



FIX Global Exchanges and Markets Committee

DBAG Order Handling Extensions

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Document History

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0.1	February 17, 2010	Hanno Klein	Initial draft
0.2	February 26, 2010	Hanno Klein	Updates after GEMC meetings Feb 18 and Feb 25 <ul style="list-style-type: none"> · Added issue about ExDestination field on Order Cancel messages · Added ExDestinationIDSource wherever ExDestination is added · Added new field InitialDisplayQty to echo requested display quantity of reserve orders in ExecutionReport
0.3	March 5, 2010	Hanno Klein	Updates after GEMC meeting Mar 4 <ul style="list-style-type: none"> · Added message flow description and usage examples for InitialDisplayQty
0.4	March 11, 2010	Hanno Klein	Updates after GEMC meeting Mar 11 <ul style="list-style-type: none"> · Updated business and message flow description and corrected usage examples for InitialDisplayQty · Shortened message layouts to show only actual changes and surrounding rows
0.5	March 18, 2010	Hanno Klein	Updates after GTC meeting Mar 18 <ul style="list-style-type: none"> · Added note for missing FIXML abbreviation for "Display" · Approved for public review
ASBUILT	2011-11-12	Jim N	Updated definition for InitialDisplayQty(1608)

1 Introduction

One of the interfaces provided by Deutsche Börse Group to access their cash market is a FIX gateway solution. This solution needs to be extended to a generic access gateway with multiple marketplaces behind it. The FIX order handling messages have a few gaps related to exchange destinations and parties involved that this proposal seeks to close.

This proposal suggests the following extensions that do not require any new messages, fields or valid values:

- Addition of ExDestination (100) and ExDestinationIDSource (1133) to Order Cancel Request, Order Cancel Reject and Execution Report
- Addition of <Parties> component block to Order Cancel Reject
- Addition of new field InitialDisplayQty (1608) to <DisplayInstruction> component block

2 Business Workflow

Order handling for simple orders involves messages to enter, modify or delete orders which normally leads to an Execution Report as a response. A second specific response is the Order Cancel Reject message which only applies to requests to cancel an order. Generic responses such as a session-level Reject or application level Business Message Reject are not affected by this proposal.

One of the intentions of the responses to order related requests is to echo back information from the request. This is especially important for order entries and modifications but also applies to some extent to order deletions.

The field **ExDestination (100)** can be used to convey a desired execution venue for an order or a quote. The Quote Status Report echoes back this field whereas the Execution Report does not. This gap should be closed by adding the field to the Execution Report message. This ensures that receivers of drop copies of Execution Reports have information about the requested venue. This might differ from the actual venue provided by LastMkt (30) due to Rules of Engagement allowing a deviation under certain circumstances.

The field **ExDestination (100)** can be provided for order entries and modifications but not for order deletions. This gap should be closed by adding the field to the Order Cancel Request and Order Cancel Reject message. This completes application level routing of order handling messages. It is essential in an environment with multiple execution venues that provide access via FIX as well as non-FIX channels. Non-FIX channels include verbally communicated orders. Using the FIX channel for subsequent deletions creates an issue if the original order never passed through this channel. In such cases, ExDestination allows to direct the cancellation to the proper venue.

The <**Parties**> component block conveys actors and accounts associated with an order. This information is echoed back in the Execution Report which is also used to reject order entries. However, modifications and deletions are rejected with the Order Cancel Reject message which does not have this block. This gap should be closed by adding the component block to the Order Cancel Reject message.

The <**DisplayInstruction**> component block carries the field DisplayQty (1138) which has a different meaning on order and execution messages. On orders it carries the requested initial display quantity whereas on Execution Reports it conveys the currently displayed quantity. Drop copies of Execution Reports are thus unable to convey the originally requested display quantity if an order matches upon entry or modification and message bundling is used (no separate ExecutionReport with ExecType="New"). This quantity is used when defining DisplayMethod (1084) to be I=Initial. Therefore, it is necessary to convey both the requested and the actual display quantity on the Execution Report. This gap should be closed by adding a new field **InitialDisplayQty (1608)** to the <**DisplayInstruction**> component block which is not relevant for order messages. The value of the field DisplayQty on the order (new order or modified order) is echoed back in the new field InitialDisplayQty of the ExecutionReport.

3 Issues and Discussion Points

3.1 Usage of Exchange Destination

The field ExDestination (100) is used on order entry and modification messages to convey the preferred execution venue for an order. The proposal seeks to add the field to the Order Cancel messages as an optional field. This raised a concern that exchanges or vendors might seek to tighten this in their rules of engagement to make it a mandatory field that always needs to be populated. This is deemed to have a significant impact on existing applications that do not provide ExDestination on order deletions today.

Order deletion messages do not carry this field under the assumption that the recipient has previously received a ClOrdID value that he can look up to find the exchange destination where the order was originally sent to for execution. This assumption is invalid when FIX and non-FIX interfaces are being used. This includes the verbal communication of orders. This might result in ClOrdID being unavailable and has been addressed in the order entry and modification messages for the field OrigClOrdID (41) with the field comment "Required when referring to orders that were electronically submitted over FIX or otherwise assigned a ClOrdID". The use case for order deletion has not been covered.

