   |
| 136               | NoMiscFees*      | N         | NumInGroup   | =1'  |
| => 137            | MiscFeeAmt*      | Y         | Price16.5    | Trade fee.   |
| => 139            | MiscFeeType*     | Y         | Int32        | =4' (Exchange Fees)  |
| 377               | SolicitedFlag    | N         | Boolean      | =N' (Was not solicited)  |
| 797               | CopyMsgIndicator | N         | Boolean      | =Y'  |
| 526               | SecondaryClOrdID | N         | String20     | Comment.   |
| 20008             | Flags            | N         | Int64        | Operation flags.   |
| 20035             | NccRequest       | Y         | Boolean      | Always 'N'.  |

| Tag               | Field name | Mandatory | Type  | Details   |
|-------------------|------------|-----------|-------|---|
| 278               | MDEntryID  | C         | Int64 | The identifier of the pop-up part on the Iceberg order, assigned by the trading system. ID corresponds to the 'MDEntryID' field in the anonymous stream of orders and trades. It is broadcast for iceberg orders. |
| <'Trailer' group> |            | Y         |       |   |