



By SBI Digital Asset Holdings and SIX

Aquis Trading Protocol (ATP) Specification

For Crypto Derivatives Market

Version 1.2

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## Version History

Version	Date	Comments
1.0	Dec 2023	First version
1.1	Mar 2024	Quote Request Message: Added new message Quote Request Notification: Added new message Quote Add Message: Added new message Quote Modify Message: Added new message Quote Cancel Message: Added new message
1.2	July 2024	Order Add Extended Message: Added Day TimeInForce Cancelled Reason Codes: Added value = 0, for IOC and FOK cancels Modified Reason Codes: Removed value = 9 and value = 11

# 1 Introduction

AsiaNext uses the proprietary binary protocol developed by Aquis Technologies for an efficient, streamlined and low latency order entry and trading activity. The protocol is called Aquis Trading Protocol (ATP).

This document describes the protocol and message formats for this trading interface. It is intended for those firms which are planning to develop against the protocol.

## 1.1 Connectivity

AsiaNext will provide trading Members that wish to use ATP to access the platform with the necessary IP address and port information to establish a TCP/IP connection for each of their trading sessions.

In addition, a senderID and optional password for each session will be agreed.

One or more connections will be provided to the customer test environment and, on successful certification, connection details to the primary and backup production trading environments will be supplied. Connectivity options should be discussed with the AsiaNext.

## 1.2 Enquiries / Support

Please contact the AsiaNext support team (email [onboarding@asianext.com](mailto:onboarding@asianext.com)) for any questions related to this document.

## 2 Overview

### 2.1 Message Structure and Sequence Number Logic

The message structure principles for ATP are to provide efficient, fixed-length messages with binary field data directly aligned to the internal message structure used by the trading system.

To avoid unnecessary traffic on the internal trading system, session messages (login, logout and heartbeat) are not sequenced – only business messages relating to orders and trades are sequenced and recoverable. Sequenced messages belong to one of two streams - trading Member to AsiaNext or AsiaNext to trading Member - each with their own numbering starting at 1 each trading session.

The sequence number of business messages to AsiaNext must always increase. A message with a sequence number that is lower than, or the same as, one already seen will lead to the session being terminated. The sequence number of business messages sent from AsiaNext to the trading Member will also increase, incremented by 1 on each business message.

Only fields and values indicated in the specification are valid. Other fields and values are not valid and should not be sent to the exchange.

## 3 Order Reference

In the ATP protocol it is not necessary for a separate client order identifier to be sent on an Order Add message. The sequence number of the Order Add message is used by both sides as an 'order reference' to identify to that order in subsequent messages.

For example, if an Order Add message is sent in with *msgSeqNo* = 121, then any subsequent Order Modify messages for that order should carry *orderRef* = 121. Similarly, an Order Cancel message should also carry the *orderRef* value. Responses and Trade messages from AsiaNext will also carry *orderRef* = 121 to refer to the relevant order.

Note that if an Order Modify or Order Cancel message is sent in with, for example, *msgSeqNo* = 143 then the Order Modify Response or Order Cancel Response message would carry *orderRef* = 121 and *requestRef* = 143 to identify both the order and the request.

For the convenience of trading Members a *userTag* field has also been made available on Order Add, Order Cancel and Order Modify messages. This value is echoed back by AsiaNext on the related Response messages and also on Trade messages. This allows the trading Member to link business messages back to their own order tracking system using their own internal identifiers. Note that the *userTag* is a free-format field and is not validated by AsiaNext; it may be left blank if not used by the trading Member.

### 3.1 Cancel on Disconnect

All open orders are cancelled automatically if the trading Member ends their session or the connection drops.

### 3.2 Self-Trade Prevention

Self-Trade Prevention is set for Liquidity Provider.

When a Liquidity Provider has multiple trading connections, AsiaNext offers the option for self-trade prevention to be configured across these trading sessions. This prevents a Liquidity Provider from trading with themselves by cancelling the resting order that would otherwise match.

- **Cancel Resting Order** – If an incoming (or price modified) order would trade with another order from that Liquidity Provider that is already on the AsiaNext order book, the existing resting order is automatically cancelled. The incoming order may trade with other orders, or is posted to the order book, as normal.

