TQD201 · TECHNICAL SPECIFICATION

Turquoise Derivatives FIX 4.2 Specification

ISSUE 1.2 · 16 MAY 2011

Contents

1 Introduction

1.1 Purpose

The purpose of this publication is to provide participants with the knowledge and technical details necessary for accessing and using the Turquoise derivatives trading system.

This FIX specification provides essential information for participants and independent software vendors in the functional design of their application in order to interface with the Turquoise derivatives platform using the Financial Information eXchange (FIX) Protocol. This document defines the subset of the Financial Information eXchange (FIX) messages that Turquoise supports on its FIX trading interface.

The Turquoise derivatives platform utilises FIX 4.2 with a few exceptions as specified in this document.

The FIX interface to Turquoise does not provide functions related to Market Making. Participants who intend to be Market Makers must use the native SOLA Access Information Language (SAIL) protocol.

This document is designed to supplement the FIX protocol documentation that can be found at www.fixprotocol.org rather than be a complete and self-sufficient reference.

Note: The only FIX messages and fields accepted by Turquoise are the ones described in this document. Unsupported fields are rejected.
Exceptions specific to Turquoise are shown throughout the document in bold-italics style format.

1.2 Readership

The target audience for this publication is the business or Information Technology level of an organisation interested in the functional design of the Turquoise derivatives platform.

1.3 Revision History

This document has been through the following iterations:

Issue	Date	Description
1.0	21 December 2010	Publication of initial version
1.1	04 April 2011	Update to initial version
1.2	16 May 2011	Accuracy adjusted to 4 decimal places from 6 decimal places

In subsequent issues, where amendments have been made to the previous version, these changes will be identified using a series of side bars as illustrated opposite.

2 Message Definitions

2.1 Supported Messages Types

The table below lists the Turquoise derivatives FIX interface message names and types:

Type	FIX Messages	Originator
Application	D - New Order Single	Client
	G - Order Cancel/Replace Request	Client
	F - Order Cancel Request	Client
	R - Quote Request	Client
	8 - Execution Report	Turquoise
	9 - Order Cancel Reject	Turquoise
	b - Quote Acknowledgement	Turquoise
	c - Security Definition Request	Client
	d - Security Definition	Turquoise
	AF - Order Mass Status Request [1]	Client
Administrative	3 - Reject	Client / Turquoise
	0 - Heartbeat	Client / Turquoise
	A - Logon	Client / Turquoise
	2 - Resend Request	Client / Turquoise
	5 - Logout	Client / Turquoise
	1 - Test Request	Client / Turquoise
	4 - Sequence Reset	Client / Turquoise

1. Taken from FIX 4.3

2.2 Header and trailer

For additional descriptive or definitive information on Tag Numbers and Field Names, refer to Field Definitions.

2.1.1 Standard Message Header

Tag	Field Name	Req	Comments
8	BeginString	Y	= FIX.4.2 Must be first field in message.
9	BodyLength	Y	Must be second field in message.
35	MsgType	Y	Must be third field in message.
49	SenderCompID	Y	Assigned value used to identify the sender in a FIX session
50	SenderSubID	N	Assigned value used to identify specific message originator (desk, trader, etc.).
56	TargetCompID	Y	Assigned value used to identify the receiver in a FIX session.
57	TargetSubID	N	Assigned value used to identify specific individual or unit intended to receive
34	MsgSeqNum	Y	Message sequence number.
52	SendingTime	Y	Time of message transmission.
43	PossDupFlag	N	Always required for retransmitted messages, whether prompted by the sending system or as the result of a resend request.
122	OrigSendingTime	N	Required for message resends. If data is not available, set to same value as SendingTime.
97	PossResend	N	Required when message may be duplicate of another message sent under a different sequence number.

2.1.2 Standard Message Trailer

Tag	Field Name	Req	Comments
10	CheckSum	Y	Always unencrypted and last field in message.

3 Administrative Messages

For additional descriptive or definitive information on Tag Numbers and Field Names, refer to Field Definitions.

3.1 A: Logon

Tag	Field Name	Req	Comments
	Standard Header	Y	[MsgType 35=A]
98	EncryptMethod	Y	Must be set to 0.
108	HeartBtInt	Y	0 (zero) means that no HeartBeat message will be sent. The value provided must not be less than 30.
141	ResetSeqNumFlag	N	Indicates both sides of a FIX session should reset sequence numbers.
383	MaxMessageSize	N	Can be used to specify the maximum number of bytes supported for messages received.
	Standard Trailer	Y	

3.2 0: Heartbeat

Tag	Field Name	Req	Comments
	Standard Header	Y	[MsgType 35=0]
112	TestReqID	N	Required when the Heartbeat is the result of a Test Request message. Used only in Heartbeat message from server to client.
	Standard Trailer	Y	

3.3 1: Test Request

Tag	Field Name	Req	Comments
	Standard Header	Y	[MsgType 35=1]
112	TestReqID	Y	Identifier included in Test Request message to be returned in resulting Heartbeat
	Standard Trailer	Y	

