Global Exchanges and Markets Committee

HKEx Quote Extensions

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Revision 0.3

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For Global Technical Committee Governance Internal Use Only

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Document History

Revision	Date	Author	Revision Comments
0.1	06 September, 2011	Kenneth To (HKEx)	1st draft
0.2	24 October, 2011	Kenneth To (HKEx)	Correction to the typo error "QuoteOfferID" in the flow diagrams of Section 4.
ASBUILT	2 February, 2012	Jim N.	Initial tag assignements
	6 February, 2012	Rich S.	Minor text clean up
	15 February, 2012	Lisa T.	Additional clean up edits. Changed field names for two new fields (from QuoteBidID to BidID(1866) (*see change date 2012-05-03 regarding tag number change*)and QuoteOfferID to OfferID(1867) to avoid confusion with two other fields introduced in EP125. Amended also data dictionary description of these two fields to be more precise as to who assignes the ID values. Replaced "TBD" in narrative text with assigned tag numbers.
	2012-02-21	Jim N	Additional cleanup
	2012-03-24	Lisa T.	Additional narrative text clean up. Replaced "TBD" for assigned enum values in narrative text. Additional field usage reference text clean up in message tables. Added FIXML abbreviations for new component and new fields.
	2012-04-28 2012-05-03	Lisa T.	To resolve FIXML abbreviations issues with new fields and duplication of field name with existing BidID(390), this proposal will now use BidID(390) with an update to the DD description for BidID(390) to allow use in the quote related messages instead of adding a new field.
	2012-06-11	Lisa T.	Cleaned up residual references to "QuoteBidID" which is now BidID(390).

1 Introduction

HKEx is conducting gap analysis for HKEx Quote with FIX Quote. HKEx supports single tradable quote model with some semantic deviation with FIX tradable quote model. The gap analysis has resulted in proposing extension to existing Quote(35=S) and Quote Status Report(35=AI) messages in order for HKEx supporting Quote for FIX:

- Add new fields **~~Quote~~BidID(390)** and **~~Quote~~OfferID(1867)** to Quote(35=S) and Quote-Status-Report (35=AI) messages to support HKEx quote model which splits the accepted quote into two bid and ask orders and processed independently.
- Add a new **ValueChecksGrp** component group with fields **NoValueChecks(1868)**, **ValueCheckType(1869)** and **ValueCheck~~Indicator~~Action(1870)** for Quote(35=S) to support the price and notional value check for HKEx Quote.
- Add enumerations **"Notional Value exceeds threshold**", **"Price exceeds current price band"**, **"Reference price not available"** to QuoteRejectReason(300) for quote reject due to price and notional value check.

2 Business Workflow

2.1 *~~Quote~~BidID and ~~Quote~~OfferID for Quote Message*

HKEx adopts Single Tradeable Quote model for market makers who require to maintain 2-sided quote for securities which they make market. When the 2-sided quote enters into the market (after all the various validation), it splits into two orders, buy and sell, and enter into order book. As the bid and ask orders are processed separately, a unique ClOrdID(11) has to be returned in the Execution ~~r~~Report(35=8) for individual bid and ask order to relate the original Quote(35=S). HKEx ~~Q~~quote submission flow is described in section 4.1.

~~Two new fields QuoteBidID() and~~ One new field, ~~Quote~~OfferID(1867~~TBD~~), ~~are~~ is proposed to add to the Quote(35=S) and also the Quote-Status-Report-(35=AI) messages, while the existing BidID(390) would be used such that the ~~Quote~~BidID(390) can be returned in the ClOrdID(11) of the ExecutionReport(35=8) for the bid order while the ~~Quote~~OfferID(1867) can be returned in the ClOrdID(11) of the ask order. This can avoid the ambiguity of using same QuoteID(117) for ClOrdID(11) which is returned in the ExecutionReport(35=8) messags for the bid and ask orders.

2.2 *Price and Notional Value Check for Quote*

Similar to order submission, ~~Q~~quote submission into Exchange also subjects to price and notional value check to safeguard against input of erroneous price and quantity for quote. Since there is lack of similar field available for the Quote(35=S) message, it is proposed to add a component group **ValueCheckGrp** to the Quote(35=S) to support the price and notional value check. A more generic component group is suggested to support wider usage of future requirement.

