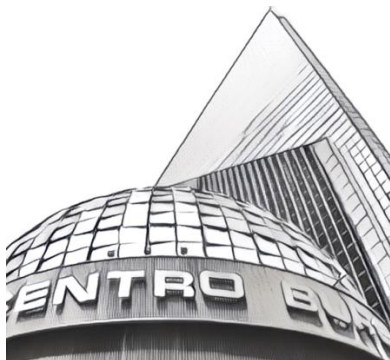




FixBMV/DC

Fix Clients – FixBMV/DC FIX Specification External Interface Specification (EIS)

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Revisions

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COMMENTS AND SUGGESTIONS

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1. Introduction

1.1 Purpose

The present document quotes the specification and flow of messages of the interface that is relevant to the functionality of FixBMV Drop Copy (FixBMV/DC). This solution is based on the FIX (Financial Information eXchange) protocol standard, version 5.0 SP2, EP240.

1.2 Target

This document is addressed to those members willing to use FixBMV/DC protocol.

1.3 Conventions

Any message related to the solution is duly specified in its entirety. Certain FixBMV/DC aspects differ from the FIX standard; therefore, tables specifying the tags contained in each message include information like the following:

Column	Meaning
Tag	Field Number. Fields added to the message show an asterisk (“**”) following this number.
Name	Field name according to FIX standard.
Req	“Y” means the field is required; “N” means the field is optional; “C” means the field is conditionally required. “Y*” means the field is required in FixBMV/DC implementation, but optional in FIX standard 5.0 SP2
Valid values	Field valid values in the context of the message. It may be a list of values or a range of numeric values, for instance “>=3, <= 10”. This column also contains the field default value, for the optional fields that may require it. To avoid confusions with the terms, in the values related to codes the FIX original value has been kept and therefore it has not been translated.
Format	Type of field data. This is one of the types defined by FIX, or one of those types with some additional restriction. String(n) is a String type with a maximum of n characters, or in some cases with exactly n characters. If you need more information on the String type please refer to point 2.4.
Description	Field description in the context of the message.

1.4 Related Documents

#	Title	Author	Version
1	http://www.fixtrading.org		
2	http://www.mexder.com.mx/wb3/wb/MEX/mexfix	MexDer	1.2

2. Implementation

2.1 Description

Given the fact that some modifications were made to FIX standard, the limitations implemented are detailed below:

2.2 Ignored Fields

In some cases, FixBMV/DC may ignore the content of some fields of the input messages. If this is the case, it is clearly explained in the field description.

2.3 Unsupported Fields

Unsupported fields in a message have not been included in its description.

Messages sent to FixBMV/DC should not contain unsupported fields. Messages sent by FixBMV/DC don't contain unsupported fields.

No required field whatsoever has been declared unsupported.

2.4 String Type Length

FIX standard imposes no maximum length restriction on the String type. In this implementation the maximum length for this type has been set to 255 characters.

In some fields, a lower maximum length of this value has been set. In these cases, the type is presented as String(n), where "n" is the maximum number of field characters. Sometimes "n" is the exact length of the field, in such case, it shall be explicitly mentioned in the "Valid Values" column.

2.5 Message Maximum Length

The maximum length of messages sent or received by FixBMV/DC is 4096 bytes.

2.6 Encryption

FixBMV/DC does not use the encryption defined by FIX standard (by means of SecureData and SecureDataLen fields in the heading of the message).

2.7 FIX Protocol

FIX protocol's version 5.0 SP2, Extension Pack 254, over transport protocol FIXT1.1 is the only one that may be used with the implementation of FixBMV/DC.

3. FIX Session

FixBMV/DC complies with the specifications in FIX standard 5.0 SP2 as far as Session level and Application Layer is concerned. In this way, this paragraph will show only the new messages layout due to certain FixBMV/DC delimitations. Some other differences, arising out of the protocol adaptation made by FixBMV/DC, will be shown afterwards. To find more details as to the way in which sessions are established and aspects related to FIX session level, it is necessary to refer to the relevant FIX documentation which is not rewritten in order to avoid any doubt about it.

3.1 Synchronize at an Application level

When a member starts a session (accepted Logon message), it receives a group of information related with the current Session (if available).

Messages generated that were addressed to the current Drop Copy session while is disconnected will be sent when it reconnects.

Messages coming from an explicit request of repetition (requested with a Resend Request message, as shown in session 3.2.7) will contain the “Y” value in the field PossDupFlag stating such situation.

3.2 Session Messages

According to the FIX Specification, the session messages follow the transport specification FIXT1.1.

3.2.1 Standard Message Header

Header that contains the FIX messages

Tag	Name	Req	Valid values	Format	Description
8	BeginString	Y	FIXT.1.1	String	It indicates the beginning of a new message. It contains the FIX protocol version. It is always the first field of the message.
9	BodyLength	Y		int	Message length in bytes, from the end of this field until, and including, the previous limit character of the CheckSum field. It is always the second field of the message.
35	MsgType	Y	All message types supported by FixBMV/DC	String	It identifies the type of message. It is always the third field of the message.
49	SenderCompID	Y		String	Identifier of the entity that sends the message. It has to contain linkID in the messages sent by the client's application.

