

[PRODUCTION] Aquis Drop Copy FIX

4.2 Technical Specification

Version 1.9

Contents

Version History	3
1 Introduction	4
1.1 Enquiries / Support	4
2 Connectivity and Configuration.....	4
2.1 Network Connectivity	4
2.2 Drop Copy Sesion Configuration.....	4
3 FIX Message Header and Trailer.....	5
3.1 Message Header	5
3.2 Message Trailer	5
4 FIX Session Level Management	5
4.1 Sequence Numbers	6
4.2 Logon	6
4.3 Recovery	6
4.4 Heartbeat and Test Request	7
4.5 Logout	7
4.6 Reject	8
5 Drop Copy Report Messages	8
5.1 Execution Report	8
5.2 Trade Capture Report Acknowledgement.....	11

Version History

Version	Date	Comments
1.0	June 2014	Initial version
1.1	April 2017	Update to tag 39 in Execution Report
1.2	December 2017	Update to tags 22, 48, 207 and 375 in Execution Report
1.3	April 2018	Addition of tags 1, 40, 44, 59, 111, 126, 128 and 382 to Execution Report; Update to comments in Execution Report; Addition of Trade Capture Report Acknowledgement message
1.4	July 2018	Addition of tag 30 to Execution Report; Update to tag 851 in Execution Report; Addition of multiple drop copy functionality
1.5	November 2018	Update to tag 829 in Trade Capture Report Acknowledgment; Update to tag 30 in Execution Report
1.5.1	May 2021	Update to tag 30 in Execution Report
1.6	February 2022	Addition of tag 880 in Execution Report
1.7	May 2022	Addition of tag 18, 1724, 8013 and 8015 in Execution Report Updates to tags 20,30,39,40,59 in Execution Report
1.8	September 2023	Updates to tag 15 in Execution and Trade Capture Report Acknowledgement. Updated design of Specification in line with Aquis rebrand
1.9	July 2024	Addition of tag 109 in Execution report

1 Introduction

This document describes the FIX 4.2-based trade drop copy service developed by Aquis Exchange (Aquis) to provide trading Members with a real-time feed of their trading activity on the Aquis MTF. A single drop copy session can be configured to provide reports for trading activity across all of the Member's trading sessions to Aquis, whether they use FIX 4.2 connections, or binary ATP (Aquis Trading Protocol) connections, or a mixture of both. Members wishing to have more than one drop copy session should contact support@aquis.eu.

The document is intended to supplement the FIX Protocol specification available at www.fixprotocol.org by describing the message types, fields and values that are supported. Both necessary and optional parameters are identified, along with any specific usage and meaning adopted by Aquis.

This document should be read together with the Trading Platform Guide, which provides an overview of the services and functionality offered by Aquis.

1.1 Enquiries / Support

Please contact the Aquis support team (email support@aquis.eu) for any questions related to this document.

2 Connectivity and Configuration

2.1 Network Connectivity

Aquis will provide trading Members (or their representatives) with IP address and port information to establish a TCP/IP connection for the drop copy session. Connectivity options (co-location, leased line, extranet) should be discussed with the Aquis Networks team.

Aquis can provide a drop copy service from the Aquis test environment and subsequently from both the primary and backup production trading environments, as required.

2.2 Drop Copy Sesion Configuration

Aquis will agree SenderCompID / TargetCompID values with the Member to identify their drop copy session and to identify Aquis MTF as the source venue. These fields are case-sensitive, with a maximum field size of 16 characters.

Aquis expects the Member to be the initiator of the session for the drop copy service.

3 FIX Message Header and Trailer

The following sections detail the FIX tags and values that Aquis expects and supports in the header and trailer of incoming and outgoing FIX 4.2 messages.