### 3.3 Post-Only and Post-Only Cancel Replace Order Types

PO, POCR order types are enabled for liquidity providers only.

If the order is cancelled back to prevent an aggressive trade the Order Add Response message will carry the *status* of Cancelled with *cancel reason* code 9 (post-only) or reason code 11 (post-only cancel resting) for PO & POCR respectively.

A PO, POCR order can be cancelled like any other order.

If a PO, POCR order is modified (for example to change price) it will only be updated on the order book if it will not trade on entry, otherwise the order will be cancelled back to the trading Member.

## 4 ATP Message Formats

This section provides details of the message formats used within the AsiaNext Trading Protocol. This includes data types, message headers, message fields and descriptions.

### 4.1 Data Types

In all messages, 1-byte packing is used and all integers are represented in little-endian format.

Data type	Size	Value
char( <i>n</i> )	<i>n</i>	Left justified ascii string, padded with zero (0x00) to length <i>n</i>
u8	1	unsigned integer 0 – 255
u16	2	unsigned integer 0 – 65,535
u32	4	unsigned integer 0 – 4,294,967,295
u64	8	unsigned integer 0 – $2^{64} - 1$
Price	8	unsigned integer representing price with 5 decimal places implied i.e. value 1462500 represents a price of 14.625
Time	8	unsigned integer representing elapsed time in nanoseconds* since Unix epoch 00:00 UTC on 1st January 1970

\*The AsiaNext system is in format `yyyymmdd-hh:mm:ss.SSSSSS`. This time is multiplied by 1000 to convert  $\mu$ s to ns.

### 4.2 Message Structure

All ATP messages carry a standard message header followed (for most message types) by a message body.

The header identifies the length and type of the message and, where appropriate, the sequence number of the message. The message body for a particular type of message is always a fixed length with all fields in a fixed order to support efficient creation and parsing of the binary ATP messages.

#### 4.2.1 Message Header

The structure of the ATP message header is as follows:

Field name	Type	Offset	Width	Comments
Length	u16	0	2	Length of message including this header
msgType	u8	2	1	Message type
msgSeqNo	u64	3	8	Message sequence number, from the user or AsiaNext

### 4.3 Session Level Messages

All ATP session level messages are unsequenced. They carry the next sequence number that will be sent on the next business message in that stream (trading Member to AsiaNext or AsiaNext to trading Member). The value does not increment until a business level message is sent.

### 4.3.1 Login Message

The Login message is sent by the trading Member as the initial message used to establish a trading session. It is also used to re-establish a session after a break.

Field name	Type	Offset	Width	Comments
<i>Header</i>		0	11	<i>msgType = 1</i>
protocolVersion	u16	11	2	Version of the protocol being used
senderID	char(16)	13	16	Value as agreed with AsiaNext to identify the Member's ATP session
password	char(16)	29	16	Password as agreed with AsiaNext to verify the user
inactivityTimeout	u16	45	2	It is recommended to use 5 seconds. If there are no messages received for this period of time then AsiaNext will close the session (triggering cancel on disconnect)
atpSeqNo	u64	47	8	The next sequence number that the trading Member is expecting to receive on messages from AsiaNext

The *protocolVersion* is a two-byte field to represent the version of the ATP protocol that the user conforms to, with major version number in the most significant byte and minor version number in the least significant byte.

The latest version, v3.1, is represented by value 0x301

When the Member logs in, the ATP port stores the protocol version stated in the login message. To utilise an alternative ATP version, the Member should logout and login with the relevant protocolVersion set. This is to ensure that all ATP traffic for that session uses the same protocol version.

When logging in, the *atpSeqNo* is used to specify the next sequence number from AsiaNext that the trading Member is expecting. After a drop or break in the session, this can be used by AsiaNext to identify a gap and trigger any missed messages to be re-sent (as detailed in the Login Response section below).

### 4.3.2 Login Response Message

The Login Response message is sent by AsiaNext to acknowledge a Login request, and either accept or reject it.

