Quote Routing Interface (QRI) for Equity

Technical Specifications

Version 2.1.3

Indonesia Stock Exchange Building
Jl. Sudirman Kav 52-53
Jakarta 12190
INDONESIA

Phone: +62-21-5150515
Fax: +62-21-5150430

Update Summary

NO.	VERSION	DATE	CHANGE
1	1.91 (Beta Version)	18th July 2008	Updated to X-stream engine interface
2	1.92	4th December 2008	Updated some tag and its value
3	1.94	31st March 2011	Updated Comments and Valid value for tag 376 (Trading ID) Updated valid value for tag 58 Neg. List Message Updated some tag and its value Add new message specification Delete message that is not currently use
4	2.0	7th November 2011	Add comment for tag 6002 (CurrentPassword) in Logon Request message Add tag 6090 (LogonReply) and tag 6091 (LogonDesc) in Logon Message Make length field for tag 55 (Symbol) consistent for all messages Add tag 11 (BrokerRef) in value tag 6065 (RefErrorCode) for all MessageType U7 Change comment for tag 6021 (PreviousDate) and tag 6022 (PreviousPrice) in Securities Message Add tag 6071 (Remarks2) and tag 6070 (DelistingDate) for Securities message Add new valid value for Pre Closing and Post Closing for tag 326 (SecurityTradingStatus) for Securities message Change JONES time to JATS time for tag 17 (ExecID) Add Appendix C List field type
5	2.1.0	18th October 2017	• Change valid value for tag 6090 • Add tag 172 to Negotiation Deal List Message • Add valid value price stabilization for tag 54 (Side) in Order List Message • Add Price Stabilization and Margin value for tag 54 (side) in Order List message and Trade List message • Remove Market order value in tag 40 for order list message

6	2.1.1	2nd November 2020	a. Change trading hours b. Added comment on tag 37 (OrderID) "The orderID will be reset at the start of each trading day." c. Added comment on tag 198 (SecondaryOrderID) "The Trade Number will be reset at the start of each trading day."
7	2.1.2	19th April 2021	Added possible value for tag 6010: - ACCEL - WATCHLIST
8	2.1.3	20th April 2021	a. Order List Added new list of value to tag 59 (Time in force) b. Trade List • Move Group tag 382-No of Contra Brokers • Added notes future value on tag 337 (Contra Trader) and Tag 375 (Contra Broker) and cpdomicile on Tag 58 (Text) c. Advertising Message Added notes future value on tag 1 (Account)

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Introduction

The IDX Brokerage Server Service provides a service of receiving data, which are transactions to be transmitted from brokerage server to the IDX computer. The main purpose of the data transmission is to send automated order messages. The messages must comply to a certain specification of stock exchange information exchange protocol. This document is intended to be the specification.

The data transmission service is available every market day on trading session. On Monday until Thursday the morning trading session starts at 09:00 and ends at 11:30. The afternoon trading session starts at 13:30 and ends at 15:00. On Friday morning trading session starts at 09:00 and ends at 11:30, afternoon trading session starts at 13:30 and ends at 15:00.

I. Information Exchange Protocol Concept

This concept is developed to facilitate the electronic exchange of information related to securities transactions. It is basically adopted from the FIX (Financial Information Exchange) protocol version 4.2, and used partially for IDX purposes. It is used to communicate between exchange's trading engine and broker's brokerage information system engine. To support compatibility, TCP/IP protocol layer is used as transport protocol. Any physical medium that supports TCP/IP can be used to deliver information.

General format for each message:

Header	**DATA**	**Trailer**

The general format of a FIX message is a standard header followed by the message body fields and terminated with a standard trailer. Each message is constructed of a stream of <tag>=<value> fields. Each item/field/column in the message is separated by character ASCII <SOH> (001).

Examples of the messages in their full-length format can be seen at the Appendix A of this document.

Data types are mapped to ASCII strings as follows:

- int: Sequence of digits without commas or decimals and optional sign character (ASCII characters "**-**" and "**0**" - "**9**"). The sign character utilizes one byte (i.e. positive int is "**99999**" while negative int is "**-99999**").
  Examples: 723 in field 21 would be mapped int as |**21=723**|.
  -723 in field 12 would be mapped int as |**12=-723**|
- float: Sequence of digits with optional decimal point and sign character (ASCII characters "**-**", "**0**" - "**9**" and "**.**"); the absence of the decimal point within the string will be interpreted as the float representation of an integer value. All float fields must accommodate up to fifteen significant digits.
- char: Alpha-numeric free format strings, can include any character or punctuation except the delimiter. All char fields are case sensitive (i.e. **jakarta** is not the same with **Jakarta**).
- time: Time/date combination in YYYYMMDD-HH:MM:SS format, colons and dash required. Valid values: YYYY = 0000-9999, MM = 01-12, DD = 01-31, HH = 00-23, MM = 00-59, SS = 00-59.
- date: Date in YYYYMMDD format. Valid values: YYYY = 0000-9999, MM = 01-12, DD = 01-31.

The protocol assumes complete ordered delivery of messages between parties. Implementers should consider this when designing message gap fill processes. Two options exist for dealing with gaps, either request all messages subsequent to the last message received or ask for the specific message missed while maintaining an ordered list of all newer messages. For example, if the receiver misses the second of five messages, the application could ignore messages 3 through 5 and generate a resend request for messages 2 through 5. Another option would involve saving messages 3 through 5 and resending only message 2. In both cases, messages 3 through 5 should not be processed before message 2.

The protocol is based on an optimistic model; normal delivery of data is assumed (i.e. no acknowledgment of individual messages) with errors in delivery identified by message sequence number gaps. Each message is identified by a unique sequence number. It is the receiving application's responsibility to monitor incoming sequence numbers to identify message gaps for response with resend request messages.

The protocol does not support individual message acknowledgment. However, a number of application messages require explicit application level acceptance or rejection. Orders, cancel requests, cancel/replace requests and allocation require specific application level response, execution reports can be rejected with the DK message but do not require explicit acceptance.