3.4 2: Resend Request

Tag	Field Name	Req	Comments
	Standard Header	Y	[MsgType 35=2]
7	BeginSeqNo	Y	Message sequence number of first message in range to be resent
16	EndSeqNo	Y	Message sequence number of last message in range to be resent.
	Standard Trailer	Y	

3.5 3: FIX Protocol Error / Reject

Tag	Field Name	Req	Comments
	Standard Header	Y	[MsgType 35=3]
45	RefSeqNum	N	MsgSeqNum of rejected message.
371	RefTagID	N	The Tag number of the FIX field being referenced.
372	RefMsgType	N	The MsgType of the FIX message being referenced.
373	SessionRejectReason	N	Code to identify reason for a session-level Reject message.
58	Text	N	Where possible, message to explain reason for rejection.
	Standard Trailer	Y	

3.6 4: Sequence Reset

Tag	Field Name	Req	Comments
	Standard Header	Y	[MsgType 35=4]
123	GapFillFlag	N	Indicates that the Sequence Reset message is replacing administrative or application messages which will not be resent.
36	NewSeqNo	Y	Cannot be lower than the last [MsgSeqNum 34].
	Standard Trailer	Y	

3.7 5: Logout

Tag	Field Name	Req	Comments
	Standard Header	Y	[MsgType 35=5]
58	Text	N	Free format text string.
	Standard Trailer	Y	

4 Application Messages

4.1 D: New Order - Single

Tag	Field Name	Req	Comments
	Standard Header	Y	[MsgType 35=D]
11	ClOrdID	Y	Unique identifier of the order as assigned by institution.
1	Account	N	Account mnemonic as agreed between broker and institution.
167	SecurityType	Y	Indicates if Option (OPT), a Future (FUT), or ***Strategy (STR)***.
55	Symbol	Y	Mandatory
201	PutOrCall	N	Mandatory for Option.
202	StrikePrice	N	Mandatory for Option.
200	MaturityMonthYear	N	Mandatory for Option and Future.
205	MaturityDay	N	Can be used in conjunction with MaturityMonth-Year <200> to specify a particular maturity date.
206	OptAttribute	N	Indicates a corporate action
54	Side	Y	Buy or Sell.
60	TransactTime	N	Time at which this order request was initiated/released by the trader or trading system.
38	OrderQty	Y	Number of shares ordered.
40	OrdType	Y	Please refer to Field Definitions
44	Price	N	Required when [OrdType 40=2 or 4].
59	TimeInForce	N	Absence of this field indicates Day order.
432	ExpireDate	N	Conditionally required if [TimeInForce 59=6] (GTD)
58	Text	N	Free format text string.
77	OpenClose	Y	Please refer to Filed Definitions
47	Rule80A	Y	Identify the type of account.
99	StopPx	N	Required when [OrdType 40=4]
110	MinQty	N	Minimum quantity of an order to be executed.
210	MaxShow	N	Maximum number of shares within an order to be shown to other customers
8001	***AccountProfile***	N	Indicate the type of trader
	Standard Trailer	Y	

4.2 G: Order Cancel/Replace Request (Order Modification Request)

All fields can be modified except; [OrigClOrdID 41], [Symbol 55], [SecurityType 167], [PutOrCall 201], [StrikePrice 202], [MaturityMonthYear 200], [MaturityDay 205], [OptAttribute 206], and [Side 54].

Tag	Field Name	Req	Comments
	Standard Header	Y	[MsgType 35=G]
37	OrderID	N	Unique identifier of most recent order as assigned by broker.
1	Account	N	Account mnemonic as agreed between broker and institution.
41	OrigClOrdID	Y	[ClOrdID 11] of the previous order (NOT the initial order of the day) when cancelling or replacing an order.
11	ClOrdID	Y	Unique identifier of replacement order as assigned by institution. Note that this identifier will be used in [ClOrdID 11] field of the Cancel Reject message if the replacement request is rejected.
167	SecurityType	Y	Indicates if Option (OPT), a Future (FUT), or ***Strategy (STR)***.
55	Symbol	Y	Must match original order. Mandatory
201	PutOrCall	N	Must match original order. Mandatory for Option.
202	StrikePrice	N	Must match original order. Mandatory for Option.
200	MaturityMonthYear	N	Must match original order. Mandatory for Option and future.
205	MaturityDay	N	
206	OptAttribute	N	Must match original order
54	Side	Y	Must match original side.
60	TransactTime	Y	Time this order request was initiated/released by the trader or trading system.
38	OrderQty	Y	**Represent the remaining active quantity.**
40	OrdType	Y	Please refer to Field definitions
44	Price	N	Required when [OrderType 40=2 or 4].
59	TimeInForce	N	Absence of this field indicates Day order.
99	StopPx	N	Required when [OrdType 40=4]