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56	TargetCompID	Y		String	Identifier of the entity to whom the message is target. It contains the linkID in the messages sent by FixBMV/DC.
115	OnBehalfOfCompID	N		String	CompID of the source trading session. Indicated only for outgoing messages from Drop Copy Gateway
116	OnBehalfOfSubID	N		String	SubCompID of the source trading session. Indicated only for outgoing messages from Drop Copy Gateway
34	MsgSeq Num	Y		int	Sequence number of the message within the current FIX session.
43	PossDupFlag	N	N = Sending of the original message (default value) Y = Possible duplicated	Boolean	It indicates if it is the first time, within the FIX session, that a message is sent ("N") or if it is sending again the same message ("Y"), because of an explicit request on the other behalf or because there is a doubt about the reception of the original message.
52	SendingTime	Y	Format: YYYYMMDD-HH:MM:SS (whole seconds) YYYYMMDD-HH:MM:SS.sss	UTC Timestamp	Sending time of the message.
122	OrigSendingTime	N	Format: YYYYMMDD-HH:MM:SS (whole seconds) YYYYMMDD-HH:MM:SS.sss	UTC Timestamp	Sending time of the original message. Required in a resending. A message is considered a resending if the field PossDupFlag = "Y" and if the MsgType field is not a "4" (SequenceReset).

3.2.2 Standard Message Trailer

Final part of all FIX messages.

Tag	Name	Req	Valid values	Format	Description
10	Checksum	Y		String(3)	Message Checksum, computed as it is described in the standards. It is always the last field of the message and its length is 3 bytes accurately.

3.2.3 Logon (Msg Type = A)

The Logon message is used by the client to start a session and to be accepted by the server.

Tag	Name	Req	Valid values	Format	Description
	Standard Header	Y	MsgType = A		
98	EncryptMethod	Y	0 = None	int	Ignored by FixBMV/DC
108	HeartBtInt	Y	60	int	Sending interval of the connection verification message (Heartbeat message) expressed in seconds.
141	ResetSeqNumFlag	N	N	Boolean	Only the value "N" is allowed, since in the protocol implementation it is not necessary.
554	Password	Y*		String	Password
1137	DefaultApplVerID	Y	9 = FIX50SP2	String	The default version of FIX messages used in this session
	Standard Trailer	Y			

3.2.4 Logout (Msg Type = 5)

The Logout message is used by both parties whether to request or notify the end of the communication session or to accept such request.

Tag	Name	Req	Valid values	Format	Description
	Standard Header	Y	MsgType = 5		
58	Text	N		String	Explanatory text

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	Standard Trailer	Y			
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3.2.5 Heartbeat (Msg Type = 0)

The Heartbeat message is used by both parties to indicate that the connection remains active.

Tag	Name	Req	Valid values	Format	Description
	Standard Header	Y	MsgType = 0		
112	TestReqID	N		String	If the message is the response to a Test Request message, it may contain the same value that the original TestReqID field contained.
	Standard Trailer	Y			

3.2.6 Test Request (Msg Type = 1)

The Test Request message is used by both parties to request the sending of the Heartbeat message.

Tag	Name	Req	Valid values	Format	Description
	Standard Header	Y	MsgType = 1		
112	TestReqID	Y		String	Petition identifier. It has to be included in the answer Heartbeat message.
	Standard Trailer	Y			

3.2.7 Resend Request (Msg Type = 2)

The Resend Request message can be used by both parties to request the resent of messages that have not been received.

Tag	Name	Req	Valid values	Format	Description
	Standard Header	Y	MsgType = 2		

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7	BeginSeqNo	Y	Valid sequence number	int	Sequence number of the first message of the rank of messages of which the resent is requested. It must contain a lower value than the last sequence number received.
16	EndSeqNo	Y	0 = Infinite number of valid sequence	int	Sequence number of the last message of the rank of messages of which the resent is requested. It must contain a lower value than the last number of the received sequence. If the request is only of one message EndSeqNo = BeginSeqNo. If the request is of all messages from a given one EndSeqNo = 0
	Standard Trailer	Y			

3.2.8 Sequence Reset (Msg Type = 4)

The Sequence reset message is used by both parties to fill in the blank spaces in the messages that are being sent, through the re-assignment of the sequence number.

Tag	Name	R eq	Valid values	Format	Description
	Standard Header	Y	MsgType = 4		Have in mind that PossDupFlag must contain the "Y" value
123	GapFillFlag	Y*	Y = It indicates that the message is to fill in a blank space	Boolean	For further information consult the document with the FIX 5.0 specifications
36	NewSeqNo	Y		int	Sequence number of the message which will be sent
	Standard Trailer	Y			

3.2.9 Reject (Msg Type = 3)

The Reject message is used by FixBMV/DC for rejecting a message that does not comply with the FIX protocol specified in this document.