II. QRI Header

Tag	*Field Name*	*Comments*	*Valid Value*
8	BeginString	FIX.4.2 (*Always unencrypted, must be first field in message*)	FIX.4.2-JSX
9	BodyLength	(*Always unencrypted, must be second field in message*)	Calculated by system
35	MsgType	(*Always unencrypted, must be third field in message*)	Depend on Msg to be sent.
49	SenderCompID	(*Always unencrypted*)	Sender FIX Engine ID (FIX Engine Setup)
56	TargetCompID	(*Always unencrypted*)	Receiver FIX Engine ID (FIX Engine Setup)
34	MsgSeqNum	*(Can be embedded within encrypted data section.)*	*FIX Engine supplied.*
50	SenderSubID	*(Can be embedded within encrypted data section.)*	*Reserved*
142	SenderLocationID	Sender's LocationID (i.e. geographic location and/or desk) *(Can be embedded within encrypted data section.)*	Trader IP Address supplied by Broker.
52	SendingTime	*(Can be embedded within encrypted data section.)*	*Timestamp from FIX Engine*

III. Administrative Messages

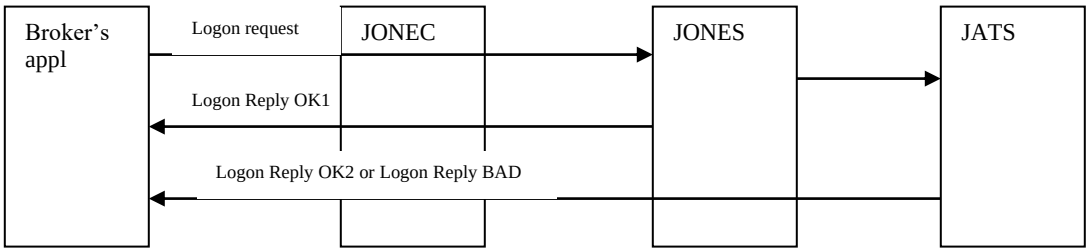
1. LOGON

Logon process flow as follow:

1) Broker's application sends Logon Request message to JONEC (see Logon Request's table below).
2) Broker's application will receive Logon Reply OK1 message from JONES via JONEC (see Logon Reply OK1's table below)
3) Broker's application will receive second message from JATS via JONES and JONEC with condition as follow:
   a) If logon is succesfull, broker's application will receive Logon Reply OK2 message (see Logon Reply OK2's table below).
   b) If logon is rejected, broker's application will receive Logon Reply BAD message (see Logon Reply BAD's table below).
4) Session will be disconnected.

Summary:

- Logon Reply OK will consist of two Logon messages (MsgType=A).
- Logon Reply Bad change from MsgType=A to MsgType=5.



Messages structures are as follow:

- **Logon Request**

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = A (Logon)		
98	EncryptMethod	No encryption	0	See Appendix C
108	HeartBtInt	*FIX Engine setup (seconds)* Supplied by broker	*45*	
6001	UserID	*ID The User logged onto the JATS*	User ID	
6002	CurrentPassword	*The User Current password.* *Password must meet complexity requirements. Minimum password length is 8. Must be combination of alphanumeric characters.*	Supplied by broker	
	Standard Trailer			

- **Logon Reply OK1**

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = A (Logon)		
98	EncryptMethod	No encryption	0	See Appendix C
108	HeartBtInt	*FIX Engine setup (seconds)*	45	
	Standard Trailer			

- **Logon Reply OK2**

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = A (Logon)		
98	EncryptMethod	No encryption	0	See Appendix C
108	HeartBtInt	*FIX Engine setup (seconds)*	45	
6001	UserID	*ID The User logged onto the JATS*	*NO*	
6090	LogonReply	Is required to change Password	1 = Do not need to change password 2 = Current password expires in n day(s) or Password-change-required (should change password before order entry) 3 = password expired. Password change required for user. user must change password first, if user doesn't change password, user will be forced logout. *Password must meet complexity requirements. Minimum password length is 8. Must be combination of alphanumeric characters*	
6091	LogonDesc	Logon Description	JATS Message	
	Standard Trailer			

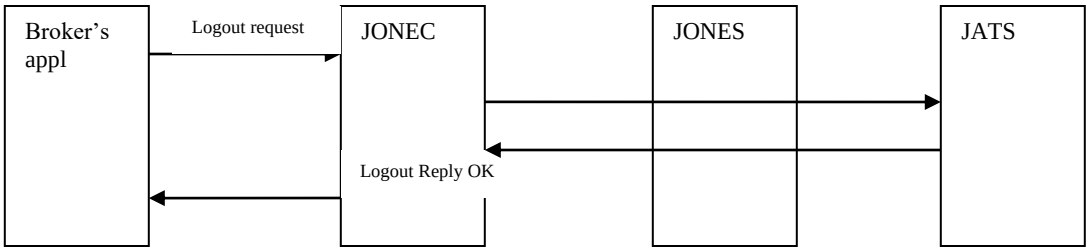
- **Logon Reply BAD**

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = 5 (Logout)		
58	Text	Error message	*Error message*	See Appendix C
	Standard Trailer			

2. Logout

Logout Process as follow:

1) Broker's application sends Logout request message to JONEC (see Logout Request below). Msg Type = 5, with field Text=UserId.
2) Broker's application receives Logout Reply OK from JONES (see Logout Reply OK below). MsgType=5 with field Text="Confirm Logout". And session disconnected.



Note:

- Logout Reply Bad is not required.

- **Logout Request**

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = 5 (Logout)		
58	Text	*UserID the User logged onto the JATS*	*<userid>*	See Appendix C
	Standard Trailer			

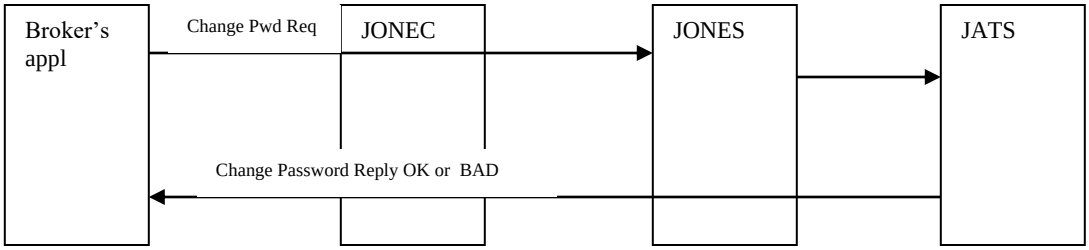
- **Logout Reply OK**

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = 5 (Logout)		
58	Text	Return message	*"confirming logout"*	See Appendix C
	Standard Trailer			

3. Change Password

Process flow as follow:

1) Broker's application sends Change Password Request to JONEC (see Change Password Request's table below)
2) Broker's application receives Change Password Reply OK or Change Password Reply BAD (see Change Password Reply OK's or Change Password Reply BAD's table below)



- **Change Password Request**

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = U1		
6001	UserID	*ID The User logged onto the JATS*	User ID	See Appendix C
6002	Current Password	*The User Current password*		
6003	New Password	*The User New password*		
6004	Return Value	" "	" " (Single Space)	
	Standard Trailer			

- **Change Password Reply OK**

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = U1 (Change Password)		
6001	UserID	*ID The User logged onto the JATS*	" " (Single Space)	See Appendix C
6002	Current Password	*The User Current password*	" " (Single Space)	
6003	New Password	*The User New password*	" " (Single Space)	
6004	Return Value	Text	"User password successfully changed"	
	Standard Trailer			

- **Change Password Reply BAD**

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = U1		
6001	UserID	*ID The User logged onto the JATS*	" " (Single Space)	See Appendix C
6002	Current Password	*The User Current password*	" " (Single Space)	
6003	New Password	*The User New password*	" " (Single Space)	
6004	Return Value	Text Error message		
	Standard Trailer			