Field name	Type	Offset	Width	Comments
<i>Header</i>		0	11	<i>msgType = 2</i>
resultCode	u8	11	1	Set to 0 for successful login Rejection codes are: 1 = Already Logged In 2 = Sequence Number Error 3 = Unsupported Protocol 4 = Failed Authentication (incorrect password) 5 = Unknown Source Network
clientSeqNo	u64	12	8	Next sequence number AsiaNext expects to receive

If the Login request message is invalid, AsiaNext will set an appropriate *resultCode* in its Login Response. Note that if the *senderId* field is not recognised as a valid id for a session assigned to a known trading Member, or the Login originates from an unexpected source network, then AsiaNext will drop the connection without sending any response.

If the Login request is re-establishing the connection after a break, there may be messages that the trading Member has missed (cancellation of any open orders or potentially any trade reports that were in process at the time of the disconnect).

AsiaNext will compare its current business message sequence number with the *atpSeqNo* provided on the Login request to detect any gap, and will immediately send any missed messages to the trading Member. AsiaNext will then send the Login Response carrying the current (next expected) AsiaNext sequence number in its header. On receipt of this Login Response message, the trading Member knows that they have caught up with any missed messages and is now free to resume trading.

### 4.3.3 Heartbeat

A Heartbeat message is simply a message header with *msgType* is set to 0 and *msgSeqNo* set to the sequence number that will be sent on the next business message.

Field name	Type	Offset	Width	Comments
Header		0	11	<i>msgType</i> = 0

AsiaNext will respond to a Heartbeat message with an outbound Heartbeat message to confirm receipt and the reliability of the connection.

### 4.3.4 Logout Request Message

The Logout Request message is used by the trading Member to request the closure of a trading session.

There is no message body required, simply a message header with *msgType* = 3.

Field name	Type	Offset	Width	Comments
Header		0	11	<i>msgType</i> = 3

### 4.3.5 Logout Message

The Logout message is usually sent as a response to the Logout Request. However it may also be sent by AsiaNext in case of a low sequence number or other protocol violation, or for other reasons.

The TCP/IP connection is closed immediately after this message has been sent.

Field name	Type	Offset	Width	Comments
Header		0	11	<i>msgType</i> = 4
reasonCode	u8	11	1	Reason code for logout 0 = User Requested 1 = Admin (Market Operations) 2 = Disconnect 3 = End of Day 4 = Inactivity Timeout 5 = Protocol Error 6 = Sequence Number Error

				8 = Maintenance
reasonText	char(32)	12	32	Text describing reason for logout

## 4.4 Business Messages

The ATP business messages allow for order entry, order management and trade handling.

All ATP business messages are sequenced and so the message stream can be recovered after a drop. For example, if a trading Member has a failure of their network connection then when the session is re-established they can receive confirmation that any open orders were cancelled and details of any trades that may have occurred just as the connection failed.

### 4.4.1 Order Add Message

The Order Add message is sent by the trading Member to enter an order for a particular security.

Field name	Type	Offset	Width	Comments	
<i>Header</i>		<i>0</i>	<i>11</i>	<i>msgType = 5</i>	
SecurityID	u32	11	4	Numeric security identifier	
orderType	u8	15	1	1 = Limit Order 8 = Post-Only Cancel Replace (POCR) 9 = Post-Only (PO)	
timeInForce	u8	16	1	2 = Fill or Kill (FOK) 3 = Immediate or Cancel (IOC)	
side	u8	17	1	1 = Buy Order 2 = Sell Order	
quantity	u32	18	4	Number of contracts	
price	Price	22	8	Limit price of the order	
orderCapacity	u8	30	1	1 = AOTC (A), 2 = DEAL (P), 3 = MTCH (R)	
account	u16	31	2	Account value assigned by AsiaNext is mandatory Clearing account identifier 2 or above = ID for an agreed Client Account code	
userTag	u64	33	8	Free form tag assigned by trading Member	
flags	u8	41	1	Bit0 – LiqProv	Whether the order relates to liquidity provision activity 0 = No 1 = Yes
				Bit1 – AlgoTradeFlag	Whether the order was generated by an algorithm 0 = No 1 = Yes
				Bit2 – DEAFflag	Whether the order originates from a Direct Electronic Access Client 0 = No 1 = Yes
				<i>Bit3 - Reserved</i>	<i>Reserved</i>
tableSelect1	u8	42	1	Bit 7-4= PartyRoleQualifier 0 – None 1 – Algo 2 – Firm	Bit 3-0= PartyRole 0 – None 1 – ClientID 2 – Executing Decision ID