432	ExpireDate	N	Conditionally required if [TimeInForce 59=6] (GTD).
58	Text	N	Free format text string.
77	OpenClose	Y	Please refer to Field Definitions
47	Rule80A	Y	Identifies the type of account.
210	MaxShow	N	Maximum number of shares within an order to be shown to other customers
8001	***AccountProfile***	N	Indicate the type of trader
	Standard Trailer	Y	

4.3 F: Order Cancel Request

Tag	Field Name	Req	Comments
	Standard Header	Y	[MsgType 35=F]
41	OrigClOrdID	Y	[ClOrdID 11] of the previous order (NOT the initial order of the day) when cancelling or replacing an order.
37	OrderID	N	Unique identifier of most recent order as assigned by broker.
11	ClOrdID	Y	Unique ID of cancel request as assigned by the institution.
38	OrderQty	N	Number of shares ordered.
167	SecurityType	Y	Indicates if Option (OPT), a Future (FUT), or ***Strategy (STR)***.
55	Symbol	Y	Must match original order.
201	PutOrCall	N	Must match original order. Mandatory for Option.
202	StrikePrice	N	Must match original order. Mandatory for Option.
200	MaturityMonthYear	N	Must match original order. Mandatory for Option and future.
205	MaturityDay	N	
206	OptAttribute	N	Indicates a corporate action
54	Side	Y	Buy or Sell
60	TransactTime	Y	Time this order request was initiated/released by the trader or trading system.
	Standard Trailer	Y	

4.4 R: Quote Request

This message is used to broadcast a request for a quote on a particular instrument. The request is broadcasted on the HSVF Market Data feed.

Tag	Field Name	Req	Comments
	Standard Header	Y	[MsgType 35=R]
131	QuoteReqID	N	Unique identifier for quote request.
146	NoRelatedSym	N	If provided, must be set to 1.
167	SecurityType	Y	Indicates if Option (OPT), a Future (FUT), or ***Strategy (STR)***.
55	Symbol	Y	Class root symbol for options or strategy symbol.
201	PutOrCall	N	Mandatory for Option.
202	StrikePrice	N	Mandatory for Option.
200	MaturityMonthYear	N	Mandatory for Option and Futures.
205	MaturityDay	N	Can be used in conjunction with MaturityMonthYear <200> to specify a particular maturity date.
206	OptAttribute	N	Indicates a corporate action
38	OrderQty	N	Number of shares ordered.
	Standard Trailer	Y	

4.5 8: Execution Report

Execution Report can be generated for the following:

- An order gets traded
- A trade is cancelled by Turquoise on behalf of a participant
- An order gets eliminated
- An order gets expired
- A 'New Order - Single' confirmation
- An 'Order Cancel/Replace Request' confirmation
- An 'Order Cancel Request' confirmation
- In response to an 'Order Mass Status Request'

Tag	Field Name	Comments
	Standard Header	[MsgType 35=8]
37	OrderID	Required to be unique for each chain of orders. Is set to "NONE" if in response to a New Order Single being rejected.
11	ClOrdID	If provided in the original New Order, Cancel Request, or Order Cancel/Replace.
41	OrigClOrdID	Conditionally required for response to a Cancel or Cancel/ Replace request [ExecType 150=Replaced or Cancelled]. [ClOrdID 11] of the previous order (NOT the initial order of the day) when cancelling or replacing an order. Not provided when [ExecTransType 20=1].
1	Account	Used for firm identification. If provided in the original order.
17	ExecID	Must be unique for each Execution Report message.
20	ExecTransType	See table below for possible values.
19	ExecRefID	Provided when [ExecTransType 20=1] or [ExecTransType 20=2]
150	ExecType	Describes the type of execution report. See table below for possible values.
103	OrdRejReason	May be provided only when [ExecType 150=8] (rejected).
39	OrdStatus	Describes the current state of a CHAIN of orders, same scope as OrderQty, [CumQty 14], [LeavesQty 151], and [AvgPx 6]. See table below for possible values.
38	OrderQty	Quantity of the order (as opposed to [LastShares 32] which refer to the fill).
44	Price	Price of the order (as opposed to [LastPx 31] which refer to the fill). If provided in the original order.
167	SecurityType	Indicates if Option (OPT), a Future (FUT), or **Strategy (STR)**.
55	Symbol	Class root symbol for options or strategy symbol.