IV. Application Messages

4. Order List Subscription (Subscribe or Unsubscribe)

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = U2		
6001	USERID	*ID The User logged onto the JATS*	User ID	See Appendix C
6050	REQTYPE	*Subscription type :* ***O=Order Subscript*** *T=Trade Subscript* *N=Neg Subscript* *L=Limit Subscript* *E=Sec Subscript* *C=Sec Attribute Subscript* *B= Advertising Subscript*	O Supplied by broker	
6051	SEQNUM	*Sequence number*	0	
6052	LAST	*Required if REQTYPE = O* *Required if REQTYPE = T* *Required if REQTYPE = N*	0	
	Standard Trailer			

5. Order List Message

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = 8 (Execution Report)		
37	OrderID	*OrderID is required to be unique for each chain of orders.* *The orderID will be reset at the start of each trading day*	Jats Order number	See Appendix C
11	ClOrdID	*Required for executions against electronically submitted orders which were assigned an ID by the institution. Not required for orders manually entered by the broker.*	Broker Reference	
21	HandlInst	*Instructions for order handling on Broker trading floor*	*=1 for normal order*	
41	OrigClOrdID	*Conditionally required for response to an electronic Cancel or Cancel/Replace request (ExecType=PendingCancel, Replaced, or Canceled). ClOrdID of the previous order (NOT the initial order of the day) when canceling or replacing an order.*	Original JATS number / linked order	
109	ClientID	*Used for firm identification in third-party transactions (should not be a substitute for OnBehalfOfCompID/DeliverToCompID).*	User ID	
76	ExecBroker	*Used for firm identification in third-party transactions (should not be a substitute for OnBehalfOfCompID/DeliverToCompID).*	ExecBrokerID	
17	ExecID	*Must be unique for each Execution Report message*	JATS time stamp (hhmmsszzz) Zzz= milisecond	
20	ExecTransType	*=3 (Status)*	=3 (Status)	
150	ExecType	*Describes the type of execution report. Same possible values as OrdStatus.*	See order request table	
39	OrdStatus	*Describes the current state of a CHAIN of orders, same scope as OrderQty, CumQty, LeavesQty, and AvgPx*	2 – matched order (M) 4 – cancelled order (W) 0 – open order (O) 5 – amended order (A)	
1	Account	*Required for executions against electronically submitted orders which were assigned an account by the institution*	See order request table	

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
64	FutSettDate	*Required when SettlmntTyp = 6 (Future) or SettlmntTyp = 8 (Sellers Option)*	Settledate	
55	Symbol	*Set to single Space*	" "	
65	SymbolSfx	*0RG*	0RG	
48	SecurityID	*Sec req*	Sec req	
54	Side	*Side of order*	1 = Buy 2 = Sell 5 = Sell short M = Margin P = Price Stabilization	
38	OrderQty	*Either CashOrderQty or OrderQty is required. Not required for a rejected cash order or an order ack for a cash order.*	Order qty Order quantity in LOT Advertisement quantity in share	
40	OrdType	*1 – Market Order* *7 – Limit or Better*	1 – Market Order or 7 – Limit or Better	
44	Price	*Required if specified on the order*	Price	
59	TimeInForce	*Absence of this field indicates Day order*	0 – Day order 3- IOC 4- FOK S – Session order	
432	ExpireDate	*Conditionally required if TimeInForce = GTD and ExpireTime is not specified.*	Expire Date	
18	ExecInst	*Can contain multiple instructions, space delimited.*		See Appendix C
151	LeavesQty	*Amount of shares open for further execution. If the OrdStatus is Canceled, DoneForTheDay, Expired, Calculated, or Rejected (in which case the order is no longer active) then LeavesQty could be 0, otherwise LeavesQty = OrderQty - CumQty.*		
14	CumQty	*Currently executed shares for chain of orders.*	0	
6	AvgPx	*Not Applicable*	0	
75	TradeDate	*Used when reporting other than current day trades.*	Matching time stamp	
60	TransactTime	*Time the transaction represented by this ExecutionReport occurred*		
58	Text			
440	ClearingAccount			
376	ComplianceID	*ID used to represent this transaction for compliance Trading-ID purposes*	Trading-ID contains 6 digit alpha numeric of SID (from 8th digit to 13th digit). SID is provided by Indonesian Central Securities Depository (KSEI)	
	Standard Trailer			

6. Trade List Subscription (Subscribe or Unsubscribe)

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = U2		
6001	USERID	*ID The User logged onto the JATS*	User ID	See Appendix C
6050	REQTYPE	*Subscription type :* *O=Order Subscript* ***T=Trade Subscript*** *N=Neg Subscript* *L=Limit Subscript* *E=Sec Subscript* *C=Sec Attribute Subscript* *B= Advertising Subscript*	T Supplied by broker	
6051	SEQNUM	*JATS Sequence number*	0	
6052	LAST	*Required if ReqType = O* *Required if ReqType = T* *Required if ReqType = N*	0	
54	Side	*Required if ReqType = T*	1	
	Standard Trailer			

7. Trade List Message

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = 8 (Execution Report)		
17	ExecID	*Must be unique for each Execution Report message*	JATS time stamp (hhmmsszzz) Zzz= milisecond	See Appendix C
198	SecondaryOrderID	*The Trade number will be reset at the start of each trading day*	Trade number	
37	OrderID	*OrderID is required to be unique for each chain of orders.* *The orderID will be reset at the start of each trading day*	Jats Order number	
60	TransactTime	*Time the transaction represented by this ExecutionReport occurred*	Tradetime	
168	EffectiveTime	*Time specified on the order at which the order should be considered valid*	JATS Order date + JATS Order time	
54	Side	*Side of trade*	1 = Buy 2 = Sell 5 = Sell short M = Margin P = Price Stabilization	

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
11	ClOrdID	*Required for executions against electronically submitted orders which were assigned an ID by the institution. Not required for orders manually entered by the broker.*	Broker Reference	
109	ClientID	*Used for firm identification in third-party transactions (should not be a substitute for OnBehalfOfCompID/DeliverToCompID).*	User ID	
76	ExecBroker	*Used for firm identification in third-party transactions (should not be a substitute for OnBehalfOfCompID/DeliverToCompID).*	Broker ID	
382	**NoContraBrokers**	*Number of ContraBrokers repeating group instances.*	1	
→	***337*** ***ContraTrader***		Counterpart userid – will be set to "--"_	
→	***375*** ***ContraBroker***	*First field in repeating group. Required if NoContraBrokers > 0.*	Counterpart broker ID – will be set to "--"	
1	Account	*Required for executions against electronically submitted orders which were assigned an account by the institution*	I or A or S or F	See Appendix C
55	Symbol		Symbol	
65	SymbolSfx		See order request table Symbolsfx	
48	SecurityID		Sec Req	
44	Price	*Required if specified on the order*	Price	
14	CumQty	*Currently executed shares for chain of orders.*	Matched qty	
58	Text		Value traded N[16]+ Accruedint N[16](future use) + domicile Char[1](future use)+ cpdomicile Char[1] (future use) – will be set to "-"	
440	ClearingAccount	*Set to " " (single space)*		
64	FutSettDate	*Required when SettlmntTyp = 6 (Future) or SettlmntTyp = 8 (Sellers Option)*	Settlement date	

