UBS

UBS MTF Trading Notice Rules of Engagement Update

30 June 2016

Dear Member,

UBS MTF would like to announce an update to our FIX implementation.

If an order Cancel or Cancel/Replace request is received by the FIX gateway, and is not accepted, due to a fill or partial fill occurring on the order immediately beforehand, UBS MTF will now generate a second Execution Report indicating that the request has been rejected. This will follow the initial Execution Report advising the details of the fill.

This change is available now in the UBS MTF Test environment, and will be rolled out in production starting 6 July, to be completed by 11 July.

Updated FIX Rules of Engagement (version 3.4) is attached with this Trading Notice.

If you have any queries regarding this notice please contact the UBS MTF Supervisors at +44 20 7568 2052 or <u>ubs_mtf@ubs.com</u>.

UBS MTF Management

Notice 6, 2016

UBS Limited is a subsidiary of UBS AG.

UBS Limited is a company limited by shares incorporated in the United Kingdom registered in England and Wales with number 2035362. Registered office: 1 Finsbury Avenue, London EC2M 2PP.

UBS Limited is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority.



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UBS MTF FIX Interface Rules of Engagement

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UBS Limited is a subsidiary of UBS AG UBS Limited is a company limited by shares incorporated in the United Kingdom registered in England and Wales with number 2035362. Registered office: 1 Finsbury Avenue, London EC2M 2PP. UBS Limited is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority.

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Version	Date	Changes and remarks
<u>3.4</u>	<u>June 2016</u>	Return an execution report following attempted order modification/ cancellation where this is prevented by an execution immediately prior (3.8, Pending messages).
3.3	April 2016	Added tag 15 – Currency in <u>FIX Message details</u> . Updated examples in <u>Uniform Symbology</u> to reflect recent changes by Reuters for XVTX instruments.
3.2	February 2016	Added tag 1 – Account.
3.1	October 2015	Clarifications on requirement to send tag 47, and reject reasons documented for tags 102 and 103. Corrected description of replace request handling for unacknowledged orders.
3.0	September 2015	Major update for new connectivity model. Transact time now sent on all execution reports.
2.5	June 2015	New layout. Timestamp precision increased.
2.4	December 2014	Updated to reflect new names of external organisations.
2.3	September 2013	Clarified MinQty usage.
2.2	June 2012	Tag 9004 – Internalization.
2.1	April 2012	Minor clarifications.
2.0	September 2011	Sent LastLiquidityInd on execution reports.
1.9	August 2011	Refer to ESMA, rather than CESR.
1.8	August 2011	Introduces Bid and Offer order books.
1.7	March 2011	Minor clarifications for pegged orders.
1.6	November 2010	Initial version at launch.

1. Introduction

This document defines UBS MTF's implementation of the FIX protocol.

The document is designed to facilitate the work required to establish trading connectivity and is intended to supplement the published FIX protocol specification [1] and the UBS MTF Rule Book [2].

2. Background

The Markets in Financial Instruments Directive (MiFID) was a catalyst for change in the European execution market place, with the result that the importance of credible electronic trading technology and the ability to harness technology to source liquidity have become paramount for the broking community.

UBS MTF operates as a "dark order book" and continuous matching is performed at the mid, bid or offer price of the primary market.

Access to UBS MTF is restricted to its members and requires seperate documentation to the standard trading terms and conditions that regulate other execution services provided by UBS. This documentation can be obtained via your usual relationship manager, on the web at http://ubs.com/mtf/, or by contacting UBS MTF directly at ubs mtf@ubs.com.

3. Functional Overview

3.1. General

UBS MTF accepts and matches Pegged orders only, on a non-discretionary basis using a price/time priority at the Bid, Mid or Offer of the Primary market. There is no minimum order size on UBS MTF. Members of UBS MTF may send either IOC or Day duration orders, and have the ability to set a Minimum Acceptable Quantity and Limit Price on all orders. Open orders are automatically cancelled at the end of each trading day.

3.2. Order Priority

Orders are matched according to price and time. If multiple orders are eligible to execute at the prevailing reference price, they are executed in the order in which they were received.