Tag	Name	Req	Valid values	Format	Description
	Standard Header	Y	MsgType = 3		
45	RefSeqNum	Y		int	Sequence number of the rejected message

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371	RefTagID	N		int	The tag number of the FIX field being referenced
372	RefMsgType	N		String	MsgType of the rejected message
373	SessionRejectReason	N	0 = Invalid tag number 1 = Required tag missing 2 = Tag not defined for this message type 3 = Undefined Tag 4 = Tag specified without a value 5 = Value is incorrect (out of range) for this tag 6 = Incorrect data format for value 8 = Signature (89) problem 9 = CompID problem 10 = SendingTime (52) accuracy problem 11 = Invalid MsgType (35) 13 = Tag appears more than once 14 = Tag specified out of required order 15 = Repeating group fields out of order 16 = Incorrect NumInGroup count for repeating group 17 = Non "data" value includes field delimiter (SOH character) 99 = Other	int	It is the code that indicates the reason of rejection
58	Text	N		String	It contains a more specific description of the reason of rejection
	Standard Trailer	Y			

3.3 FIX 5.0 Delimitations and Adaptations

- When a request to start a session (Logon message) is rejected, FixBMV/DC will always send a Logout message as an answer.
- PossResend field is not supported.
- FIX encryption method is not supported.
- Valid values of Reset SeqNumFlag field of Logon messages are limited to the value "N".
- The field NextExpectedMsgSeqNum (789) of the Logon message (A) was eliminated. The sequence synchronization mechanism must be executed through the Resend Request message ("2") as was always made by the FIX protocol.
- Period of 60 seconds for sending a heartbeat is obligated.

3.4 Identification of the FIX session

Once a communication session has been established, FixBMV/DC identifies the associated FIX session using two fields in the Logon message sent by the initiator:

- SenderCompID
- TargetCompID

SenderCompID is the identifier for the sender member. TargetCompID identifies BMV.

No more than one FIX session can exist at a time with the same values for these fields.

The SenderCompID and TargetCompID fields are present in all the FIX messages. All the messages belonging to the same FIX session must have the same values in these fields.

3.5 Drop Copy Functionality

3.5.1 Functionality

Drop Copy is a service provided by Grupo BMV designed to send exact copies of specific messages coming from one or more FIX Trading sessions to one or more specific FIX Drop Copy sessions.

3.5.2 FIX Drop Copy Sessions

Drop Copy Sessions are only allowed to receive copies of messages. Drop copy service does not allow to trade or receive market data info.

3.5.3 Management

Grupo BMV will assign which Drop Copy Sessions can receive messages from specific FIX Trading Sessions.

3.5.4 Type of messages to be communicated

FixBMV Drop Copy service will use an Execution Report Message (35=8) to communicate different events to clients.

New order

Canceled order

Replaced order

Expired order

Trade (Partially and Filled orders)

Trade Correct

Trade Cancel

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ExecutionReport messages in source trading sessions won't be sent to drop copy in case they were generated by a ResendRequest from the source session (tag PossDupFlag (43)=Y).

4. Execution report

Execution report message (MsgType = 8) format will be the same as specified in “MexFix Trading Specs” document except that header will be set according to the present drop copy specification.

Tag	Name	Req	Valid Values	Format	Description
	Standard Header	Y	MsgType (35) = 8		
	Body	Y	According to Appendix 1		
	Standard Trailer	Y			

5. Appendix 1. Mapping from FIX Trading to FIX Drop Copy

Execution Report from source trading session	Execution Report Drop Copy Session	Notes
	8 BeginString = FIXT.1.1 9 BodyLength 35 MsgType = 8 49 SenderCompID 56 TargetCompID	These tags will be generated with drop copy message data itself according to FIX standard
56 TargetCompID	115 OnBehalfOfCompID	These tags will be copied from the original message to the drop copy message as indicated in this table
57 TargetSubID	116 OnBehalfOfSubID	
	34 MsgSeq Num 43 PossDupFlag 52 SendingTime 122 OrigSendingTime 17 ExecID	These tags will be generated with drop copy message data itself according to FIX standard
BODY	BODY	The rest of the tags will be copied one by one from the original trading message to the corresponding drop copy message tags
	10 CheckSum	It will be calculated based on drop copy message

The block of parties will include additional information that doesn't have the original trading message. It will include an added identifier related to the responsible person of the order. Drop copy message will have an additional repetition in the group of parties with the following information:

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Tag	Tag name	Value	Description
448	PartyID	<responsive person>	ID or name of the responsive person of the order
447	PartyIDSource	D	Proprietary custom code
452	PartyRole	118	Operator