Field name	Type	Offset	Width	Comments
				3 – Person 3 – Investing Decision ID
shortCode1	u32	43	4	Short Code (as qualified by previous field)
tableSelect2	u8	47	1	Bit 7-4= PartyRoleQualifier 0 – None 1 – Algo 2 – Firm 3 – Person Bit 3-0= PartyRole 0 – None 1 – ClientID 2 – Executing Decision ID 3 – Investing Decision ID
shortCode2	u32	48	4	Short Code (as qualified by previous field)
tableSelect3	u8	52	1	Bit 7-4= PartyRoleQualifier 0 – None 1 – Algo 2 – Firm 3 – Person Bit 3-0= PartyRole 0 – None 1 – ClientID 2 – Executing Decision ID 3 – Investing Decision ID
shortCode3	u32	53	4	Short Code (as qualified by previous field)

Short Code - 4-byte short code representing decision maker (mapping to long code):

- 0 = NONE (no client ID)
- 1 = AGGR (aggregated)
- 2 = PNAL (pending allocation)
- 3 = CLIENT (order instructed by client)
- 4 to 4,294,967,295 = Member-specified short code

#### 4.4.2 Order Add Extended Message

The Order Add Extended message is sent by the trading Member to enter an order for a particular security with additional attributes.

Field name	Type	Offset	Width	Comments
<i>Header</i>		0	11	<i>msgType = 21</i>
securityID	u32	11	4	Numeric security identifier
orderType	u8	15	1	1 = Limit Order 8 = Post-Only Cancel Replace (POCR) 9 = Post-Only (PO) 15 = RFQ Limit 16 = RFQ Quote
timeInForce	u8	16	1	1 = Day (mandatory when orderType = 16(RFQ Quote)) 2 = Fill or Kill (FOK) 3 = Immediate or Cancel (IOC) 4 = Good Till Date (GTD) An ExpireTime is mandatory for GTD orders. A TimeInForce of 3 (IOC) is mandatory when orderType = 15(RFQ Limit).
side	u8	17	1	1 = Buy Order 2 = Sell Order
quantity	u32	18	4	Number of contracts
price	Price	22	8	Limit price of the order
orderCapacity	u8	30	1	1 = AOTC (A), 2 = DEAL (P), 3 = MTCH (R)
account	u16	31	2	Clearing account identifier 1 = House Account (Not applicable for AsiaNext) 2 or above = ID for an agreed Client Account code

Field name	Type	Offset	Width	Comments
				Account value is assigned by AsiaNext
userTag	u64	33	8	Free form tag assigned by trading Member
flags	u8	41	1	Bit0 – LiqProv Whether the order relates to liquidity provision activity 0 = No 1 = Yes
				Bit1 – AlgoTradeFlag Whether the order was generated by an algorithm 0 = No 1 = Yes
				Bit2 – DEAFflag Whether the order originates from a Direct Electronic Access Client 0 = No 1 = Yes
				<i>Bit3 - Reserved</i> <i>Reserved</i>
tableSelect1	u8	42	1	Bit 7-4= PartyRoleQualifier 0 – None 1 – Algo 2 – Firm 3 – Person Bit 3-0= PartyRole 0 – None 1 – ClientID 2 – Executing Decision ID 3 – Investing Decision ID
shortCode1	u32	43	4	Short Code (as qualified by previous field)
tableSelect2	u8	47	1	Bit 7-4= PartyRoleQualifier 0 – None 1 – Algo 2 – Firm 3 – Person Bit 3-0= PartyRole 0 – None 1 – ClientID 2 – Executing Decision ID 3 – Investing Decision ID
shortCode2	u32	48	4	Short Code (as qualified by previous field)
tableSelect3	u8	52	1	Bit 7-4= PartyRoleQualifier 0 – None 1 – Algo 2 – Firm 3 – Person Bit 3-0= PartyRole 0 – None 1 – ClientID 2 – Executing Decision ID 3 – Investing Decision ID
shortCode3	u32	53	4	Short Code (as qualified by previous field)
displayQuantity	u32	57	4	Value must be set to 0.
minQty	u32	61	4	Value must be set to 0
flags	u8	65	1	Bit 0 Reserved
				Bit 1 Reserved.
				Bit 2 – 6 <i>Reserved</i>
expireTime	u64	66	8	Expire date/time for Good Till Date orders. Mandatory if <i>timeInForce</i> = 4. If not applicable, value must be set to 0.
RFQSessionID	u64	74	8	ID of RFQ Session