3.1 Message Header

Tag	Field name	Red'd	Comments
8	BeginString	Y	FIX.4.2 (Always unencrypted, must be first field in message)
9	BodyLength	Y	(Always unencrypted, must be second field in message)
35	MsgType	Y	(Always unencrypted, must be third field in message)
34	MsgSeqNum	Y	Message sequence number (two independent streams inbound to Aquis and outbound from Aquis)
43	PossDupFlag	N	Set to Y on retransmitted messages (e.g. after Resend Request)
49	SenderCompID	Y	ID representing Aquis MTF (on messages from Aquis); ID of trading Member session receiving the drop copy, as agreed with Aquis (on messages from the drop copy recipient)
52	SendingTime	Y	Time of message transmission in UTC
56	TargetCompID	Y	ID of trading Member session receiving the drop copy, as agreed with Aquis (on messages from Aquis); ID representing Aquis MTF (on messages from the drop copy recipient)
122	OrigSendingTime	N	For retransmitted messages (<i>PossDupFlag</i> = Y), the time in UTC that the message was initially sent. If not available, current sending time may be used

3.2 Message Trailer

In the FIX message trailer, Aquis expects and supports only the mandatory *Checksum* (10) as the last field in each message.

4 FIX Session Level Management

This section identifies the messages used to establish, maintain and conclude a FIX drop copy session, and to re-establish a session after a disconnection including the recovery of any missed messages.

The structure of these messages corresponds to the standard FIX 4.2 protocol and their use is discussed in more detail below.

4.1 Sequence Numbers

Aquis resets inbound and outbound sequence numbers back to one overnight, ready for the next trading day. Counterparties should do the same.

Messages should be sent and received, and processed, in a sequential order. During an established FIX session, if a message is received with a lower than expected sequence number (i.e. number already seen) then Aquis will logout the session and drop the connection. If a message is received with an unexpectedly high sequence number then Aquis will respond with a Resend Request to recover the missing messages before proceeding.

4.2 Logon

The first message Aquis expects to receive on a drop copy session after the TCP/IP connection has been established is a Logon message (MsgType (35) = A).

The SenderCompID and TargetCompID fields are validated by Aquis against the expected configuration. If this validation fails, the connection is terminated without sending any message.

If all is well, Aquis responds with a Logon message to the counterparty. The SenderCompID and TargetCompID fields are validated by Aquis against the expected trading configuration. If this validation fails, the connection is terminated without sending any message. The heartbeat interval HeartBtInt (108) will also be specified in the Logon message. This value is specified in seconds and should be set at value between 5 and 120 seconds, as required by the counterparty.

The sequence number on the initial Logon for each trading day should be one. If the Logon is to re-establish a broken connection, the sequence number should correspond to the next expected inbound sequence number. If there have been connection problems, or following a drop in connectivity where messages were lost, the sequence number may be higher than expected and message recovery will follow (see below). However, if the sequence number is unexpectedly low then Aquis will drop the connection.

If unexpectedly high sequence numbers are detected by either party, message recovery should be initiated. Otherwise the session is now established and should be maintained throughout the trading day.

4.3 Recovery

After a drop in connectivity, it is possible that the counterparty will have missed messages (execution reports). This will be detected by the counterparty receiving an unexpectedly high sequence number on the Logon message from Aquis and they should initiate message recovery by sending a Resend Request (MsgType = 2).

A Resend Request should be processed, even if it is received with a high sequence number. As per the FIX protocol, the Resend Request may be for a set range of messages, or open ended by setting EndSeqNo (16) = 0. Aquis handles either type of request.

Aquis will respond to the Resend Request by resending any application messages that have been missed and by using the Sequence Reset – Gap Fill message (MsgType = 4, GapFillFlag (123) = Y) to cover consecutive administrative messages. All retransmitted messages will be sent with PossDup (43) = Y.

Similarly, if there have been connectivity problems, it is possible that the sequence number on the Logon response from the counterparty will be unexpectedly high. Aquis will issue a Resend Request for the missed messages. As there are no application messages sent to Aquis over the drop copy session, the counterparty should be able to reply with a Sequence Reset – Gap Fill message to allow Aquis to reset sequence numbers.

4.4 Heartbeat and Test Request

Aquis will send a Heartbeat message (MsgType = 0) if no other messages have been sent for the agreed heartbeat interval, HeartBtInt.

Similarly, if no messages have been received for HeartBtInt +1 seconds then Aquis will send a Test Request message (MsgType = 1) to test the connection and the responsiveness of the counterparty application. The Test Request message carries a TestReqID (112) value and the expected response is a Heartbeat message echoing back this TestReqID value.

If there is no response to the Test Request and overall no messages have been received for 2 x HeartBtInt seconds then Aquis will logout the client and terminate the connection.

Aquis expects the counterparty FIX application to behave similarly, in order to maintain the session and to detect and react to abnormal behaviour.