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
150	ExecType	*Describes the type of execution report. Same possible values as OrdStatus.* *Valid value:* *2 = normal match* *6 = pending cancel* *4 = cancelled = withdrawn* *R = crossed*	2 or 6 or 4 or R	
31	LastPx	*Price of this (last) fill. Not required for ExecTransType = 3 (Status), Should represent the "all-in" (LastSpotRate + LastForwardPoints) rate for F/X orders.). When required, should be "0" for non-fills ("fill" defined as ExecTransType=New and ExecType=Partial Fill or Fill) unless noted below. If ExecType=Stopped, represents the price stopped/guaranteed/protected at.*	Regular board price	See Appendix C
20	ExecTransType	*=3 (Status)*	3	
39	OrdStatus	*Describes the current state of a CHAIN of orders, same scope as OrderQty, CumQty, LeavesQty, and AvgPx* *Valid value:* *2 = normal match* *6 = pending cancel* *4 = cancelled = withdrawn* *R = crossed*	2 or 6 or 4 or R	
151	LeavesQty	*Amount of shares open for further execution. If the OrdStatus is Canceled, DoneForTheDay, Expired, Calculated, or Rejected (in which case the order is no longer active) then LeavesQty could be 0, otherwise LeavesQty = OrderQty - CumQty.*	0	
6	AvgPx	*Not Applicable*	0	
376	ComplianceID	*ID used to represent this transaction for compliance Trading-ID purposes*	Trading-ID contains 6 digit alpha numeric of SID (from 8th digit to 13th digit). SID is provided by Indonesian Central Securities Depository (KSEI)	
	Standard Trailer			

8. Negotiation Deal List Subscription (Subscribe or Unsubscribe)

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = U2		
6001	USERID	*ID The User logged onto the JATS*	User ID	See Appendix C
6050	REQTYPE	*Subscription Type :* *O=Order Subscript* *T=Trade Subscript* ***N=Neg Subscript*** *L=Limit Subscript* *E=Sec Subscript* *C=Sec Attribute Subscript* *B= Advertising Subscript*	N Supplied by broker	
6051	SEQNUM		0	
6052	LAST	*Required if REQTYPE = O* *Required if REQTYPE = T* *Required if REQTYPE = N*	0	
	Standard Trailer			

9. Negotiation Deal List Message

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = 8 (Execution Report)		
37	OrderID	*OrderID is required to be unique for each chain of orders.*	JATS deal number	See Appendix C
11	ClOrdID	*Required for executions against electronically submitted orders which were assigned an ID by the institution. Not required for orders manually entered by the broker.*	Broker Reference	
109	ClientID	*Used for firm identification in third-party transactions (should not be a substitute for OnBehalfOfCompID/DeliverToCompID).*	User ID	
76	ExecBroker	*Used for firm identification in third-party transactions (should not be a substitute for OnBehalfOfCompID/DeliverToCompID).*	Broker ID	
382	NoContraBrokers	*Number of ContraBrokers repeating group instances.*	1	
→	***375*** ***ContraBroker***	*First field in repeating group. Required if NoContraBrokers > 0.*	Counterpart broker ID	
→	***337*** ***ContraTrader***		Counterpart userID	

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
17	ExecID	*Must be unique for each Execution Report message*	JATS time stamp (hhmmsszzz) Zzz= milisecond	See Appendix C
20	ExecTransType	*=3 (Status)*	3	
150	ExecType	*Describes the type of execution report.* It is recommended to use OrdStatus instead of ExecType	0 for Unconfirmed deal 2 for Matched deal 4 for withdrawn deal	
39	OrdStatus	*Describes the current state of a CHAIN of orders, same scope as OrderQty, CumQty, LeavesQty, and AvgPx* *0 (new/not matched)* *D Confirmed Deal* *2 (filled/matched)* *4 (canceled/withdrawn)*	0 for Unconfirmed deal D for Confirmed deal 2 for Matched deal 4 for withdrawn deal	
1	Account	*Required for executions against electronically submitted orders which were assigned an account by the institution*	I or A or S or F	
64	SettlDate	*Settlement Date*	T+3 (YYYYMMDD)	
172	SettlDeliveryType	*Identifies type of settlement*	0 = 'Versus. Payment': Deliver (if Sell) or Receive (if Buy) vs. (Againts) Payment 1 = 'Free': Deliver (if Sell) or Receive (if Buy) Free	
55	Symbol		Symbol	
65	SymbolSfx		Symbolsfx	
48	SecurityID		Sec Req	
54	Side	*Side of deal or buy/sell* *1=Buy (Counterpart)* *2=Sell (Initiator)*	1 or 2 or	
44	Price	*Required if specified on the order*	Neg deal price	
168	EffectiveTime	*Time specified on the order at which the order should be considered valid*	Confirm time	

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
31	LastPx	*Price of this (last) fill. Not required for ExecTransType = 3 (Status), Should represent the "all-in" (LastSpotRate + LastForwardPoints) rate for F/X orders.). When required, should be "0" for non-fills ("fill" defined as ExecTransType=New and ExecType=Partial Fill or Fill) unless noted below. If ExecType=Stopped, represents the price stopped/guaranteed/protected at.*	Regular board price	See Appendix C
151	LeavesQty	*Amount of shares open for further execution. If the OrdStatus is Canceled, DoneForTheDay, Expired, Calculated, or Rejected (in which case the order is no longer active) then LeavesQty could be 0, otherwise LeavesQty = OrderQty - CumQty.*	0	
14	CumQty	*Currently executed shares for chain of orders.*	0	
6	AvgPx	*Not Applicable*	0	
58	Text	*Domicile (future use) + Space[1] + Counterpart Trading-ID + space[1]*	*Space[1] + Space[1] + Counterpart Trading-ID + space[1]*	
440	ClearingAccount	*Set to " " (single space)*	" "	
376	ComplianceID	*ID used to represent this transaction for compliance Trading-ID purposes*	Trading-ID contains 6 digit alpha numeric of SID (from 8th digit to 13th digit). SID is provided by Indonesian Central Securities Depository (KSEI)	
38	OrderQty	*Negdeal quantity*	Negdeal quantity	
	Standard Trailer			

10. Securities Subscription (Subscribe or Unsubscribe)

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = U2		
6001	USERID	*ID The User logged onto the JATS*	User ID	See Appendix C
6050	REQTYPE	*Subscription Type :* *O=Order Subscript* *T=Trade Subscript* *N=Neg Subscript* *L=Limit Subscript* ***E=Sec Subscript*** *C=Sec Attribute Subscript* *B= Advertising Subscript*	E *Supplied by Broker*	
6051	SEQNUM	*Sequence number*	0	

65	SymbolSfx	*Required if REQTYPE = E* *Required if REQTYPE = C*	See new order request table	See Appendix C
6009	MARKETCODE	*Required if REQTYPE = E* *"EQ" for equity market*	EQ	
	Standard Trailer			

Hint :

User can only subscribes securites list from one board in the same time. In order to get the securities list from another board, user must unsubscribe the active securities subscription and then subscribe securities list from another board.