Begin Component Group <ValueChecksGrp>
NoValueChecks(1868)
ValueCheckType(1869)
ValueCheck~~Indicator~~Action(1870)
End Component Group

In conjunction with validation failure for the price and notional value check for submitted ~~Q~~quotes, HKEx will reject the ~~Q~~quote with corresponding reject reason stated in the QuoteStatusReport(35=AI). Three new enumerations described below are proposed to add to the **QuoteRejectReason(300)** for quote reject due to price and notional value check.

"Notional Value exceeds threshold"(14~~TBD~~)
"Price exceeds current price band"(15~~TBD~~)
"Reference price not available"(16~~TBD~~)

3 Issues and Discussion Points

4 Proposed Message Flow

4.1 HKEx Quote Submission Flow

HKEx's ~~Q~~quote model basically is a ~~S~~single ~~T~~tradeable ~~Q~~quote with acknowledgement for each quote. Market makers submit two-sided quotes to Exchange for the securities in which they make market. After the quote is validated and accepted, the quote is split into two orders, buy and sell, and are processed separately and independently as two individual orders. Each order has a "life" of its own and behaves like just an order that was submitted into the order book. Execution reports will be returned for each order to update its order status and/or if fill occurs for the order.
Only one outstanding quote (i.e., one bid and one ask) is allowed for each market maker for the security. The HKEx quote model therefore serves as ~~N~~new orders ~~(~~if there is no outstanding order~~)~~, or a ~~C~~cancel/~~R~~replace ~~(~~if there is already an outstanding order~~)~~.

The HKEx ~~Q~~quote flow is an extension of ~~S~~single ~~Q~~quote with QuoteResponseLevel(301)=2(Ack each quote message) flow (refer FIX Specification version 5.0 SP2 VOL 7, p.217) and is described below:

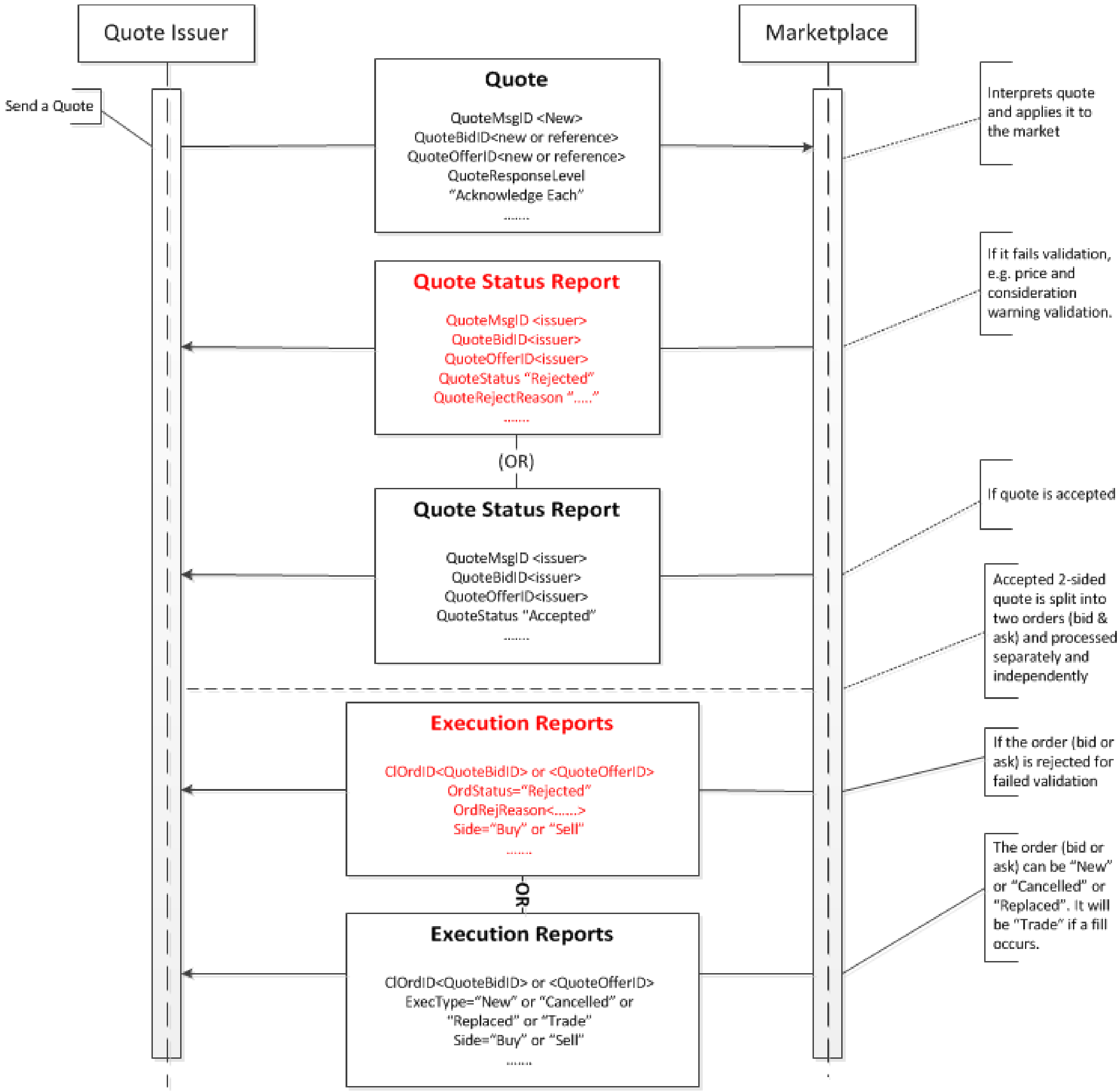

Figure 1 Quote submission flow

4.2 HKEx Quote Cancel Flow

HKEx's ~~Q~~quote ~~C~~cancel flow is a single quote cancel for one security. The market maker submits Quote Cancel(35=Z) for a security for which the market maker has submitted quote. Only one outstanding quote (i.e., one bid and one ask) is allowed for each market maker for the security. The Exchange will validate the quote cancel and will accept the cancel only if there is at least one outstanding order (bid or ask) to cancel. The quote cancel actually results in cancelling the outstanding orders (both bid and ask) if they still exist in the order book. Execution report will be returned for each order upon cancellation from the order book.

The HKEx ~~Q~~quote ~~C~~cancel flow is described below:

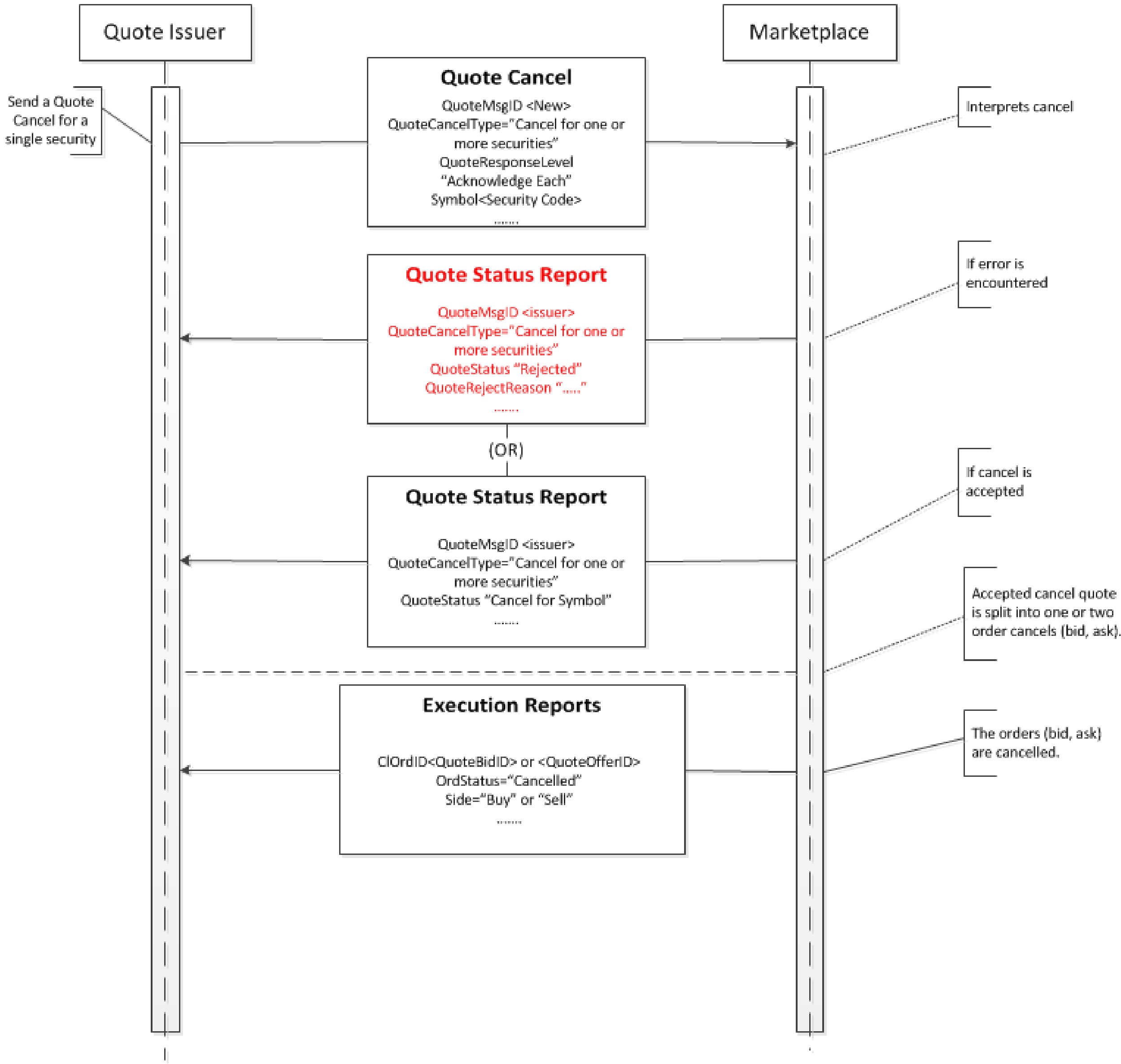

Figure 2 Quote cancellation flow

5 FIX message tables

5.1 Quote(35=S)

Tag	*FieldName*	*Req'd*	*ICR*	*Action*	*Mappings and Usage Comments*	*FIX Spec Comments*
StandardHeader		Y				MsgType = S
131	QuoteReqID	N				Required when quote is in response to a Quote Request message
117	QuoteID	Y				
390	~~Quote~~BidID	N		~~NEW~~ADD		Unique identifier for the bid side of the quote.
1867	~~Quote~~OfferID	N		NEW		Unique identifier for the ask side of the quote.
1751	SecondaryQuoteID	N				Can be used when modifying an existing quote.
1166	QuoteMsgID	N				Optionally used to supply a message identifier for a quote.
693	QuoteRespID	N		Change		Required when responding to the Quote Response(35=AJ) message. The counterparty specified ID of the Quote Response(35=AJ) message.
537	QuoteType	N		Change		~~Quote Type~~ If not specified, the default is an indicative quote.
1171	PrivateQuote	N				Used to indicate whether a private negotiation is requested or if the response should be public. Only relevant in markets supporting both Private and Public quotes. If field is not provided in message, the model used must be bilaterally agreed.
component block <QuotQualGrp>		N				
301	QuoteResponseLevel	N		Change	(NB: duplicates DD description)	~~Level of Response requested from receiver of quote messages.~~
component block <ValueChecksGrp>		N		NEW		~~Insert here the type of value to be checked for the quote (e.g. price or notional value)~~
component block <Parties>		N		Change		~~Insert here the set of "Parties" (firm identification) fields defined in "Common Components of~~