4.5 Logout

Either side may send a Logout message (MsgType = 5) to end the FIX session. Unless there has already been a break in connectivity, the sender should continue to process messages until it receives a Logout message in response and it may then terminate the connection.

A network level disconnection or an absence of messages for two heartbeat intervals are also treated by Aquis as if the counterparty had logged out.

Under normal circumstances, Aquis will maintain the FIX session throughout the trading day and only issue a Logout prior to the maintenance window at the end of the day, after market close.

4.6 Reject

Aquis uses a session level Reject message (MsgType = 3) to respond to messages that break the session protocol or contain missing or incorrect fields. However, this should be rare, as the counterparty should only be sending simple session level messages to Aquis.

If Aquis does receive application (trading) messages on a drop copy session this indicates a serious misconfiguration and rather than reject Aquis will Logout to alert both sides to this problem.

5 Drop Copy Report Messages

5.1 Execution Report

Drop copy trade reports (and any trade bust reports) are sent as FIX Execution Report messages (MsgType = 8).

In addition, unless configured for trade reports only, the drop copy service publishes FIX Execution Reports corresponding to Conditional IOI, order add, order cancel, Firm Up Invites and order cancel/replace acknowledgements on the trading Member's related trading sessions.

Please note that rejected messages on the trading sessions are not reported by the drop copy service.

The fields and values provided by Aquis on these reports are detailed below (a key detailing whether the field applies to order acknowledgments, trade reports or both is included):

Tag	Field Name	Key	Comments
	<i>Standard Header</i>	A	<i>MsgType (35) = 8</i>
1	Account	O	If specifying account, House or Client account
6	AvgPx	A	Average price of quantity so far traded on this order (zero if not a trade)
11	ClOrdID	A	Encodes the related trading session and the FIX order ID or the ATP order reference (depending on how order was entered) Format is <sessionId>#<orderId> e.g. FIRM01#123A07
14	CumQty	A	Cumulative quantity traded on this order
15	Currency	A	If using ISIN or RIC for the security ID, currency in which the security is traded
17	ExecID	A	ID for the report, unique for the trading day
18	ExecInst	A	Instructions for order handling M = Midpoint peg (pegged to midpoint of PBBO)
19	ExecRefID	T	Sent for a trade bust (<i>ExecTransType</i> = 1) to identify the earlier trade

20	ExecTransType	A	Values sent by Aquis drop copy: 0 = New (for order related messages and trade reports) 1 = Cancel (for a trade bust)
22	IDSource	A	If using alternative symbology, values sent by Aquis drop copy: 4 = ISIN 5 = RIC 8 = Exchange Code
30	LastMkt	T	Provides the Aquis MIC for execution: AQXE – Aquis PLC lit trades including MaC AQXA – Aquis PLC AoD trades AQXD – Aquis PLC non-display (AMP) trades AQEU – Aquis Europe lit trades including MaC AQEA – Aquis Europe AoD trades AQED – Aquis Europe non-display (AMP) trades
31	LastPx	A	Price of a trade report
32	LastShares	A	Quantity of a trade report
37	OrderID	A	Aquis order reference number
38	OrderQty	A	Quantity of original order
39	OrdStatus	A	Status of the order, values sent by Aquis drop copy: 0 = New 1 = Partially Filled 2 = Filled 3 = Done for Day 4 = Cancelled 5 = Replaced C = Expired
40	OrdType	A	Order type, values sent by Aquis drop copy: 2 = Limit 5 = Market on Close, for the Aquis Market at Close (MaC) P = Pegged
41	OrigClOrdID	O	Encodes the related trading session and the previous FIX order ID (for a solicited FIX Cancel or Cancel/Replace) Format is <sessionID>#<orderID> e.g. FIRM01#101A06
44	Price	A	Limit price, if provided on the original order
47	OrderCapacity	O	Order capacity, values sent by Aquis drop copy: A = AOTC P = DEAL R = MTCH
48	SecurityID	A	If using alternative symbology, RIC (primary or Aquis), ISIN or Aquis security ID depending on the value of <i>IDSource</i> (22)
54	Side	A	Side of the order or trade
55	Symbol	A	Uniform symbology code for the security
59	TimeInForce	A	Time in force, values sent by Aquis drop copy: 0 = Day 3 = Immediate or Cancel (IOC) 4 = Fill or Kill (FOK)