The usage of ExDestination in the Order Cancel Request message should be restricted to cases where the client order identification is unavailable or has not passed through the chosen FIX channel before. Otherwise, it is recommended to use a lookup of the original order to determine the correct value for ExDestination in a multi-execution venue environment. The extension is thus expected to have no impact on existing FIX-only interfaces where verbally communicated orders will result in Execution Reports going back through the FIX interface and allow the order and its ExDestination value to become known and stored at the FIX interface.

4 Proposed Message Flow

4.1 Usage of Initial Display Quantity

The new field InitialDisplayQty would become part of the DisplayInstruction component block but is only relevant on the ExecutionReport message, i.e. as a response to an order message, e.g. NewOrderSingle. Order messages contain parameters describing the desired reserve order behaviour.

In terms of quantities, there are two fields available. DisplayQty defines the initial quantity to be displayed. Rules of Engagement should define whether this value applies regardless of partial fills upon entry or not. RefreshQty defines the quantity to be used for each refresh operation and is only applicable in case of DisplayMethod being set to 2=New.

The ExecutionReport being sent in response to the order entry might bundle messages and not be able to report the initial display quantity as defined by the user. By definition it carries the actually displayed quantity which could be affected by a partial fill. The new field InitialDisplayQty solves this problem by being separately available on all ExecutionReports. It echoes the input value of the sender regardless of the events that occur. InitialDisplayQty contains the value of DisplayQty from the sender when entering the order or, subsequently, from the most recent and successful order modification request of the sender.

5 FIX message tables

The following FIX messages are affected by this proposal which adds existing fields to them.

- Order Cancel Request
- Order Cancel Reject
- Execution Report

5.1 Order Cancel Request

Tag	FieldName	Req'd	Comments	Action	Mapping Usage and Comments
StandardHeader		Y	MsgType = F		
<...truncated...>					
component block <Parties>		N	Insert here the set of "Parties" (firm identification) fields defined in "Common Components of Application Messages"		
component block <Instrument>		Y	Insert here the set of "Instrument" (symbology) fields defined in "Common Components of Application Messages"		
component block <FinancingDetails>		N	Insert here the set of "FinancingDetails" (symbology) fields defined in "Common Components of Application Messages" Must match original order		
component block <UndInstrmtGrp>		N	Number of underlyings		
100	ExDestination	N	Execution destination when referring to orders that were not electronically submitted over FIX and ClOrdID has not been assigned or is not available to the recipient of the request.	ADD	
1133	ExDestinationIDSource	N		ADD	
54	Side	Y			
60	TransactTime	Y	Time this order request was initiated/released by the trader or trading system.		
component block <OrderQtyData>		Y	Insert here the set of "OrderQtyData" fields defined in "Common Components of Application Messages" Note: OrderQty = CumQty + LeavesQty (see exceptions above)		
<...truncated...>					
StandardTrailer		Y			

5.2 Order Cancel Reject

Tag	FieldName	Req'd	Comments	Action	Mapping Usage and Comments
StandardHeader		Y	MsgType = 9		
<...truncated...>					
434	CxlRejResponseTo	Y			
102	CxlRejReason	N			
100	ExDestination	N		ADD	
1133	ExDestinationIDSource	N		ADD	
component block <Parties>		N	Insert here the set of "Parties" (firm identification) fields defined in "Common Components of Application Messages"	ADD	
58	Text	N			
354	EncodedTextLen	N	Must be set if EncodedText field is specified and must immediately precede it.		
355	EncodedText	N	Encoded (non-ASCII characters) representation of the Text field in the encoded format specified via the MessageEncoding field.		
StandardTrailer		Y			

5.3 Execution Report

Tag	FieldName	Req'd	Comments	Action	Mapping Usage and Comments
StandardHeader		Y	MsgType = 8		
component block <ApplicationSequenceControl>		N	For use in drop copy applications. NOT FOR USE in transactional applications.		
<...truncated...>					
669	LastParPx	N	Last price expressed in percent-of-par. Conditionally required for Fixed Income trades when LastPx is expressed in Yield, Spread, Discount or any other price type that is not percent-of-par.		
194	LastSpotRate	N	Applicable for F/X orders		
195	LastForwardPoints	N	Applicable for F/X orders		
30	LastMkt	N	If ExecType = Trade (F), indicates the market where the trade was executed. If ExecType = New (0), indicates the market where the order was routed.		
100	ExDestination	N	Market provided by order submitter	ADD	
1133	ExDestinationIDSource	N		ADD	
336	TradingSessionID	N			
625	TradingSessionSubID	N			
<...truncated...>					
StandardTrailer		Y			