						~~Application Messages"~~
336	TradingSessionID	N				
625	TradingSessionSubID	N				
component block <Instrument>		Y		Change		~~Insert here the set of "Instrument" (symbology) fields defined in "Common Components of Application Messages"~~
component block <FinancingDetails>		N		Change		~~Insert here the set of "FinancingDetails" (symbology) fields defined in "Common Components of Application Messages"~~
component block <UndInstrmtGrp>		N		Change		~~Number of underlyings~~
54	Side	N				Required for Tradeable or Counter quotes of single instruments
component block <OrderQtyData>		N				Required for Tradeable quotes or Counter quotes of single instruments
63	SettlType	N				
64	SettlDate	N				Can be used with forex quotes to specify a specific "value date". For NDFs this is required.
193	SettlDate2	N				(Deprecated in FIX.5.0)Can be used with OrdType = "Forex - Swap" to specify the "value date" for the future portion of a F/X swap.
192	OrderQty2	N				(Deprecated in FIX.5.0)Can be used with OrdType = "Forex - Swap" to specify the order quantity for the future portion of a F/X swap.
15	Currency	N				Can be used to specify the currency of the quoted prices. May differ from the 'normal' trading currency of the instrument being quoted
120	SettlCurrency	N				Required for NDFs to specify the settlement currency (fixing currency).

component block <RateSource>		N				
component block <Stipulations>		N		Change		~~Insert here the set of "Stipulations" (repeating group of Fixed Income stipulations) fields defined in "Common Components of Application Messages"~~
1	Account	N				
660	AcctIDSource	N				
581	AccountType	N		Change	(NB: duplicates DD description)	~~Type of account associated with the order (Origin)~~
component block <LegQuotGrp>		N				Required for multileg quotes
132	BidPx	N				If F/X quote, should be the "all-in" rate (spot rate adjusted for forward points). Note that either BidPx, OfferPx or both must be specified.
133	OfferPx	N				If F/X quote, should be the "all-in" rate (spot rate adjusted for forward points). Note that either BidPx, OfferPx or both must be specified.
645	MktBidPx	N				Can be used by markets that require showing the current best bid and offer
646	MktOfferPx	N				Can be used by markets that require showing the current best bid and offer
647	MinBidSize	N		Change	(NB: remove DD duplicating text)	~~Specifies the minimum bid size.~~ Used for markets that use a minimum and maximum bid size.
134	BidSize	N		Change	(NB: remove DD duplicating text)	~~Specifies the bid size.~~ If MinBidSize(647) is specified, BidSize(134) is interpreted to contain the maximum bid size.
648	MinOfferSize	N		Change	(NB: remove DD duplicating text)	~~Specifies the minimum offer size.~~ Used for markets that use a minimum and maximum offer size.~~If MinOfferSize(648) is specified, OfferSize(135) is~~

						~~interpreted to contain the maximum offer size~~.
135	OfferSize	N		Change	(NB: remove DD duplicating text)	~~Specified the offer size.~~ If MinOfferSize(648) is specified, OfferSize(135) is interpreted to contain the maximum offer size.
110	MinQty	N				For use in private/directed quote negotiations.
62	ValidUntilTime	N				The time when the quote will expire
188	BidSpotRate	N		Change	(NB: text doesn't add any information)	~~May be applicable for F/X quotes~~
190	OfferSpotRate	N		Change	(NB: text doesn't add any information)	~~May be applicable for F/X quotes~~
189	BidForwardPoints	N		Change	(NB: text doesn't add any information)	~~May be applicable for F/X quotes~~
191	OfferForwardPoints	N		Change	(NB: text doesn't add any information)	~~May be applicable for F/X quotes~~
1065	BidSwapPoints	N		Change	(NB: duplicates DD description)	~~Bid swap points of an FX Swap quote.~~
1066	OfferSwapPoints	N				
631	MidPx	N				
632	BidYield	N				
633	MidYield	N				
634	OfferYield	N				
60	TransactTime	N				
40	OrdType	N				Can be used to specify the type of order the quote is for.
642	BidForwardPoints2	N				(Deprecated in FIX.5.0)Bid F/X forward points of the future portion of a F/X swap quote added to spot rate. May be a negative value
643	OfferForwardPoints2	N				(Deprecated in FIX.5.0)Offer F/X forward points of the future portion of a F/X swap quote added to spot rate. May be a negative value
656	SettlCurrBidFxRate	N				Can be used when the quote is provided in a currency other than the