#### 4.4.3 Order Cancel Message

The Order Cancel message is sent when a user wishes to cancel an open order.

Field name	Type	Offset	Width	Comments
<i>Header</i>		0	11	<i>msgType = 7</i>
orderRef	u64	11	8	Order reference number
userTag	u64	19	8	Free form tag assigned by trading Member
flags*	u8	27	1	Bit0 – LiqProv Whether the order relates to liquidity provision activity 0 = No 1 = Yes
				Bit1 – AlgoTradeFlag Whether the order was generated by an algorithm 0 = No 1 = Yes
				Bit2 – DEAFflag Whether the order originates from a Direct Electronic Access Client 0 = No 1 = Yes
				<i>Bit3 - Reserved</i> <i>Reserved</i>
tableSelect1*	u8	28	1	Bit 7-4= PartyRoleQualifier 0 – None 1 – Algo 2 – Firm 3 – Person Bit 3-0= PartyRole 0 – None 1 – ClientID 2 – Executing Decision ID 3 – Investing Decision ID
shortCode1*	u32	29	4	Short Code (as qualified by previous field)
tableSelect2*	u8	33	1	Bit 7-4= PartyRoleQualifier 0 – None 1 – Algo 2 – Firm 3 – Person Bit 3-0= PartyRole 0 – None 1 – ClientID 2 – Executing Decision ID 3 – Investing Decision ID
shortCode2*	u32	34	4	Short Code (as qualified by previous field)
tableSelect3*	u8	38	1	Bit 7-4= PartyRoleQualifier 0 – None 1 – Algo 2 – Firm 3 – Person Bit 3-0= PartyRole 0 – None 1 – ClientID 2 – Executing Decision ID 3 – Investing Decision ID
shortCode3*	u32	39	4	Short Code (as qualified by previous field)

\* = optional for Cancels, defaults to original order value

#### 4.4.4 Order Modify Message

The Order Modify message is sent when a user wishes to modify an open order. Order quantity and/or limit price may be modified. Both values must be included, even if one of them is unchanged.

Field name	Type	Offset	Width	Comments
<i>Header</i>		0	11	<i>msgType = 9</i>
orderRef	u64	11	8	Order reference number
price	Price	19	8	The new price of the order
quantity	u32	27	4	The new order quantity
userTag	u64	31	8	Free form tag assigned by trading Member
flags*	u8	39	1	Bit0 – LiqProv Whether the order relates to liquidity provision activity 0 = No 1 = Yes

Field name	Type	Offset	Width	Comments	
				Bit1 – AlgoTradeFlag	Whether the order was generated by an algorithm 0 = No 1 = Yes
				Bit2 – DEAFflag	Whether the order originates from a Direct Electronic Access Client 0 = No 1 = Yes
				<i>Bit3 - Reserved</i>	<i>Reserved</i>
tableSelect1*	u8	40	1	Bit 7-4= PartyRoleQualifier 0 – None 1 – Algo 2 – Firm 3 – Person	Bit 3-0= PartyRole 0 – None 1 – ClientID 2 – Executing Decision ID 3 – Investing Decision ID
shortCode1*	u32	41	4	Short Code (as qualified by previous field)	
tableSelect2*	u8	45	1	Bit 7-4= PartyRoleQualifier 0 – None 1 – Algo 2 – Firm 3 – Person	Bit 3-0= PartyRole 0 – None 1 – ClientID 2 – Executing Decision ID 3 – Investing Decision ID
shortCode2*	u32	46	4	Short Code (as qualified by previous field)	
tableSelect3*	u8	50	1	Bit 7-4= PartyRoleQualifier 0 – None 1 – Algo 2 – Firm 3 – Person	Bit 3-0= PartyRole 0 – None 1 – ClientID 2 – Executing Decision ID 3 – Investing Decision ID
shortCode3*	u32	51	4	Short Code (as qualified by previous field)	
orderCapacity*	u8	55	1	1 = AOTC (A), 2 = DEAL (P), 3 = MTCH (R)	