3.3. Minimum Acceptable Quantity (MAQ)

Where a partial fill occurs on an order that had an MAQ, should the remaining quantity on that order be below the MAQ the Minimum Acceptable Quantity will fall to one share. Orders received by UBS MTF with an MAQ that is greater than the order quantity are rejected.

3.4. Internalization

By default, orders will be from a member may be self-crossed.

Members can use a FIX instruction of '9004=4' on orders to prevent self-trading or intra-team trading (within the same member entity, see section 6 below).

Where a member operates under more than one member code, these may be configured by UBS MTF to act as a single family for the purpose of this instruction.

3.5. Session Times

UBS MTF operates during regular market hours in Europe, between 08:00 and 16:30 (UK time), and session times match those of the primary market where the underlying security is listed. Matching is not performed outside the primary market's continuous trading phase. There is no trading during auctions or halts. If trading on the primary market is suspended UBS MTF will suspend execution for each affected instrument until continuous trading is resumed. During these times orders may be entered, amended, and cancelled, but will not be executed.

3.6. Time Stamps

The *UTCTimestamp* fields (TransactTime, SendingTime, and OrigSendingTime) may be sent to UBS MTF in either whole seconds, or milliseconds UTC.

Members may elect to receive timestamps from UBS MTF at either second- or millisecond-level precision. This is configured on a per-session basis, and defaults to milliseconds for new sessions.

3.7. Cancel on Disconnect

Order entry sessions are configured by default to automatically cancel all open orders in the event of disconnection. Any outstanding execution reports will be returned during session recovery when connectivity is re-established.

3.8. Pending messages

UBS MTF allows cancellation when a new order has not yet been acknowledged, i.e. the order is in a 'Pending New' state. Amends / Cancels will be rejected by UBS MTF if the order is already in a 'Pending Amend' or 'Pending Cancel' state.

If an order Cancel or Cancel/Replace request is received by the FIX gateway, and is not accepted due to a fill occurring on the order immediately beforehand, a reject message will also be returned in a second Execution Report following the initial Execution Report notifying the member of the fill.

In summary:		
Current Order State	<u>Request</u>	<u>Outcome</u>
Pending New	Pending Cancel	Allowed
Pending New	Pending Amend	Amend is Rejected
Pending Amend / Pending Cancel	Pending Amend/ Pending Cancel	Second Request is Rejected
Working, Fill message in flight	Replace requested	Fill is delivered
		Replace Request is rejected as
		order is fully filled
Working, Partial Fill message in	Replace Requested	Fill is delivered
<u>flight</u>		Replace Request is rejected if

		<u>unsuccessful</u>			
Working, Fill message in flight	Cancel requested	Fill is Delivered			
		Cancel request is rejected as			
		order is fully filled			
Working, Partial Fill message in	Cancel requested	Fill is Delivered			
<u>flight</u>		Cancel request is accepted			
Currei	nt Order State → Request → O	utcome			
Pending New -> Pending Cancel -> Allowed					
Pending New → Pending Amend → Amend is Rejected					
Pending Amend / Pending Cancel \Rightarrow Pending Amend/ Pending Cancel <mark>→ Second Request is Rejected</mark>					

3.9. Drop Copy

Members may request a drop copy feed for executions on their FIX sessions. The format of the execution reports provided by this feed, and session-level messages, correspond to the details in section 7 below.

4. Connectivity

UBS MTF is vendor neutral, although there is existing connectivity with the following providers: Radianz, TNS and Fnetetix. It is also possible for members to cross-connect if they have presence in the Equinix LD4 Data Centre in Slough.

A restricting factor on the number of FIX sessions a member can have is the overall bandwidth of the member's line. The suggested bandwidth for a managed service is a 1MB line and 1G or 10G for a direct cross-connect.

Each member is allocated a TCP/IP port per connection – this port is unique to the member and a single connection is allowed per port.

In UAT, the use of an Internet session is recommended, as this allows members to begin testing and certification whilst awaiting the establishment of production connectivity. A UAT session via the member's chosen transport vendor is also possible, but certification would be delayed until this connectivity is in place.

5. Symbology

UBS MTF lists a subset of stocks in the ESMA list of approved securities for regulated markets, as well as Swiss listed stocks.