201	PutOrCall	For Options only.
202	StrikePrice	For Options only.
200	MaturityMonthYear	For Options and futures only.
205	MaturityDay	For Options and futures only.
206	OptAttribute	Indicates a corporate action
54	Side	Buy or Sell
40	OrdType	Please refer to Field Definitions.
59	TimeInForce	Absence of this field indicates Day order
432	ExpireDate	Provided when [TimeInForce 59=6] (GTD)
32	LastShares	Quantity of shares bought/sold on this (last) fill.
31	LastPx	Price of this (last) fill.
151	LeavesQty	Amount of shares open for further execution. If the [OrdStatus 39=4] (Cancelled), then [LeavesQty 151] could be 0, otherwise [LeavesQty 151] = [OrderQty 38] - [CumQty 14].
14	CumQty	Currently executed shares for chain of orders.
6	AvgPx	Calculated average price of all fills on this order.
60	TransactTime	Time of execution/order creation, expressed in UTC.
77	OpenClose	Please refer to Field Definitions.
442	MultipleReportingType	Indicates the type of instrument the Execution Report refers to. Used with multi-leg securities such as, Options Strategies, Spreads, etc.
10455	***SecurityAltID***	Indicates the Strategy Instrument in Execution Report Message sent for the Strategy. Send only when MultipleReportingType 442 = 2 Example: If 35 = 8 and 442 = 2, then 10455 = Symbol of the Strategy.
527	***SecondaryExecID***	Use to refer to the Strategy Exec ID. Send only when MultipleReportingType 442 = 2 Example: If 35 = 8 and 442 = 2, then 527 = ExecID of the Strategy.
58	Text	If provided in the original order. When [ExecType 150=8] (rejected), contains the text associated with the reason of the rejection.
47	Rule80A	Identifies the type of account.
382	NoContraBrokers	Value will always be 1 when OrdStatus (Tag 39) equals 1 or 2.
375	ContraBroker	Value will be equal to the opposite Broker ID of the trade
584	***MassStatusReqID*** [1]	Required if responding to a Order Mass Status Request. Echo back the value provided by the requester.
	Standard Trailer	

1. Taken from FIX 4.4

The following table defines the use of fields, [ExecType 150], [OrdStatus 39], [ExecTransType 20] according to the action performed on an Order or a Trade (Fill).

Action	[ExecType 150]	[OrdStatus 39]	[ExecTransType20]
New Order accepted and put on book	0 = New	0 = New	0 = New
New Order already received with [PossResend 97=Y]	According to the status of the order at that time	According to the status of the order at that time	3 = Status
A Stop Order is triggered and transformed into a regular order. In this case, the [OrdType 40] is changed to 2 (limit).	0 = New	0 = New	0 = New
Response to a 'Order Mass Status Request' message [MsgType 35=AF]	The current status of the order. 0 = New 1 = Partial fill 2 = Fill	The current status of the order. 0 = New 1 = Partial fill 2 = Fill	3 = Status
Order Traded	1 = Partial fill 2 = Fill	1 = Partial filled 2 = Filled	0 = New
Order Eliminated for one of the following reasons: • by Turquoise • because of an update on the instrument • an 'Immediate or Cancel' order is not filled or partially filled • a MinQty order that cannot be filled immediately for the minimum specified quantity when it is received by Turquoise	4 = Cancelled	4 = Cancelled	0 = New
Order Cancel/Replace accepted and put in the book	5 = Replace	5 = Replaced	0 = New
Order Cancel/Replace accepted and put in the book on a partially filled order	5 = Replace	1 = Partial filled	0 = New
Order Expired	C = Expired	C = Expired	0 = New
Trade Killed (Busted)	1 = Partial fill 2 = Fill	The current status of the order. 0 = New 1 = Partial fill 4 = Cancelled	1 = Cancel

4.6 9: Order Cancel Reject

Tag	Field Name	Comments
	Standard Header	[MsgType 35=9]
37	OrderID	If the order is unknown the OrderID (37) will equal 'NONE', otherwise the OrderID (37) will be populated with the OrderID (37) of the order referenced in the Cancel or Cancel Replace message.
11	ClOrdID	Unique order ID assigned by institution to the cancel request or to the replacement order.
41	OrigClOrdID	[ClOrdID 11] which could not be cancelled/replaced. [ClOrdID 11] of the previous order (NOT the initial order of the day) when cancelling or replacing an order.
39	OrdStatus	Value after this cancel reject is applied.
434	CxlRejResponseTo	Identifies the type of request that a Cancel Reject is in response to.
58	Text	Contains the reason why the Cancel/Replace message has been rejected.
	Standard Trailer	

4.7 b: Quote Acknowledgement

Tag	Field Name	Comments
	Standard Header	[MsgType 35=b]
131	QuoteReqID	Unique identifier for quote request.
297	QuoteAckStatus	Status of the quote acknowledgement. 0 = Accepted 5 = Rejected
300	QuoteRejectReason	Reason Quote was rejected.
	Standard Trailer	

4.8 c: Security Definition Request

Tag	Field Name	Req	Comments
	Standard Header	Y	[MsgType 35=c]
320	SecurityReqID	N	Unique ID of a Security Definition Request.
321	SecurityRequestType	Y	1: Request New Strategy Flexco Security (Name of the security is not supplied) 2: Request List Security Types
	Standard Trailer	Y	

4.9 d: Security Definition

Tag	Field Name	Comments
	Standard Header	[MsgType 35=d]
320	SecurityReqID	Unique ID of a Security Definition Request.
321	SecurityRequestType	Only present if SecurityRequestType=1 in Security Definition Request. 1: Accept security proposal as is 2: Accept security proposal with revisions as indicated in the message 5: Reject security proposal
322	SecurityResponseID	Unique ID of a Security Definition Message.
55	Symbol	Class root symbol for options or strategy symbol dependent on value of SecurityType. For Options/Futures: A Class Root Symbol (1-6 characters) For Strategies: External Symbol (30 character string)
167	SecurityType	Indicates if Option (OPT), a Future (FUT), or Strategy (STR). Mandatory if SecurityRequestType=1 in Security Definition Request.
200	MaturityMonthYear	Provided for Options and Futures only, when [Security-Type 167 = OPT or FUT]
205	MaturityDay	Provided for Options and Futures only, when [SecurityType 167 = OPT or FUT]