						instrument's 'normal' trading currency. Applies to all bid prices contained in this quote message
657	SettlCurrOfferFxRate	N				Can be used when the quote is provided in a currency other than the instrument's 'normal' trading currency. Applies to all offer prices contained in this quote message
156	SettlCurrFxRateCalc	N				Can be used when the quote is provided in a currency other than the instruments trading currency.
13	CommType	N				Can be used to show the counterparty the commission associated with the transaction.
12	Commission	N				Can be used to show the counterparty the commission associated with the transaction.
582	CustOrderCapacity	N		Change	(NB: doesn't add relevent usage)	~~For Futures Exchanges~~
100	ExDestination	N				Used when routing quotes to multiple markets.
1133	ExDestinationIDSource	N				
775	BookingType	N				
528	OrderCapacity	N				
529	OrderRestrictions	N				
423	PriceType	N				
component block <SpreadOrBenchmarkCurveData>		N				
component block <YieldData>		N				
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				

5.2 QuoteStatusReport(35=AI)

Tag	*FieldName*	*Req'd*	*ICR*	*Action*	*Mappings and Usage Comments*	*FIX Spec Comments*
StandardHeader		Y				MsgType = AI
649	QuoteStatusReqID	N				
131	QuoteReqID	N				Required when quote is in response to a Quote Request message
117	QuoteID	N		Change		~~Maps to~~ Contains the QuoteID(117) of a single Quote(MsgType=S) or QuoteEntryID(299) of a MassQuote(MsgType=i).
390	~~Quote~~BidID	N		~~NEW~~ Add		~~Maps to~~Contains the ~~Quote~~BidID(390) of a single Quote(35=S).
1867	~~Quote~~OfferID	N		NEW		~~Maps to~~Contains the ~~Quote~~OfferID(1867) of a single Quote(35=S).
1166	QuoteMsgID	N		Change		~~Maps to~~ Contains the QuoteMsgID(1166) of a single Quote(MsgType=S) or QuoteID(117) of a MassQuote(MsgType=i).
693	QuoteRespID	N		Change		Required when responding to a Quote-Response(35=AJ) message.
537	QuoteType	N		Change		~~Quote Type~~ If not specified, the default is an indicative quote.
298	QuoteCancelType	N				
component block <Parties>		N		Change		~~Insert here the set of "Parties" (firm identification) fields defined in "Common Components of Application Messages"~~
component block <TargetParties>		N				Can be populated with the values provided on the associated QuoteStatusRequest(MsgType=A).
336	TradingSessionID	N				
625	TradingSessionSubID	N				
component block <Instrument>		N				Conditionally required when reporting status of a single security quote.
component block <FinancingDetails>		N		Change		~~Insert here the set of "FinancingDetails" (symbology) fields defined in~~

						~~"Common Components of Application Messages"~~
component block <UndInstrmtGrp>		N		Change		~~Number of underlyings~~
54	Side	N				
component block <OrderQtyData>		N				Conditionally ~~R~~required for quotes of single instruments when QuoteType(537)=1(Tradeable). ~~quotes of single instruments~~
63	SettlType	N				
64	SettlDate	N				Can be used with forex quotes to specify a specific "value date"
193	SettlDate2	N				(Deprecated in FIX.5.0)Can be used with OrdType = "Forex - Swap" to specify the "value date" for the future portion of a F/X swap.
192	OrderQty2	N				(Deprecated in FIX.5.0)Can be used with OrdType = "Forex - Swap" to specify the order quantity for the future portion of a F/X swap.
15	Currency	N				Can be used to specify the currency of the quoted prices. May differ from the 'normal' trading currency of the instrument being quoted
component block <Stipulations>		N				
1	Account	N				
660	AcctIDSource	N				
581	AccountType	N		Change	(NB: duplicates DD description)	~~Type of account associated with the order (Origin)~~
component block <LegQuotStatGrp>		N				Conditionally ~~R~~required for multileg quote status reports.
component block <QuotQualGrp>		N				
126	ExpireTime	N				
44	Price	N				
423	PriceType	N				
component block <SpreadOrBenchmarkCurveData>		N				
component block <YieldData>		N				
132	BidPx	N				If F/X quote, should be the "all-in" rate (spot rate adjusted for forward points). Note that either BidPx, OfferPx or both must be specified.
133	OfferPx	N				If F/X quote, should be the "all-in" rate (spot rate adjusted for forward points).