5.1. Uniform Symbology

In all cases the Symbol[55] value must be the Uniform Symbology (UMTF) code. This code has been adopted by a number of European execution venues to uniformly identify securities traded across Europe. The following details on how this code is generated have been extracted from the Wikipedia article - <u>Uniform Symbology</u> [1].

The Uniform Symbology Algorithm is designed to be human readable, fit into 6 characters, have no symbol clashes and where possible, be derivable from another, freely available code.

It will consist of a stock code followed by a single, lower case letter designating the primary listing exchange. The stock code will be derived from the "local code" published by the primary exchange. These will be truncated where necessary.

If the local code contains a single letter class designator of A through Z (eg. "STE A") then the single letter class designator shall be retained and the code will be truncated to a maximum of 4 characters, plus the single letter class (A through Z) designator. For some Nordic stocks the share designator will be prefixed with "SDB" (eg. "SDBA"). In this case the "SDB" should be removed and the single letter class (A through Z) designator.

Any codes containing spaces, periods, underscores or second words (other than the single letter class (A through Z) described above) will be truncated at the space, period, etc. All remaining non-alphanumeric characters should be removed.

Market Centre	MIC	Market Code	Sample Local Code	Sample UMTF Code	Sample Company Name	RIC Suffix
Copenhagen Stock Exchange	XCSE	С	DANSK	DANSKc	Danske Bank Ord	СО
Deutsche Borse/Germany	XETR	d	EXS1	EXS1d	iShares DAX ETF	DE
Euronext Amsterdam	XAMS	а	HEIA	HEIAa	Heineken	AS
Euronext Brussels	XBRU	b	INB	INBb	INBEV	BR
Euronext Paris	XPAR	р	RNO	RNOp	Renault	PA
Euronext Lisbon/Portugal	XLIS	u	ALTR	ALTRu	ALTRI SGPS	LS
Helsinki Stock Exchange	XHEL	h	NOK1V	NOK1Vh	Nokia	HE

Market codes by market centre (including examples)

Irish Stock Exchange	XDUB	i	GNC	GNCi	Greencore Group plc	I
Prague Stock Exchange	XPRA	k	BOREY	BOREY	Borealis Exploration	PR
London Stock Exchange	XLON	I	VOD	VODI	Vodafone Group Ord	L
Madrid/Spain (Espana)	XMCE	е	COL	COLe	INMOB Colonial	MC
Borsa Italiana/Milan	XMIL	m	SPM	SPMm	Saipem	MI
Oslo Stock Exchange	XOSL	0	NHY	NHYo	Norsk Hydro	OL
Stockholm Stock Exchange	XSTO	S	VOLB	VOLBs	Volvo B Ord	ST
Budapest Stock Exchange	XBUD	t	OTP	OTPt	OTP Bank PLC	BU
Vienna Stock Exchange	XWBO	V	VIG	VIGv	Vienna Insurance Group	VI
Swiss Exchange/Zurich (blue chip)	XVTX	Z	UBSG	UBSGz	UBS Group AG	S
Swiss Exchange/Zurich (non-blue chip)	XSWX	Z	ACIN	ACINz	Acino Holding AG	S

5.2. Exchange Codes

UBS MTF sends its assigned ISO 10383 MIC Code in the LastMkt<30> field on execution reports. The MIC code for UBS MTF is **XUBS**.

On the incoming order, there is no need to specify an exchange and hence ExDestination<100> is not required. Any value sent in this field will be ignored.

6. UBS MTF-Specific FIX Fields

The following FIX field is specific to UBS MTF:

Тад	Field Name	Notes	Required
9004	Internalization	Provides crossing restrictions 4 (Do not execute against own orders). See section 3.4 above.	N

7. FIX Message details

7.1. Components

7.1.1. Standard Header

Tag	Name	Notes	Required
8	BeginString	FIX.4.2	Y
		Must be the first field in the message.	
9	BodyLength	Must be the second field in the message.	Y
35	MsgType	Must be the third field in the message.	Y
43	PossDupFlag	Always required for retransmitted messages, whether prompted by the sending system or as the result of a resend request.	N
52	SendingTime		Y
49	SenderCompID	As specified by UBS MTF	Y
56	TargetComplD	As specified by UBS MTF	Y
34	MsgSeqNum		Y
50	SenderSubID	May be used to provide the identity of the trader who entered the order.	N
97	PossResend	Required when message may be duplicate of another message sent under a different sequence number.	N
122	OrigSendingTime	Required for message resent as a result of a ResendRequest. If data is not available set to same value as SendingTime	N

7.1.2. Standard Trailer

Тад	Name	Required	Required
10	Checksum	Three byte, simple checksum (see [2] Volume 2: "Checksum	Y
		Calculation " for description).	