			6 = Good Till Date 8 = Good For Auction (GFA)
60	TransactTime	A	Time of this event in UTC
109	ClientID	A	OptimX tag used to specify end client details. *OptimX functionality will not be enabled until further notice*
111	MaxFloor	O	Display quantity applicable to an iceberg order
126	ExpireTime	O	Date/time in UTC of order expiry for a Good Till Date order, with <i>TimeInForce</i> (59) = 6
128	DeliverToCompID	A	The value originally sent to Aquis as the <i>OnBehalfOfCompID</i> if received from a service bureau
150	ExecType	A	Reason for this report, values sent by Aquis drop copy: 0 = New 1 = Partially Filled 2 = Filled 3 = Done for Day 4 = Cancelled 5 = Replaced C = Expired D = Restated
151	LeavesQty	A	Quantity still open for execution
207	SecurityExchange	A	If using ISIN for the security ID, MIC for the security's market of listing
375	ContraBroker	T	The BIC code of the clearer or 'SELF' for self-clearing
382	NoContraBrokers	T	If present value will = 1
851	LastLiquidityInd	T	Trade liquidity indicator, values sent by Aquis drop copy: 1 = Added liquidity 2 = Removed liquidity 4 = Auction (for AoD and MaC trades)
880	TVTIC	T	The trading venue transaction identification code (TVTIC) required for transaction reporting purposes
1724	DEAFlag	A	Whether the order originates from a Direct Electronic Access Client 0 = No (Default) 5 = Yes
8002	ConditionalType	A	1 = IOI (Invite) 2 = Firm Up
8013	TrdRegPublicationReasons	A	Indicates the pre-trade transparency waiver under which the order/trade was conducted. Only provided when OrdType (40) = P. Order flag returned when OrdStatus (39) = 0,1,2 and 5 3 = Reference Price Waiver 9 = Large in Scale Waiver
8015	OrderAttributeTypes	A	Tag can contain multiple values (separated by spaces). The presence of a value indicates the following: 2 = Liquidity provision activity 4 = Algorithmic order

O = applies to order acknowledgments only
T = applies to trade reports only
A = applies to all (orders & trades)

5.2 Trade Capture Report Acknowledgement

Drop copy trade capture report acknowledgements are sent as FIX Trade Capture Report Acknowledgment messages (*MsgType* = AR).

Please note that rejected messages on the trading sessions are not reported by the drop copy service.

The fields and values provided by Aquis on these acknowledgments are detailed below:

Tag	Field Name	Comments
<i>Standard Header</i>		<i>MsgType</i> (35) = AR
1	Account	If specifying account, House or Client account
15	Currency	If using ISIN or RIC for the security ID, currency in which the security is traded
17	ExecID	ID for the report, unique for the trading day
22	IDSource	If using alternative symbology, values sent by Aquis drop copy: 4 = ISIN 5 = RIC 8 = Exchange Code
31	LastPx	Price of the trade
32	LastQty	Quantity of the trade
48	SecurityID	If using alternative symbology, RIC (primary or Aquis) or ISIN depending on the value of <i>IDSource</i> (22)
55	Symbol	Uniform symbology code for the security
60	TransactTime	Time the transaction represented by this TCR occurred (expressed in UTC)
75	TradeDate	Date of trade referenced in this message in YYYYMMDD format
128	DeliverToCompID	The value originally sent to Aquis as the <i>OnBehalfOfCompID</i> if received from a service bureau
150	ExecType	Reason for this report, values sent by Aquis drop copy: F = Trade 8 = Rejected
207	SecurityExchange	Required if ISIN is used to identify the security, <i>IDSource</i> (22) = 4 (ISIN). Aquis will accept valid MICs
571	TradeReportID	Unique identifier for the Trade Capture Report
828	TrdType	Trade type indicating: 1 = Block Trade (default if not supplied, LIS_CROSS) 6 = Weighted Average Price Trade (defined in tag 829)
829	TrdSubType	Further definition to tag 828 as required: 0 = Block Trade for clearing 1 = Block Trade not for clearing 2 = Volume Weighted Average Price Trade for clearing

		3 = Volume Weighted Average Price Trade not for clearing 4 = Time Weighted Average Price Trade for clearing 5 = Time Weighted Average Price Trade not for clearing
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