						Note that either BidPx, OfferPx or both must be specified.
645	MktBidPx	N				Can be used by markets that require showing the current best bid and offer
646	MktOfferPx	N				Can be used by markets that require showing the current best bid and offer
647	MinBidSize	N		Change	(NB: remove DD duplicating text)	~~Specifies the minimum bid size.~~ Used for markets that use a minimum and maximum bid size.
134	BidSize	N		Change	(NB: remove DD duplicating text)	~~Specifies the bid size.~~ If MinBidSize(647) is specified, BidSize(134) is interpreted to contain the maximum bid size.
648	MinOfferSize	N		Change	(NB: remove DD duplicating text)	~~Specifies the minimum offer size.~~ Used for markets that use a minimum and maximum offer size.~~If MinOfferSize(648) is specified, OfferSize(135) is interpreted to contain the maximum offer size~~.
135	OfferSize	N		Change	(NB: remove DD duplicating text)	~~Specified the offer size.~~ If MinOfferSize(648) is specified, OfferSize(135) is interpreted to contain the maximum offer size.
110	MinQty	N				
62	ValidUntilTime	N				
188	BidSpotRate	N		Change	(NB: text doesn't add any information)	~~May be applicable for F/X quotes~~
190	OfferSpotRate	N		Change	(NB: text doesn't add any information)	~~May be applicable for F/X quotes~~
189	BidForwardPoints	N		Change	(NB: text doesn't add any information)	~~May be applicable for F/X quotes~~
191	OfferForwardPoints	N		Change	(NB: text doesn't add any information)	~~May be applicable for F/X quotes~~
631	MidPx	N				
632	BidYield	N				
633	MidYield	N				
634	OfferYield	N				
60	TransactTime	N				
40	OrdType	N				Can be used to specify the type of order the quote is for.
642	BidForwardPoints2	N				(Deprecated in FIX.5.0)Bid

						F/X forward points of the future portion of a F/X swap quote added to spot rate. May be a negative value
643	OfferForwardPoints2	N				(Deprecated in FIX.5.0)Offer F/X forward points of the future portion of a F/X swap quote added to spot rate. May be a negative value
656	SettlCurrBidFxRate	N				Can be used when the quote is provided in a currency other than the instrument's 'normal' trading currency. Applies to all bid prices contained in this message
657	SettlCurrOfferFxRate	N				Can be used when the quote is provided in a currency other than the instrument's 'normal' trading currency. Applies to all offer prices contained in this message
156	SettlCurrFxRateCalc	N				Can be used when the quote is provided in a currency other than the instruments trading currency.
13	CommType	N				Can be used to show the counterparty the commission associated with the transaction.
12	Commission	N				Can be used to show the counterparty the commission associated with the transaction.
582	CustOrderCapacity	N		Change	(NB: doesn't add relevent usage)	~~For Futures Exchanges~~
100	ExDestination	N				Used when routing quotes to multiple markets.
1133	ExDestinationIDSource	N				
775	BookingType	N				
528	OrderCapacity	N				
529	OrderRestrictions	N				
297	QuoteStatus	N		Change	(NB: doesn't add relevent usage)	~~Quote Status~~
300	QuoteRejectReason	N		Change	(NB: doesn't add relevent usage)	~~Reason Quote was rejected~~
58	Text	N				
354	EncodedTextLen	N				
355	EncodedText	N				
StandardTrailer		Y				