7.2. Session-Level Messages

The following messages are supported in both directions:

MsgType	Description
А	Logon
0	Heartbeat
1	Test Request
2	Resend Request
3	Reject
4	Sequence Reset
5	Logout

7.2.1. Login

Tag	Field Name	Comments	Required
	<u>Standard Header</u>	MsgType = A	Υ
98	EncryptMethod	0 (Always unencrypted)	Ν
108	HeartBtInt	Note same value used by both sides	Y
141	ResetSeqNumFlag	Indicates both sides of a FIX session should reset sequence numbers	Ν
	<u>Standard Trailer</u>		Y

7.2.2. Heartbeat

Tag	Field Name	Comments	Required
	<u>Standard Header</u>	MsgType = 0	Y
112	TestReqID	Required when the heartbeat is the result of a Test Request message.	N
	<u>Standard Trailer</u>		Y

7.2.3. Test Request

Tag	Field Name	Comments	Required
	<u>Standard Header</u>	MsgType = 1	Y
112	TestReqID		Y
	<u>Standard Trailer</u>		Y

7.2.4. Resend Request

Tag	Field Name	Comments	Required
	<u>Standard Header</u>	MsgType = 2	Y
7	BeginSeqNo		Y
16	EndSeqNo		Y
	Standard Trailer		Y

7.2.5. Reject

Tag	Field Name	Comments	Required
	<u>Standard Header</u>	MsgType = 3	Y
45	RefSeqNum	MsgSeqNum of rejected message	Y
371	RefTagID	The tag number of the FIX field being referenced.	Ν
372	RefMsgType	The MsgType of the FIX message being referenced.	Ν
373	SessionRejectReason	Code to identify reason for a session-level Reject message.	N
58	Text	Where possible, message to explain reason for rejection	Ν
	<u>Standard Trailer</u>		Y

7.2.6. Sequence Reset

Tag	Field Name	Comments	Required
	<u>Standard Header</u>	MsgType = 4	Υ
123	GapFillFlag		Ν
36	NewSeqNo		Y
	<u>Standard Trailer</u>		Y

7.2.7. Logout

Tag	Field Name	Comments	Required
	<u>Standard Header</u>	MsgType = 5	Y
58	Text		Ν
	<u>Standard Trailer</u>		Y

7.3. Messages from Member to UBS MTF

The following messages may be sent by a Member to UBS MTF:

MsgType	Description
D	New Order - Single
F	Order Cancel Request
G	Order Cancel/Replace Request
Q	Don't know trade

7.3.1. New Order Single

Tag	Name	Comments	Required	Possible Values
	<u>Standard Header</u>	MsgType =D	Y	
109	ClientID	The member ID. If not set will use default configured per session. We will validate set of members per session.	Ν	As assigned by UBS MTF
11	ClOrdID	Identifier of the order as assigned by the member. Must be unique per session, per day.	Y	
18	ExecInst	Instructions for order handling. Amendments to tag 18 are rejected.	Y	M if buying or selling at the mid
				P if buying at offer or selling at bid
				R if buying at bid or selling at offer
55	Symbol	Ticker Symbol	Y	UMTF Code

54	Side	Side of order	Y	1 Buy
				2 Sell
38	OrderQty	Number of shares ordered	Y	
40	OrdType	Order type	Y	P Pegged
60	TransactTime	Time the order was initiated	Y	
47	OrderCapacity	Designates the capacity of the firm placing the order	Y	 A Agency (default) P Principal R Riskless Principal
59	TimeInForce	Day or IOC	Y	0 Day
				3 IOC
44	Price	Optional price limit, specified in the currency of the instrument	N	
15	Currency	If specified, must match the instrument currency code as specified in UBS MTF symbology file.	Ν	ISO 4217 Currency code; with the addition of GBX for instruments traded in Pence sterling.
110	MinQty	Displaying the minimum quantity of an order to be executed acting as an MAQ within UBS MTF	N	The value placed in tag 110 must be either equal or less than the OrderQty (tag 38). If the remaining quantity of a partially filled order falls below the value given here, the effective MinQty becomes one (1) Default : 1
9004	Internalization	Self-execution prevention	N	4 (Do not execute against own orders). See section 2.5. Default: Can cross against own orders