11. Securities Message

Tag	Field Name	Comments	Valid Value	Type
	Standard Header	MsgType = U4 (Security Report)		
6005	Record Number	*N / A*	1	See Appendix C
48	SecurityID	*See order request table*	See order request table	
55	Symbol	*See order request table*	See order request table	
6006	REMARKS	*Security remarks*	Security remarks	
6071	REMARKS2	*Security remarks2*	Security remarks2	
6007	SHORTNAME	*Security shortname*	Security shortname	
6008	STATUS	*A (active) or S (Suspended)*	A (active) or S (Suspended)	
326	SecurityTradingStatus	*N (not available) -> 2 (Trading Halt)* *O (open price period) -> 14 (ITS Pre-Opening)* *T (trading normally)-> 17(Ready Trade)* *C (closed for trading) -> 18(Not Available for trading)* *P (pre-close trading)-> 24* *S (post trading) ->25*	N (not available) -> 2 (Trading Halt) O (open price period) -> 14 (ITS Pre-Opening) T (trading normally)-> 17(Ready Trade) C (closed for trading) -> 18(Not Available for trading) *P (pre-close trading)-> 24* *S (post trading) ->25*	
6009	MARKETCODE	*Market code for security*	Market code for security	
6010	INSTRCODE	*Instrument table for security*	- INDS - ORDI - ORDI_PREOPEN - RGHI - WARI - MUTI for mutual fund ETF - ACCEL - WATCHLIST	
65	SymbolSfx	*"0" + Board Code, without space*	"0" + Board Code, without space	
6012	SECTORCODE	*Sector*	Sector	
6013	ORDERMETHODS	*Order method*	Order method	
6014	LOTSIZE	*Size from Lot*	Size from Lot	
6015	MINIMUMSTEP	*N / A*	0	
6018	FACEVALUE	*FACEVALUE*	FACEVALUE	
6019	FACEUNIT	*FACEUNIT*	FACEUNIT	
6020	EARNINGS	*EARNINGS*	EARNINGS	
6021	PREVIOUSDATE	PREVIOUSDATE Null when first trading date	PREVIOUSDATE Null when first trading date	
6022	PREVIOUSPRICE	PREVIOUSPRICE Null when first trading date	PREVIOUSPRICE Null when first trading date	

Tag	Field Name	Comments	Valid Value	Type
6023	PRICEFORMAT	*PRICEFORMAT*	PRICEFORMAT	
6024	DECIMALS	*DECIMALS*	DECIMALS	See Appendix C
6025	QUANTITYLIMIT	*N / A*	0	
6028	VOLTRADED	*N / A*	0	
6029	VALTRADED	*N / A*	0	
6030	YIELD	*YIELD*	YIELD	
158	AccruedInterestRate	*AccruedInterestRate*	AccruedInterestRate	
6032	PRIMARYDIST	*PRIMARYDIST*	PRIMARYDIST	
6033	FOREIGNLIMIT	*FOREIGNLIMIT*	FOREIGNLIMIT	
6034	FOREIGNLEVEL	*N / A*	0	
6035	FOREIGNAVAIL	*N / A*	0	
6036	INDEX	*INDEX*	INDEX	
6037	OPENORDERS	*N / A*	0	
6038	LISTEDSIZE	*LISTEDSIZE*	LISTEDSIZE	
6039	TRADEABLESIZE	*TRADEABLESIZE*	TRADEABLESIZE	
6040	AVGLAST	*Average closing price*	Average closing price	
6041	LISTINGDATE	*LISTINGDATE*	LISTINGDATE	
6070	DELISTINGDATE	*DELISTINGDATE* *Applicable for Warrant and Right*	DELISTINGDATE	
6048	COUPONFREQ	*COUPONFREQ*	COUPONFREQ	
6042	LASTRECORD	*LASTRECORD*	0 for all record 1 for last record	
	Standard Trailer			

Explanation of OrderMethods (tag 6013):

market (0), --@ Market orders match at the best possible price.
limit (1), --@ A limit order is placed in a matching queue where it will remain until it is filled or expires according to the specifiedtime. It can be matched at the limit or a better price
oco (2), --@ The order is part of a one-cancels-the-othergroup
negdeal (3), --@ A negotiated deal is an order, which is to be matched by a known counter party. Such deals have usually been verbally arranged prior to entry
cross (4), --@ An order where the buy and sell side are the same firm
marketmaker (5), --@ Indicates this is an order entered by a Market Maker. Market Makers may enter simultaneous bid and offer prices on certain securities
NOT USED (6), --@ignore this bit
orbetter (7), --@ Or Better orders will ignore reasonable price checks
undisclosed (8), --@ Indicates that the system considers the undisclosed quantity available for matching at all times, unlike the Hidden Order Method, which allows only the visible quantity to be matched
buyin (9), --@ A special form of order used to take over another trader's position (or part of that position) due to short selling
yield (10), --@ For fixed interest securities only. Matching occurs when the expected yield for the security matches the specified yield.
hidden (11), --@ The order quantity that is invisible to the market. Only the visible quantity is available for matching
stop (12), --@ An order to buy if price rises to the price entered against the order, or sell if price falls to the price specified in the order
settledate (13), --@ Allows the user to enter a date for settlement that overrides the systems default settlement period. Settlement date is calculated as T+ N days.
notrdacc (14), --@ Indicates the order does not require a trading account or account type
fodetails (15), --@ Indicates that clearing details must be entered with the order
fillallornone (16), --@ The full quantity of the order must be filled before the order will match.
fillpartmin (17), --@ The specified quantity of the order must be filled before the order will match.
fillzeromin (18), --@ Any quantity of the order can be filled to match the order.
public (19), --@ Specify whether user details should be public to the market system when the trader who entered the order logs off or is disconnected from the Trader Workplace. When an order is purged, its status is changed to Withdrawn

cab (20), --@ CAB orders are closing orders for contracts that have no value. These must be entered with a price of 0.01
compgenorder (21), --@ Computer generated order
goodtilltime (22), --@ The order is valid until a specified time
session (23), --@ Order that is valid for the current trading session or for a specified session only
day (24), --@ An order which is valid for the full day's trading
goodtilldate (25), --@ The order is valid until the specified date
goodtillcancelled (26), --@ The order is valid until cancelled by the trader or firm manager
immwithdraw (27), --@ The order is either filled as much as possible, or in its entirely upon entering the order book depending on the 'All or None' flag. Otherwise the order is withdrawn completely.
tracking (28), --@ order's price tracks another secboard's price
manual (29), --@ if set, order trades manually, not automatically
automatic (30), --@ if set, order trades automatically
efpnegdeal (31), --@ Exchage for Physical type of Neg Deal
blknegdeal (32), --@ Block Trade type of Neg Deal
NOT USED (33), --@ignore this bit
short (34), --@ if set, orders are short-sell orders