6 FIX component blocks

6.1 DisplayInstruction

<i><DisplayInstruction></i>					
<i>Tag</i>	<i>Field Name</i>	<i>Req'd</i>	<i>Action</i>	<i>Mappings and Usage Comments</i>	<i>Comments</i>
1138	DisplayQty	N			
1082	SecondaryDisplayQty	N			
1608	InitialDisplayQty	N	New		Only to be used in the ExecutionReport
1083	DisplayWhen	N			
1084	DisplayMethod	N			
1085	DisplayLowQty	N			Required when DisplayMethod = 3
1086	DisplayHighQty	N			Required when DisplayMethod = 3
1087	DisplayMinIncr	N			Can be used to specify larger increments than the standard increment provided by the market. Optionally used when DisplayMethod = 3
1088	RefreshQty	N			Required when DisplayMethod = 2
<i></ DisplayInstruction ></i>					

7 Appendix A - Data Dictionary

Tag	Field Name	Action	Data type	Description	FIXML Abbreviation	Add to / Deprecate from Message type or Component block
1608	InitialDisplayQty	NEW	Qty	Used to convey the initially requested display quantity specified in DisplayQty(1138) on order entry and modification messages in ExecutionReport message. Applicable only in ExecutionReport message where DisplayQty(1138) is the currently displayed quantity and the requested display quantity of the order also needs to be conveyed. The values of the two fields are different as soon as the order is partially filled and also after a refresh of the order whenever DisplayMethod(1084) is not 1=Initial.	@InitDsplyQty	Add to DisplayInstruction component

NOTE: Add new base abbreviation “Init” for “Initial” to FIXML

Add new base abbreviation “Dsply” for “Display” to FIXML and correct deviating abbreviations in <DisplayInstruction> component block

NOTE: Changing FIXML Abbreviations for existing fields will create a significant incompatibility for existing users, so it was decided that while the abbreviation “Dsply” will apply to all future uses of the term, the existing fields in the DisplayInstruction component block will not be modified.

8 Appendix B - Glossary Entries

Term	Definition	Field where used

9 Appendix C - Usage Examples

9.1 InitialDisplayQty

This new field is to be used on ExecutionReports only even though it is part of the DisplayInstruction component block and thus technically available in the order messages as well. The following examples focus on a subset of fields of this component block as follows

- DisplayQty (1138) – quantity to display (order messages) or actual quantity displayed (Execution Report)
- InitialDisplayQty (1608) – explicit quantity to display when it is displayed for the first time
- DisplayWhen (1083) – trigger for the refresh operation, i.e. either upon every partial fill (immediate refresh) or only when the entire displayed quantity has been filled (refresh when exhausted)
- DisplayMethod (1084) – type of quantity to use when refreshing the order (e.g. initial or new)
- RefreshQty (1088) – explicit quantity to display when refreshing the order (DisplayMethod = 2 = New)

Example 1

A new reserve order of 100 is entered into the market that should initially display 50 and also refresh with 50. The order does not match upon entry and is simply added to the book.

NewOrderSingle OrderQty = 100
 DisplayQty = 50
 DisplayWhen = 1 = Exhaust
 DisplayMethod = 1 = Initial

ExecutionReport ExecType = 0 = New
 OrderQty = 100
 DisplayQty = 50 ∩ identical to quantity requested by the order sender
 InitialDisplayQty = 50
 DisplayWhen = 1 = Exhaust
 DisplayMethod = 1 = Initial

The resting order then matches against an incoming order with a quantity of 10.

ExecutionReport ExecType = F = Trade
 OrderQty = 100
 LastQty = 10
 LeavesQty = 90

DisplayQty = 40
InitialDisplayQty = 50
DisplayWhen = 1 = Exhaust
DisplayMethod = 1 = Initial

Example 2

Identical to Example 1, only that the order matches upon entry with a quantity of 10. Message bundling is used to immediately report the trade, i.e. a single Execution Report is used to report the entry as well as the partial fill

NewOrderSingle OrderQty = 100
 DisplayQty = 50
 DisplayWhen = 1 = Exhaust
 DisplayMethod = 1 = Initial

ExecutionReport ExecType = 0 = Trade
 OrderQty = 100
 LastQty = 10
 LeavesQty = 90
 DisplayQty = 40 ⌘ actual first quantity displayed
 InitialDisplayQty = 50 ⌘ quantity requested by the order sender
 DisplayWhen = 1 = Exhaust
 DisplayMethod = 1 = Initial

Example 3

Identical to Example 2, only that the displayed quantity should initially be 50 and only 25 thereafter.

NewOrderSingle OrderQty = 100
 DisplayQty = 50
 DisplayWhen = 1 = Immediate
 DisplayMethod = 2 = New
 RefreshQty = 25

ExecutionReport ExecType = 0 = Trade
 OrderQty = 100
 LastQty = 10
 LeavesQty = 90
 DisplayQty = 40 ⌘ InitialDisplayQty - LastQty
 InitialDisplayQty = 50
 DisplayWhen = 1 = Exhaust
 DisplayMethod = 2 = New
 RefreshQty = 25 ⌘ no impact on DisplayQty yet

The order then matches again with a quantity of 40.

ExecutionReport ExecType = 0 = Trade
 OrderQty = 100
 LastQty = 40
 LeavesQty = 50
 DisplayQty = 25 ⌘ set to RefreshQty defined by the order sender
 InitialDisplayQty = 50
 DisplayWhen = 1 = Exhaust
 DisplayMethod = 2 = New
 RefreshQty = 25