1	Account	Returned on execution reports associated with this order	N	
	<u>Standard Trailer</u>		Y	

7.3.2. Order Cancel Request

Tag	Name	Comments	Required
	<u>Standard Header</u>	MsgType =F	Y
109	ClientID	The member ID. If not set will use default configured per session. We will validate set of members per session.	
11	ClOrdID	Unique identifier of cancel request as assigned by participant	
41	OrigClOrdlD	ClOrdID of the originating order	Y
55	Symbol	Must match original order	Y
54	Side	Must match original order	Y
60	TransactTime	Time the cancel request was initiated	Y
	<u>Standard Trailer</u>		Y

7.3.3. Order Cancel Replace Request

Tag	Name	Comments	Required	Possible Values
	<u>Standard Header</u>	MsgType =G	Y	
109	ClientID	The member ID. If not set will use default configured per session. We will validate set of members per session.	Ν	As assigned by UBS MTF
11	ClOrdID	Identifier of the order as assigned by the participant. Must be unique per session, per day.	Y	
41	OrigClOrdID	ClOrdID of the order to be replaced.	Y	
18	ExecInst	Must match original order.	Y	
55	Symbol	Must match original order.	Y	UMTF Code
54	Side	Must match original order.	Y	
38	OrderQty	New order quantity	Y	
40	OrdType	Must match original order.	Y	Р
60	TransactTime	Time the replace request was initiated	Y	
47	OrderCapacity	Designates the capacity of the firm placing the order.	N ¹	A Agency (default)
		Must match original order if set.		P Principal
				R Riskless Principal
59	TimeInForce	Must match original order if set.	Ν	
44	Price	New limit price	Ν	Optional price

¹ This will become mandatory in the next RoE update; expected in 2016.

				limit
15	Currency	Must match original order if set.	Ν	ISO 4217 Currency code; with the addition of GBX for instruments traded in Pence sterling.
110	MinQty	Displaying the minimum quantity of an order to be executed acting as an MAQ within UBS MTF.	Ν	The value placed in tag 110 must be either equal or less than the OrderQty (tag 38). If the remaining quantity of a partially filled order falls below the value given here, the effective MinQty becomes one (1) Default : 1
9004	Internalization	Must match original order if set.	lf received on original order	
1	Account	Returned on execution reports associated with this order Must match original order if set. Otherwise amend will be rejected.	If not set value from original order is preserved.	
	<u>Standard Trailer</u>		Υ	

7.3.4. Don't Know Trade (DK)

Tag	Field Name	Comments	Required	Possible Values
	<u>Standard Header</u>	MsgType = Q	Υ	
109	ClientID	The member ID. If not set will use default configured per session. We will validate set of members per session.	N	As assigned by UBS MTF
37	OrderID	Order ID as identified on problem execution	Y	
17	ExecID	Execution ID of problem execution	Y	

127	DKReason		Y	 A = Unknown Symbol B = Wrong Side C Quantity exceeds order D No matching order E Price exceeds limit Z Other
55	Symbol	Must match original order	Y	
54	Side	Must match original order	Υ	
38	OrderQty	Must match original order	N	
	<u>Standard Trailer</u>		Y	

7.4. Messages from UBS MTF to Member

UBS MTF may send the following messages to members:

7.4.1. **Execution Report**

Tag	Name	Comments	Required	Possible Values
	<u>Standard Header</u>	MsgType =8	Y	
37	OrderID	Identifier of the order as assigned by UBS MTF. Unique across all orders on a daily basis.	Y	
11	ClOrdID	Identifier of replacement order as assigned by participant.	Y	
41	OrigClOrdlD	OrderID for which cancellation or replacment was requested	Y ²	
17	ExecID	Identifier of the execution message. Unique on a daily basis.	Y	
150	ExecType	Describes the type of execution report	Y	0 New
				1 Partial Fill
				2 Fill
				4 Cancelled
				5 Replaced
				8 Rejected
20	ExecTransType	Identifies transaction type	Y	0 New
				1 Cancel
19	ExecRefID	Identifies cancelled execution	Y ³	Execld of the cancelled