6 FIX component blocks

6.1 Component ValueChecksGrp

To be completed at the time of the proposal	
Component Name	ValueChecksGrp
Component Abbreviated Name (for FIXML)	ValuChk
Component Type	_X__ Block Repeating ___ Block
Category	
Component Synopsis	~~To~~ This component can be used by the message submitter to provide a list of value types to be checked by the counterparty or message recipient.
Component Elaboration	~~A component group for specifying a list of value types (e.g. order price, notional value) to be checked by the counterparty. It is initially used for Quote submission and may extend to be used for other FIX messages in the future.~~
To be finalized by FPL Technical Office	
Repository Component ID	2211

Component FIXML Abbreviation: <ValueChecksGrp>							
Tag	*Field Name*		*Req'd*	*ICR*	*Action*	*Mappings and Usage Comments*	*Comments*
1868	NoValueChecks		N		NEW		~~Repeating group below should contain unique combinations of ValueCheckType and ValueCheckIndicator.~~
→	1869	ValueCheckType	N		NEW	Removed description as it replicates DD entry.	Required if NoValueChecks(1868) > 0. ~~Type of value to be checked.~~
→	1870	~~ValueCheckIndicator~~ValueCheckAction	N		NEW	Removed descipriotn as it replicates DD entry.	Required if NoValueChecks(1868) > 0. ~~Indicate if the type of value specified in ValueCheckType is required to check or not.~~
<ValueChecksGrp>							

7 Category Changes

Category change is not applicable.

Appendix A - Data Dictionary

Tag	Field Name	Action	Data type	Description	FIXML Abbreviation	Add to / Deprecate from Message type or Component block
390	~~Quote~~BidID	~~NEW~~Change description	String	For bid lists, ~~U~~unique identifier for Bid Response(35=I) as assigned by sell-side (broker, exchange, ECN). Uniqueness must be guaranteed within a single trading day. For quotes, ~~U~~unique identifier for the bid side of the quote assigned by the quote issuer.	@BidID	Add to: Quote(35=S) QuoteStatusReport(35=AI)
1867	~~Quote~~OfferID	NEW	String	Unique identifier for the ask side of the quote assigned by the quote issuer.	@OfrID	Quote(35=S) QuoteStatusReport(35=AI)
1868	NoValueChecks	NEW	NumInGroup	Number of ~~ValueCheckType(1869), ValueCheckIndicator(1870)~~value check entries.		ValueChecksGrp component
1869	ValueCheckType	NEW	int	Type of value to be checked. Possible values: 1 – Price check 2 – Notional value check	@Typ	ValueChecksGrp component

1870	~~ValueCheckIndicator~~ValueCheckAction	NEW	int	Action to be taken for the ValueCheckType(1869).~~Indicate if the type of value specified in ValueCheckType is required to check or not~~ Possible values: 0 – Do not check (elaboration: checks will not be done for the specified ValueCheckType (1869)) 1 - Check (elaboration: checks will be donefor the specificed ValueCheckType (1869)) 2 - Best effort check (elaboration: the market may or may not check the specified ValueCheckType (1869) depending on availability of reference data)	@Actn	ValueChecksGrp component

300	QuoteRejectReason	Add Enum	int	Reason Quote was rejected. Possible values: 1 = ~~u~~Unknown ~~S~~symbol (~~S~~security) 2 = Exchange (~~S~~security) closed 3 = Quote request exceeds limit 4 = Too late to enter 5 = Unknown ~~Q~~quote 6 = Duplicate ~~Q~~quote 7 = Invalid bid/ask spread 8 = Invalid price 9 = Not authorized to quote security 10 = Price exceeds current price band 11 = Quote ~~L~~locked – ~~U~~unable to ~~U~~update/~~C~~cancel 12 = Invalid or unknown ~~S~~security ~~I~~issuer 13 = Invalid or unknown ~~I~~issuer of ~~U~~underlying ~~S~~security 99 = Other 14 = Notional value exceeds threshold 15 = Price exceeds current price band 16 = Reference price not available Also need to revise capitalization of existing enum descriptions to match standard.	@RejRsn	

Appendix B - Glossary Entries

Term	Definition	Field where used

Appendix C – Abbreviations

Term	Proposed Abbreviation	Proposed Messages, Components, Fields where used
Check	Chk	

Appendix D - Usage Examples