206	OptAttribute		Indicates a corporate action
201	PutOrCall		Provided for Options only, when [SecurityType 167=OPT]
202	StrikePrice		Provided for Options only, when [SecurityType 167=OPT]
146	NoRelatedSym		From 2 to 40. Number of legs that make up the instrument. Provided only when [SecurityType 167=STR]. Mandatory if SecurityRequestType=1 in Security Definition Request.
			The following fields are only provided only when [SecurityType 167=STR].
→	***311***	***UnderlyingSymbol***	Strategy Leg Symbol. See [Symbol 55] field for description Mandatory if SecurityRequestType=1 in Security Definition Request.
→	***310***	***UnderlyingSecurityType***	Strategy Leg SecurityType. See [SecurityType 167] field for description Mandatory if SecurityRequestType=1 in Security Definition Request.
→	***317***	***UnderlyingOptAttribute***	Strategy Leg corporate action indicator See [OptAttribute 206] field for description. Mandatory if SecurityRequestType=1 in Security Definition Request.
→	***313***	***UnderlyingMaturityMonthYear***	Strategy Leg Maturity month and year. See [MaturityMonthYear 200] field for description. Mandatory if SecurityRequestType=1 in Security Definition Request.

→	***314***	***UnderlyingMaturityDay***	Strategy Maturity day See [MaturityDay205] field for description. Mandatory if SecurityRequestType=1 in Security Definition Request.
→	***315***	***UnderlyingPutOrCall***	Strategy Leg PutOrCall. See [PutOrCall 201] field for description
→	***316***	***UndelyingStrikePrice***	Stretegy Leg strike price. See [StrikePrice 202] field for description.
→	***319***	***RatioQty***	Strategy Leg Ratio to determine valid quantity. Should not contain decimals Mandatory if SecurityRequestType=1 in Security Definition Request.
→	***54***	***Side***	1: Buy 2: Sell Mandatory if SecurityRequestType=1 in Security Definition Request.
	Standard Trailer		

4.10 j:Business Reject

Business reject [MsgType 35=J] is returned following a rejected Security Definition request [MsgType 35=c].

Tag	Field Name	Req	Comments
	Standard Header	Y	[MsgType 35=j]
45	RefSeqNum	Y	Message Seq Num for the 'j' message
372	RefMsgType	Y	The MsgType of the FIX message being referenced - This should be 'c' when strategy instrument cannot be created.
379	BusinessRejectRefID	Y	[SecurityReqID 320] from the submitted Security Definition request.
380	BusinessRejectReason	Y	Code to identify reason for reject: 0: Other 1: Unknown ID 2: Unknown Security (default value) 3: Unsupported Message Type 4: Appilcation not available 5: Conditionally Required Field Missing

58	Text	Y	Free-form text to explain the reason for rejection.
	Standard Trailer	Y	

4.11 AF: Order Mass Status Request

Execution Report [MsgType 35=8] with [ExecTransType 20=3] (Status) are returned for each active order belonging to the participant.

If no active order belongs to the participant, no response is returned.

Tag	Field Name	Req	Comments
	Standard Header	Y	[MsgType 35=AF]
584	MassStatusReqID	N	Value assigned by issuer of Mass Status Request to uniquely identify the request.
585	MassStatusReqType	N	= 7 (Status for all orders for the participant)
	Standard Trailer	Y	

5 Field Definitions

Field #	Field Name	Description	Field Length
1	Account	Account mnemonic as agreed between broker and institution.	1 to 12
6	AvgPx	Calculated average price of all fills on this order.	1 to 9
7	BeginSeqNo	Message sequence number of first message in range to be resent	1 to 9
8	BeginString	Identifies beginning of new message and protocol version. ALWAYS FIRST FIELD IN MESSAGE. Valid values: FIX.4.2	7
9	BodyLength	Message length, in bytes, forward to the [CheckSum 10] field. ALWAYS SECOND FIELD IN MESSAGE.	2 to 4
10	CheckSum	Three bytes, simple checksum (see FIX v4.2 document for description). ALWAYS LAST FIELD IN MESSAGE; i.e. serves, with the trailing <SOH>, as the end-of-message delimiter. Always defined as three characters.	3
11	ClOrdID	Unique identifier for Order as assigned by institution. Uniqueness must be guaranteed within a single trading day. Firms which submit multi-day orders should consider embedding a date within this field to assure uniqueness across days.	1 to 50
14	CumQty	Total number of shares filled.	1 to 9
16	EndSeqNo	Message sequence number of last message in range to be resent. If request is for a single message [BeginSeqNo 7 = EndSeqNo 16]. If request is for all messages subsequent to a particular message, [EndSeqNo 16=0].	1 to 9
17	ExecID	Unique identifier of execution message as assigned by broker (will be 0 (zero) for [ExecTransType 20=3] (Status)).	1 to 15
19	ExecRefID	Reference identifier used with Cancel transaction types.	1 to 15
20	ExecTransType	Identifies transaction type. Valid values: 0 = New 1 = Cancel 3 = Status	1
31	LastPx	Price of this (last) fill.	1 to 9
32	LastShares	Quantity of shares bought/sold on this (last) fill	1 to 9
34	MsgSeqNum	Message sequence number.	1 to 9