 $^{^{\}rm 2}$ Required If sent in response to Cancel or Cancel/Replace $^{\rm 3}$ If ExecTransType=1 (Trade cancel)

				execution, if
				ExecTransType= 1
55	Symbol	As sent on the originating order	Y	
54	Side	As sent on the originating order	Y	
38	OrderQty	As sent on the originating order	Y	
39	OrdStatus	Current status of the order	Y	0 New
				1 Partially Filled
				2 Filled
				4 Cancelled
				5 Replaced
				6 Pending
				Cancel (i.e.
				result of Order
				Cancel Request)
				8 Rejected
				E Pending Replace (i.e.
				result of Order
				Cancel/Replace
				Request)
32	LastShares	Quantity of shares bought/sold on this	lf 150=1	Integer
		(last) fill	or 2	5
31	LastPx	Price of this (last) fill	lf 150=1	
			or 2	
15	Currency	Populated if specified on New Order –	If sent on	ISO 4217
		Single message (<u>35=D</u>)	35=D	Currency code;
				with the addition of GBX
				for instruments
				traded in Pence
				sterling.
				5.5g.
30	LastMkt	Venue of execution of this (last) fill	If 150=1	XUBS
29	LastCapacity	Capacity on order execution. This	or 2 If 150=1	1 Agent
29	LastCapacity	Capacity on order execution. This reflects the order capacity.	or 2	1 Agent 3 Riskless
		reflects the order capacity.	012	Principal
				4 Principal
151	LeavesQty	Amount of shares open for further	Y	Гтпсри
		execution		
14	CumQty	Amount of executed shares on the	Y	
6	ΔυσΡγ	order	Y	
6 60	AvgPx TransactTime	Average price of all fills on the order	Y Y	
00	Transactime	Time the transaction represented by this Execution Report occurred	T	
851	LastLiquidityInd	Applicable only on ExecTransType(150)		1 Added

		of Partial or Filled.		Liquidity 2 Removed Liquidity
58	Text	Additional information if ExecType=8(Rejected)	Ν	
103	OrdRejReason	Additional information if ExecType=8(Rejected)		 0 Broker Option 1 Unknown Symbol 2 Exchange Closed 6 Duplicate Order
1	Account		If received on original order	
	<u>Standard Trailer</u>		Y	

7.4.2. Order Cancel Reject

Tag	Name	Comments	Required	Possible Values
	<u>Standard Header</u>	MsgType =9	Y	
37	OrderID	Identifier of the order as assigned by UBS MTF.	Y	
39	OrdStatus	Current status of the order	Y	 0 New 1 Partially Filled 2 Filled 4 Cancelled 5 Replaced 6 Pending Cancel (i.e. result of Order Cancel Request) 8 Rejected E Pending Replace (i.e. result of Order Cancel/Replace Request)
11	ClOrdID	ClOrdID as assigned by the order cancel or replace request	Y	
41	OrigClOrdID	As sent on the originating order	Y	
58	Text		N	
102		CxlRejReason	Y	0 Too late to cancel
				1 Unknown order
				2 Exchange

				option
				3 Order already in Pending Cancel or Pending Replace status
434		CxIRejResponseTo	N	1 Order cancel request
				2 Order cancel/replace request
	Standard Trailer		Y	

7.5. Order Rejection Codes

The following Rejection Codes may be sent back to Members in the event of an order reject; these are in addition to the reason code in tag 103. This is not a comprehensive list, and other messages may also appear in tag 58. Additional values for tags 102 and tag 103 are reserved for future use.

Code (Tag 58)	Description
XE001	System is not enabled
XE002	Market is not open
XE003	Order is not eligible for trading
XE004	Order is not eligible for crossing
XE006	Instrument is not open
XE007	Market manually disabled
XE008	Instrument manually disabled
XE010	Account disabled
XE011	Instrument suspended

8. References

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