12. Trading Limit Subscription (Subscribe or Unsubscribe)

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = U2		
6001	USERID	*ID The User logged onto the JATS*	User ID	See Appendix C
6050	REQTYPE	*Subscription Type :* *O=Order Subscript* *T=Trade Subscript* *N=Neg Subscript* ***L=Limit Subscript*** *E=Sec Subscript* *C=Sec Attribute Subscript* *B= Advertising Subscript*	L *Supplied by broker*	
6051	SEQNUM	*Sequence Number*	0	
76	ExecBroker	*Used for firm identification in third-party transactions (should not be a substitute for OnBehalfOfCompID/DeliverToCompID).*	Broker ID	
	Standard Trailer			

13. Trading Limit Message

Tag	Field Name	Comments	Valid Value	Type
	Standard Header	MsgType = U6		
6051	SEQNUM	Sequence Number	Sequence Number	See Appendix C
76	ExecBroker	Used for firm identification in third-party transactions (should not be a substitute for OnBehalfOfCompID/DeliverToCompID).	Broker ID	
15	Currency	Currency Code. Ex: RPH	Currency Code. Ex: RPH	
6054	TAG	“KPEI”	“KPEI”	
6055	DESCRIPTION	Description of record	Description of record	

6056	OPENBAL	Opening cash balance. The first character is either '+' or '-'	Opening cash balance. The first character is either '+' or '-'	See Appendix C
6057	CURRENTPOS	Current cash position taking into account matched trades and negotiated deals. The first character is either '+' or '-'	Current cash position taking into account matched trades and negotiated deals. The first character is either '+' or '-'	
6058	PLANNEDPOS	Current cash position taking into open order. The first character is either '+' or '-'	Current cash position taking into open order. The first character is either '+' or '-'	
6059	LIMIT1	0	0	
6060	LIMIT1SET	N	N	
6061	LIMIT2	Limit value. It is the maximal value of field PlannedPos	Limit value. It is the maximal value of field PlannedPos	
6062	LIMIT2SET	Y	Y	
	Standard Trailer			

14. Security Attribute Subscription (Subscribe or Unsubscribe)

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = U2		
6001	USERID	*ID The User logged onto the JATS*	User ID	See Appendix C
6050	REQTYPE	*Subscription Type :* *O=Order Subscript* *T=Trade Subscript* *N=Neg Subscript* *L=Limit Subscript* *E=Sec Subscript* ***C=Sec Attribute Subscript*** *B= Advertising Subscript*	C	
6051	SEQNUM	*Sequence Number*	0	
65	SymbolSfx	*"0" + Board Code* *0RG (without space).*	"0" + Board Code *(RG only)* 0RG (without space).	
48	SecurityID	*Required if REQTYPE = E* *Required if REQTYPE = B* *Required if REQTYPE = C*	Security Number	
6009	MARKETCODE	*Required if REQTYPE = E* *Required if REQTYPE = C*	EQ	
	BOARD	*Board Id*	Board Id	
	Standard Trailer			

15. Security Attribute Message

Tag	Field Name	Comments	Valid Value	Type
	Standard Header	MsgType = U5 (Security_Change_Report)		
6051	SEQNUM	N[10]	Sequence number	See Appendix C

6044	SECINDEX		N[6]	Security index	See Appendix C
48	SecurityID		C[12]	Sec. req	
65	SymbolSfx		C[3]	without space	
6045	NoSecCReport		N[2]	Number of attribute in this message (N)	
→	6046	SecCReport Code	Attribute code [1 s/d N] (see attribute table)	Attribute code [1 s/d N] (see attribute table)	
→	6047	SecCReport Data	Atribute Data [1 s/d N] (see attribute table). Code e attribute (individual index) is N[9]. this format if shown in the application must be change to decimal format (4.5)	Atribute Data [1 s/d N] (see attribute table). Code e attribute (individual index) is N[9]. this format if shown in the application must be change to decimal format (4.5)	
	Standard Trailer				

Attribute Table

Attribute Code	Type	Data
B	C[1]	A (active) or S (suspended)
C	N[9]	Best bid
D	N[10]	Bid quantity at best bid price level
G	N[9]	Best Offer
H	N[10]	Offer quantity at best offer price level
K	N[9]	Open price for security today
L	N[9]	Highest traded price for security today
M	N[9]	Lowest traded price for security today
N	N[9]	Last traded price for security today

16. Advertising Subscription (Subscribe or Unsubscribe)

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = U2		
6001	USERID	*ID The User logged onto the JATS*	User ID	See Appendix C
6051	SEQNUM	*Sequence number*	0	
48	SecurityID	*Required if REQTYPE = E* *Required if REQTYPE = B* *Required if REQTYPE = C*	Security number	
6050	REQTYPE	*Subscription Type :* *O=Order Subscript* *T=Trade Subscript* *N=Neg Subscript* *L=Limit Subscript* *E=Sec Subscript* *C=Sec Attribute Subscript* ***B= Advertising Subscript***	B *Supplied by broker*	
65	*SymbolSfx*	*Boad Code (NG only)*	"0" + "NG" 0NG (without space).	
	Standard Trailer			

17. Advertising Message

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = 8 (Execution Report)		
37	OrderID	*OrderID is required to be unique for each chain of orders.*	Jats Order number	See Appendix C
11	ClOrdID	*Required for executions against electronically submitted orders which were assigned an ID by the institution. Not required for orders manually entered by the broker.*	Broker Reference	
21	HandlInst	*Instructions for order handling on Broker trading floor*	*=2 for Advertisement*	
41	OrigClOrdID	*Conditionally required for response to an electronic Cancel or Cancel/Replace request (ExecType=PendingCancel, Replaced, or Canceled). ClOrdID of the previous order (NOT the initial order of the day) when canceling or replacing an order.*	Original JATS number / linked order	
109	ClientID	*Used for firm identification in third-party transactions (should not be a substitute for OnBehalfOfCompID/DeliverToCompID).*	User ID	
76	ExecBroker	*Used for firm identification in third-party transactions (should not be a substitute for OnBehalfOfCompID/DeliverToCompID).*	ExecBrokerID	
17	ExecID	*Must be unique for each Execution Report message*	JATS time stamp (hhmmsszzz) Zzz= milisecond	
20	ExecTransType	*=3 (Status)*	=3 (Status)	
150	ExecType	*Describes the type of execution report. Same possible values as OrdStatus.*	See order request table	
39	OrdStatus	*Describes the current state of a CHAIN of orders, same scope as OrderQty, CumQty, LeavesQty, and AvgPx*	4 – cancelled order (W) 0 – open order (O) 5 – amended order (A)	
1	Account	*Required for executions against electronically submitted orders which were assigned an account by the institution*	See order request table -will be set to space-	
64	FutSettDate	*Required when SettlmntTyp = 6 (Future) or SettlmntTyp = 8 (Sellers Option)*	Settledate	
55	Symbol	*Set to single Space*	“ “	