35	MsgType	Defines message type. ALWAYS THIRD FIELD IN MESSAGE Valid values: 0 = Heartbeat 1 = Test Request 2 = Resend Request 3 = Reject 4 = Sequence Reset 5 = Logout 8 = Execution Report 9 = Order Cancel Reject A = Logon D = New Order - Single F = Order Cancel Request G = Order Cancel/Replace Request R = Quote Request b = Quote Acknowledgement c = Security Definition Request d = Security Definition AF = Order Mass Status Request	2
36	NewSeqNo	New sequence number	1 to 9
37	OrderID	Unique identifier for Order as assigned by Turquoise	10 to 20
38	OrderQty	Number of shares ordered.	1 to 9
39	OrdStatus	Identifies current status of order. Valid values: 0 = New 1 = Partially filled 2 = Filled 4 = Cancelled 5 = Replaced 8 = Rejected	1
40	OrdType	Valid values: 1 = Top of book order 2 = Limit 4 = Stop ***V= U.S Market Order***	1
41	OrigClOrdID	[ClOrdID 11] of the previous order (NOT the initial order of the day) as assigned by the institution, used to identify the previous order in cancel and cancel/replace requests	1 to 50
43	PossDupFlag	Indicates possible retransmission of message with this sequence number Valid values: Y = Possible duplicate N = Original transmission	1
44	Price	Price per contract.	1 to 9
45	RefSeqNum	Reference message sequence number	1 to 9

47	Rule80A	Identify the type of account. Valid values: N = Non-Segregated Client P = Market Maker F = House C = Client	1
49	SenderCompID	Assigned value used to identify the sender in a FIX session	4 to 8
50	SenderSubID	Assigned value used to identify specific message originator (desk, trader, etc.). Participant can have this tag configured on Turquoise Participant database to enable them to use a single FIX session to send orders for different Traders/Users.	Up to 11 characters
52	SendingTime	Time of message transmission (always expressed in UTC)	17 to 21
54	Side	Side of order Valid values: 1 = Buy 2 = Sell	1
55	Symbol	Class root symbol for options or strategy symbol	1 to 30
56	TargetCompID	Assigned value used to identify the receiver in a FIX session.	4 to 8
57	TargetSubID	Assigned value used to identify specific individual or unit intended to receive message. "ADMIN" reserved for administrative messages not intended for a specific user. If tag 50 is present in an incoming message, then the response will contain tag 57 which will return the same value as tag 50.	Up to 11 characters
58	Text	Free format text string. If provided in the original order. When [ExecType 150=8] (rejected), contains the text associated with the reason of the rejection. See Appendix A for list of text errors.	1 to 18 in New Order message 1 to 80 otherwise
59	TimeInForce	Specifies how long the order remains in effect. Absence of this field is interpreted a DAY. Valid values: 0 = Day 1 = Good Till Cancel (GTC) 3 = Immediate or Cancel (IOC) 6 = Good Till Date	1

60	TransactTime	Time of execution/order creation, expressed in UTC	17 to 21
77	OpenClose	Type of Position. Valid Values: O = All Legs are open or single security C = All Legs are closed or single security 1 = 1st Leg Open, 2nd Leg Close 2 = 1st Leg Close, 2nd Leg Open 3 = 1st Leg Open, 2nd Leg Open, 3rd Leg Close 4 = 1st Leg Open, 2nd Leg Close, 3rd Leg Open 5 = 1st Leg Open, 2nd Leg Close, 3rd Leg Close 6 = 1st Leg Close, 2nd Leg Open, 3rd Leg Open 7 = 1st Leg Close, 2nd Leg Open, 3rd Leg Close 8 = 1st Leg Close, 2nd Leg Close, 3rd Leg Open A = 1st Leg Open, 2nd Leg Open, 3rd Leg Open 4th Leg Close B = 1st Leg Open, 2nd Leg Open, 3rd Leg Close, 4th Leg Open D = 1st Leg Open, 2nd Leg Open, 3rd Leg Close, 4th Leg Close E = 1st Leg Open, 2nd Leg Close, 3rd Leg Open, 4th Leg Open F = 1st Leg Open, 2nd Leg Close, 3rd Leg Open, 4th Leg Close G = 1st Leg Open, 2nd Leg Close, 3rd Leg Close, 4th Leg Open H = 1st Leg Open, 2nd Leg Close, 3rd Leg Close, 4th Leg Close I = 1st Leg Close, 2nd Leg Open, 3rd Leg Open, 4th Leg Open J = 1st Leg Close, 2nd Leg Open, 3rd Leg Open, 4th Leg Close K = 1st Leg Close, 2nd Leg Open, 3rd Leg Close, 4th Leg Open L = 1st Leg Close, 2nd Leg Open, 3rd Leg Close, 4th Leg Close M = 1st Leg Close, 2nd Leg Close, 3rd Leg Open, 4th Leg Open N = 1st Leg Close, 2nd Leg Close, 3rd Leg Open, 4th Leg Close P = 1st Leg Close, 2nd Leg Close, 3rd Leg Close, 4th Leg Open	1
97	PossResend	Indicates that message may contain information that has been sent under another sequence number. Valid Values: Y = Possible resend N = Original transmission	1
98	EncryptMethod	Method of encryption. Valid values: 0 = None	1
99	StopPx	For on Stop order (Stop limit only)	1 to 9
103	OrdRejReason	Code to identify reason for order rejection. See Error Code List in Appendix A below.	1 to 6