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
65	SymbolSfx	*0RG*	0NG	See Appendix C
48	SecurityID	*Sec req*	Sec req	
54	Side	*Side of order*	1 = Buy 2 = Sell	
38	OrderQty	*Either CashOrderQty or OrderQty is required. Not required for a rejected cash order or an order ack for a cash order.*	Order qty Order quantity in LOT Advertisement quantity in share	
40	OrdType	*1 – Market Order* *7 – Limit or Better*	1 – Market Order or 7 – Limit or Better	
44	Price	*Required if specified on the order*	Price	
59	TimeInForce	*Absence of this field indicates Day order*	0 – Day order S – Session order 7 – Limit Or Better	
432	ExpireDate	*Conditionally required if TimeInForce = GTD and ExpireTime is not specified.*	Expire Date	
18	ExecInst	*Can contain multiple instructions, space delimited.*		
151	LeavesQty	*Amount of shares open for further execution. If the OrdStatus is Canceled, DoneForTheDay, Expired, Calculated, or Rejected (in which case the order is no longer active) then LeavesQty could be 0, otherwise LeavesQty = OrderQty - CumQty.*		
14	CumQty	*Currently executed shares for chain of orders.*	0	
6	AvgPx	*Not Applicable*	0	
75	TradeDate	*Used when reporting other than current day trades.*	Matching time stamp	
60	TransactTime	*Time the transaction represented by this ExecutionReport occurred*		
58	Text			
440	ClearingAccount			
	Standard Trailer			

18. News Message

Used to inform news message from exchange.

Tag	Field Name		Comments	Valid Value	Type
	Standard Header		MsgType = B		
33	LinesOfText		Number of news in this message (N)	Number of news in this message (N)	See Appendix C
→	58	Text	News title	Free format	
→	354	EncodedText Len	Value=8	8	
→	355	EncodedText	News number	News number	
42	OrigTime		News release time from JATS	Datetime	
148	Headline		Consist of 3 fields: 1. Type C[3] 2. Underscore Char[1] 3. Symbol	Valid values: 1. REP or GEN: REP=Company Reports, GEN=General Announcements. 2. Underscore = "_". 3. Symbol = tag 55.	
	Standard Trailer				

19. Trading Info Reply Message

Used to inform the stock suspend, user suspend, or direct warning from trading administrator to certain trader/all traders.

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = h (Trading Info)		
336	TradingSessionID	*TradingSessionID*	"JSX"	See Appendix C
340	TradSesStatus	*Halt*	1	
58	Text	*Stock suspend or user suspend or direct warning from trading administrator*	<trading information>	
	Standard Trailer			

20. Possible Duplicate Fix Message

Used to inform brokerage firm that there is possible duplicate fix message for previous trader message request.

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = U7		
6063	Error Code	*Error Code*	1	See Appendix C
6064	Error Level	*Error Level*	1	
6065	Ref Error Code	*Ref Error Code*	Possible Duplicate/ Resend Message is Rejected + BrokerRef	

58	Error Message	*Error Message*	Fix Interpretation Error	See Appendix C
6066	Previous request	*FIX MsgType*	FIX MsgType	
	Standard Trailer			

21. Unknown JONEC Message

Used to inform broker's application that message which is sent to JONES via JONEC is unknown. Make sure it complies the message rule.

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = U7		
6063	Error Code	*Error Code*	2	See Appendix C
6064	Error Level	*Error Level*	1	
6065	Ref Error Code	Ref Error Code	Tags value on Fix Message + BorkerRef	
58	Error Message	*Unknown FIX Mesg*	Unknown FIX Message	
6066	Previous request	*Null*	Null	
	Standard Trailer			

22. JONEC Message Interpretation Error

Warning for trader that specific message type which already sent to JATS cannot identified tag by tag or some tag didn't follow ORI rules.

Tag	*Field Name*	Comments	Valid Value	Type
	Standard Header	MsgType = U7		
6063	*Error Code*	Error Code	3	See Appendix C
6064	*Error Level*	Error Level	1	
6065	Ref Error Code	"Tag 65 = ORG " = Invalid Board "Tag 48 = YY " = Invalid Security "Error at Tag XX = YY" + BrokerRef	"Tag 65 = ORG " "Tag 48 = 15000 " "Error at Tag XX = YY" + BrokerRef	
58	Error Message	FIX Msg Interpretation Error	"Invalid Board " "Invalid Security " "FIX Msg Interpretation Error "	
6066	*Previous request*	Previous request	Null	
	Standard Trailer			

23. Broadcast Table Full

Warning if JONES cannot receive broadcast message from JATS, because broadcast table is full

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = U7		
6063	Error Code	*Error Code*	1	See Appendix C

6064	Error Level	*Error Level*	1	See Appendix C
6065	Ref Error Code	*Ref Error Code*	"Broadcast Buffer Full (MARTINS)"	
58	Error Message	*Unknown JATS Mesg*	Broadcast Buffer Full	
6066	Previous request	*FIX MsgType*	FIX MsgType	
	Standard Trailer			

24. JATS Interpretation Error Reply Message

Used to inform the internal error in IDX's Application. JATS's message cannot divides into JONES message standard.

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = U7		
6063	Error Code	*5 = JATS Interpretation Error*	5	See Appendix C
6064	Error Level	*1 = JATS Interpretation Error*	1	
6065	Ref Error Code	Ref Error Code	Broadcast Fix Message + BrokerRef	
58	Error Message	*JATS Interpretation Error*	"JATS Interpretation Error " "Cannot send fix BC Message to JONEC"	
6066	Previous request	*FIX MsgType*	FIX MsgType	
	Standard Trailer			

25. Empty Security List

Message for trader for the last security for specific board.

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = U7		
6063	Error Code	*Error Code*	8	See Appendix C
6064	Error Level	*Error Level*	0	
6065	Ref Error Code	*Ref Error Code*	Board Code + BrokerRef	
58	Error Message	*Text*	Empty Security Request	
6066	Previous request	*FIX MsgType*	FIX MsgType	
	Standard Trailer			

26. Failed to send Heartbeat to JATS

Warning if JONES cannot send hearbeat to JATS for the user connection..