108	HeartBtInt	Heartbeat interval (seconds). Must be equal or greater than 30 or equal to 0 (no heartbeat)	1 to 4
110	MinQty	Minimum quantity of an order to be executed.	1 to 9
112	TestReqID	Identifier included in Test Request message to be returned in resulting Heartbeat	1 to 20
122	OrigSendingTime	Original time of message transmission (always expressed in UTC) when transmitting orders as the result of a resend request.	17 to 21
123	GapFillFlag	Indicates that the Sequence Reset message is replacing administrative or application messages which will not be resent. Valid values: Y = Gap Fill message, MsgSeqNum field valid N = Sequence Reset, ignore MsgSeqNum	1
131	QuoteReqID	Unique identifier for quote request	1 to 50
141	ResetSeqNumFlag	Indicates that the both sides of the FIX session should reset sequence numbers Valid values: Y = Yes, reset sequence numbers N = No	1
146	NoRelatedSym	Specifies the number of repeating symbols specified.	1 to 2
150	ExecType	Describes the specific Execution Report. Valid values: 0 = New 1 = Partial fill 2 = Fill 4 = Cancelled 5 = Replace 8 = Rejected	1
151	LeavesQty	Amount of shares open for further execution.	1 to 9

167	SecurityType	Indicates the type of security. Valid values: OPT = Option FUT = Future STR = Strategy For Options: [Symbol 55], [PutOrCall 201], [MaturityMonthYear200] and [StrikePrice 202] are required. For Futures: [Symbol 55], and [MaturityMonthYear200] are required. For Strategy: only [Symbol 55] is required.	3
200	MaturityMonthYear	Month and Year of the maturity for [SecurityType 167 = OPT].	6
201	PutOrCall	Indicates whether an Option is for a put or call. Valid values: 0 = Put 1 = Call ***2 = Over*** ***3 = Under***	1
202	StrikePrice	Strike Price for an Option. A maximum of 4 decimals are accepted.	1 to 9
205	MaturityDay	Used in conjunction with MaturityMonthYear to specify a particular maturity date (expiration date).	1 to 2
206	OptAttribute	Indicates a corporate action (Supported Values: X, Y and Z)	1
210	MaxShow	Maximum number of shares within an order to be shown to other customers	1 to 9
297	QuoteAckStatus	Identifies the status of the quote acknowledgement. Valid values: 0 = Accepted 5 = Rejected	1
300	QuoteRejectReason	Reason Quote was rejected See Section 6 for the list of error codes	4 to 6
310	UnderlyingSecurityType	Strategy leg SecurityType. See [SecurityType 167] field for description	3
311	UnderlyingSymbol	Strategy leg Symbol. See [Symbol 55] field for description	1 to 30
313	UnderlyingMaturity MonthYear	Strategy leg maturity date. See [MaturityMonthYear 200] field for description.	6

314	UnderlyingMaturityDay	Strategy Leg maturity day. See [MaturityDay 205] field for description.	1 or 2
315	UnderlyingPutOrCall	Strategy leg PutOrCall. See [PutOrCall 201] field for description	1
316	UndelyingStrikePrice	Strategy leg strike price. See [StrikePrice 202] field for description.	1 to 9
317	UnderlyingOptAttribute	Strategy Leg corporate action indicator. See [OptAttribute 206] field for description.	1
319	RatioQty	Strategy leg ratio to determine a valid quantity. Should not contain decimals	1 to 9
320	SecurityReqID	Unique ID of a Security Definition Request.	1 to 50
321	SecurityRequestType	Type of Security Definition Request. Valid values: 2 = All instruments	1
322	SecurityResponseID	Unique ID of a Security Definition message.	1 to 15
371	RefTagID	The tag number of the FIX field being referenced.	1 to 5
372	RefMsgType	The message type of the FIX message being referenced.	1 to 2
373	SessionRejectReason	Code to identify reason for a session-level Reject message.	1 to 2
375	ContraBroker	Exchange number of the firm on the opposite side of the trade. Value will be equal to the receiver's Exchange number when reporting cross trades. For all other messages, tag [ContraBroker 375] will not be supplied.	3
382	NoContraBrokers	Number of ContraBrokers repeating group instances. Always appear before tag [ContraBroker 375]. Value will be 1 when reporting cross trades. For all other messages, tag [NoContraBroker 382] will not be supplied.	1
383	MaxMessageSize	Maximum number of bytes supported for a single message.	2 to 4
432	ExpireDate	Date of order expiration (last day the order can trade), always expressed in terms of the local market date	8
434	CxlRejResponseTo	Identifies the type of request that a Cancel Reject is in response to. Valid values: 1 = Order Cancel Request 2 = Order Cancel/Replace Request	1

442	MultipleReportingType	Indicates the type of instrument the Execution Report refers to. Used with multi-leg securities such as, Options Strategies, Spreads, etc. Valid Values are: 1 = Single security or outright contract(default) 2 = Individual leg of a multi-leg or Strategy Instrument	1
527	***Secondary ExecID***	Used to refer to the Strategy Exec ID. Send only when MultipleReportingType 442 = 2 Example: If 35 = 8 and 442 = 2, then 527 = ExecID of the Strategy	1 to 20
584	***MassStatusReqID***	This field is taken from FIX v4.3 Value assigned by issuer of Mass Status Request to uniquely identify the request.	1 to 50
585	***MassStatusReqType***	This field is taken from FIX v4.3. Mass Status Request Type Valid values: 7 = Status for all orders	1
8001	***AccountProfile***	Indicate the type of trader. Valid Values: H: Hedger S: Speculator (default value if not provided in the order)	1
10455	***SecurityAltID***	Indicates the Strategy Instrument in Execution Report Message sent for the Strategy. Send only when MultipleReportingType 442 = 2 Example: If 35 = 8 and 442 = 2, then 10455 = Symbol of the Strategy.	1 to 15

6 Error Codes

The following table displays the error codes and text that will appear in error responses.

Error Code	Error Description
100	Firm is forbidden to trade on this Group.
101	Duration type is forbidden for current Group state.
102	Verb field (Side) cannot be modified.
103	Order is not active.
104	Price type is forbidden for this instrument.
105	Price Term is forbidden for current Instrument state.
108	Duration type is forbidden for current Instrument state.
109	Order cannot be processed: No opposite limit.
110	Price does not represent a valid tick increment for this Instrument.
111	Duration type is invalid for this Price type.
112	Cross Order Price must be inside the Instrument trading limits.
113	Cross Order Price outside bid/ask price spread.
201	GTD date must be equal to or greater than current day.
202	GTD date must be equal to or less than Instrument expiration date.
203	GTD date must be filled only if Duration type is equal to GTD.
300	Quantity Term is forbidden for current Instrument state.
302	Quantity must be less than or equal to Maximum Improvement Quantity.
303	Quantity Term is not authorized for this Order type.
304	Additional Quantity must be less than Order Quantity.
305	Additional Quantity is too small.
306	Minimum Quantity cannot be modified.
307	Quantity Term is forbidden for Duration Type.
308	Order Quantity is outside the instrument quantity threshold.
309	Quantities must be multiples of lot size.
402	Trader ID field cannot be modified.
403	Market Maker not authorized for this Group.
500	Order Price is outside the instrument price threshold.
501	Price field is mandatory for Limit Orders.
502	Price field must not be filled for this Price Type.
503	Order cannot be modified or cancelled.
504	Additional Price is forbidden for Price Term.
505	Order Price must be greater than Additional Price.
506	Order Price must be lower than Additional Price.
507	Additional Price must be lower than last price or last sale price.
508	Additional Price must be greater than last price or last sale price.
509	Order rejected. Cannot trade outside instrument price thresholds.
700	Only one quote per instrument and per Side is accepted.
701	Quote is not present in the Instrument Book.
702	Market Maker Protection in progress, Quote not processed.
703	Advanced Market Maker Protection not enabled for this Group.
704	Buy and Sell must not cross for the same instrument.

705	Number of quotes is not in sync with the message length.
707	Market Maker Protection state must be re-activated.
708	Trader ID has no quote for this Group.
709	All Instruments must belong to the same Group.
710	Clearing Data has not been initialized.
1000	Cross orders forbidden in Pre-opening phase.
1001	Instrument does not exist.
1002	Group ID does not exist
1003	Trader ID is invalid.
1004	Message Type is forbidden for current Instrument state.
2000	Technical error; function not performed. Contact the Technical Help Desk.
2001	Gateway State forbids this command. Contact the Technical Help Desk.
2002	Function only partially performed. Contact the Technical Help Desk.

Turquoise Services Limited/Turquoise Trading Limited

10 Paternoster Square
London EC4M 7LS
Telephone: +44 (0)20 7797 1000

http://www.tradeturquoise.com