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = U7		
6063	Error Code	*Error Code*	3	See Appendix C
6064	Error Level	*Error Level*	1	

6065	Ref Error Code	*Ref Error Code*	Error Connection to JATS on User sent Heartbeat to JATS	See Appendix C
58	Error Message	*Text*	Failed to send JATS	
6066	Previous request	*FIX MsgType*	FIX MsgType	
	Standard Trailer			

27. Market Info Reply Ok Message

Used to inform that the market information request served

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = U7		
6063	Error Code	*Error Code*	0	See Appendix C
6064	Error Level	*Error Level*	0	
6065	Ref Error Code	*Ref Error Code*	”Tag 65 = ” + board ”Tag 48 = ” + security + BrokerRef	
58	Error Message	*Explanation*	“Subscription Success” “Subscription Failed” "Unsubscription Success" "Unsubscription Failed"	
6066	Previous request	*FIX MsgType*	FIX MsgType	
	Standard Trailer			

28. Market Info Reply Bad Message

Used to inform that the market information request cannot be served

Tag	*Field Name*	*Comments*	*Valid Value*	*Type*
	Standard Header	MsgType = U7		
6063	Error Code	*Error Code*	3	See Appendix C
6064	Error Level	*Error Level*	1	
6065	Ref Error Code	*Ref Error Code*	Tag XX = YY + BrokerRef	
58	Error Message	*Explanation*	Invalid Subscription :: <reason why the request message cannot be served>	
6066	Previous request	*FIX MsgType*	FIX MsgType	
	Standard Trailer			

V. Message Trailer

Each message is terminated by a standard trailer. The trailer is used to segregate messages and contains the three digit character representation of the Checksum value.

The message trailer format is as follows:

Message Trailer

Tag	*Field Name*	*Type*	*Description*
10	CheckSum	Char	Three byte, simple checksum (see Appendix B for description). ALWAYS THE LAST FIELD IN RECORD; i.e. serves, with the trailing <SOH>, as the end-of-record delimiter. Always defined as three characters.

Trailer example:
The characters are:
'10=212<SOH>'

Appendix A

Example of Messages

The general format for each message, no matter what the DATA type is, should be like this:

Header	DATA	Trailer

Please note that each item/field/column in the message is separated by character ASCII <SOH> (001), so the representation of <SOH> in this document, is only for ease of use purpose. Upon implementation, the <SOH> is really a one byte ASCII character.

Here is some examples :

LOGON MESSAGE (see logon request table)

Logon message will consists of header, data, and trailer.

The data part: (please refer to data type, for this example is logon data type)
'98=2<SOH> → encrypt method
108=45<SOH> → heartbeat
95=22<SOH> → raw data length
96=MyUserID0001MyPassword<SOH>' → raw data

The trailer string:
'10=212<SOH>' → three bytes checksum

The full-length format of the above logon message is:

'[Header]<SOH>98=2<SOH>108=45<SOH>95=22<SOH>96=MyUserID0001MyPassword<SOH>10=212<SOH>'

Appendix B

FIX Documentations

Since the Financial Information Exchange/FIX was initiated by an organization of institutions and brokers interested in streamlining their trading processes, the specification of FIX protocol messages can be referred at their online resources at:

http://www.fixprotocol.org/specification/fix-42.html

Some of useful information in it:

- Introduction to FIX
- FIX Message Format
- FIX Field Definitions
- More detailed explanations on FIX Messages
- Business Terms
- Etc.

Appendix C

List Field Type

Tag	*Field Name*	*Type*
1	Account	C[12]
6	AvgPx	N[16]
11	ClOrdID	C[15]
14	CumQty	N[16]
15	Currency	C[4]
17	ExecID	N[9]
18	ExecInst	C[1]
20	ExecTransType	N[1]
21	HandlInst	N[1]
31	LastPx	N[16]
33	LinesOfText	N[5]
37	OrderID	N[12]
38	OrderQty	N[16]
39	OrdStatus	N[1]
40	OrdType	N[1]
41	OrigClOrdID	C[20]
42	OrigTime	C[17]
44	Price	N[16]
48	SecurityID	C[12]
54	Side	C[1]
55	Symbol	C[21]
58	Text	C[255]
59	TimeInForce	C[1]
60	TransactTime	N[9]
64	FutSettDate	N[8]
65	SymbolSfx	C[3]
75	TradeDate	C[17]
76	ExecBroker	C[12]
98	EncryptMethod	N[1]
108	HeartBtInt	N[3]
109	ClientID	C[12]
148	Headline	C[25]

Tag	*Field Name*	*Type*
150	ExecType	N[1]
151	LeavesQty	N[16]
158	AccruedInterestRate	N[16]
168	EffectiveTime	C[17]
198	SecondaryOrderID	N[12]
326	SecurityTradingStatus	C[1]
336	TradingSessionID	C[3]
337	ContraTrader	C[12]
340	TradSesStatus	N[1]
354	EncodedTextLen	N[1]
355	EncodeText	N[8]
375	ContraBroker	C[12]
376	ComplianceID	C[15]
382	NoContraBrokers	N[1]
432	ExpireDate	N[8]
440	ClearingAccount	C[10]
6001	USERID	C[12]
6002	Current Password	C[10]
6003	New Password	C[10]
6004	Return Value	C[255]
6005	Record Number	N[8]
6006	REMARKS	C[255]
6007	SHORTNAME	C[21]
6008	STATUS	C[1]
6009	MARKETCODE	C[4]
6010	INSTRCODE	C[12]
6012	SECTORCODE	C[4]
6013	ORDERMETHODS	C[35]
6014	LOTSIZE	N[8]
6015	MINIMUMSTEP	N[9]
6018	FACEVALUE	N[16]
6019	FACEUNIT	C[4]

Tag	Field Name	Type
6019	FACEUNIT	C[4]
6020	EARNINGS	N[16]
6021	PREVIOUSDATE	N[8]
6022	PREVIOUSPRICE	N[9]
6023	PRICEFORMAT	C[12]
6024	DECIMALS	N[2]
6025	QUANTITYLIMIT	N[10]
6028	VOLTRADED	N[16]
6029	VALTRADED	N[16]
6030	YIELD	N[9]
6032	PRIMARYDIST	C[1]
6033	FOREIGNLIMIT	N[10]
6034	FOREIGNLEVEL	N[16]
6035	FOREIGNAVAIL	N[16]
6036	INDEX	N[9]
6037	OPENORDERS	N[7]
6038	LISTEDSIZE	N[12]
6039	TRADEABLESIZE	N[12]
6040	AVGLAST	N[9]
6041	LISTINGDATE	N[8]
6042	LASTRECORD	C[1]
6044	SECINDEX	N[6]
6045	NoSecCReport	N[2]

Tag	Field Name	Type
6046	Attribute code [1 s/d N]	C[1]
6047	Atribute Data [1 s/d N]	C[1]
6048	COUPONFREQ	N[9]
6050	REQTYPE	C[1]
6051	SEQNUM	N[10]
6052	LAST	N[12]
6054	TAG	C[4]
6055	DESCRIPTION	C[30]
6056	OPENBAL	N[+/-][16]
6057	CURRENTPOS	N[+/-][16]
6058	PLANNEDPOS	N[+/-][16]
6059	LIMIT1	N[+/-][16]
6060	LIMIT1SET	C[1]
6061	LIMIT2	N[+/-][16]
6062	LIMIT2SET	C[1]
6063	Error Code	N[1]
6064	Error Level	N[1]
6065	Ref Error Code	C[255]
6066	Previous request	C[2]
6070	DELISTINGDATE	N[8]
6071	REMARKS2	C[255]
6090	LogonReply	N[1]
6091	LogonDesc	C[255]

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