\* = optional for Modifies, defaults to original order value

#### 4.4.5 Order Modify Extended Message

The Order Modify Extended message is sent when a user wants to modify an open Order Add Extended. Order quantity and/or limit price and/or expireTime may be modified. All values must be included, even if some are unchanged.

Field name	Type	Offset	Width	Comments	
<i>Header</i>		0	11	<i>msgType = 22</i>	
orderRef	u64	11	8	Order reference number	
price	Price	19	8	The new price of the order	
quantity	u32	27	4	The new total order quantity (number of contracts)	
userTag	u64	31	8	Free form tag assigned by trading Member	
flags*	u8	39	1	Bit0 – LiqProv	Whether the order relates to liquidity provision activity 0 = No 1 = Yes
				Bit1 – AlgoTradeFlag	Whether the order was generated by an algorithm 0 = No 1 = Yes
				Bit2 – DEAFflag	Whether the order originates from a Direct Electronic Access Client

Field name	Type	Offset	Width	Comments
				0 = No 1 = Yes
				<i>Bit3 - Reserved</i>
tableSelect1*	u8	40	1	Bit 7-4= PartyRoleQualifier 0 – None 1 – Algo 2 – Firm 3 – Person
				Bit 3-0= PartyRole 0 – None 1 – ClientID 2 – Executing Decision ID 3 – Investing Decision ID
shortCode1*	u32	41	4	Short Code (as qualified by previous field)
tableSelect2*	u8	45	1	Bit 7-4= PartyRoleQualifier 0 – None 1 – Algo 2 – Firm 3 – Person
				Bit 3-0= PartyRole 0 – None 1 – ClientID 2 – Executing Decision ID 3 – Investing Decision ID
shortCode2*	u32	46	4	Short Code (as qualified by previous field)
tableSelect3*	u8	50	1	Bit 7-4= PartyRoleQualifier 0 – None 1 – Algo 2 – Firm 3 – Person
				Bit 3-0= PartyRole 0 – None 1 – ClientID 2 – Executing Decision ID 3 – Investing Decision ID
shortCode3*	u32	51	4	Short Code (as qualified by previous field)
orderCapacity*	u8	55	1	1 = AOTC (A), 2 = DEAL (P), 3 = MTCH (R)
displayQuantity	u32	56	4	<i>Reserved, set value to 0.</i>
minQty	u32	60	4	<i>Reserved, set value to 0.</i>
expireTime	u64	64	8	New expiry Date/Time of a Good Till Date order

\* = optional for Modifies, defaults to original order value

#### 4.4.6 Order Add Response Message

AsiaNext sends an Order Add Response message to acknowledge the receipt of an Order Add or an Order Add Extended message.

The message is used to notify the trading Member whether or not their order was accepted and, if so, whether it executed (partially or fully) and whether any residual quantity has been added to the book or has been cancelled.

Field name	Type	Offset	Width	Comments
<i>Header</i>		0	11	<i>msgType = 6</i>
orderRef	u64	11	8	Order reference number
marketDataID	u64	19	8	The ID of this order as seen in the AsiaNext market data. This value will be zero if the order is cancelled (IOC) or fully traded on entry.
status	u8	27	1	Status of order and reject or cancel code (if needed) First 3 most significant bits - order status; Lower 5 bits - reason code (if rejected or cancelled); Otherwise zero. See Section 4 for values.
tradedQuantity	u32	28	4	Number of contracts traded, if any.
timestamp	Time	32	8	Time that the order was accepted or rejected by the AsiaNext system.
userTag	u64	40	8	Free form tag as assigned by trading Member on the Order Add message.
flags	u8	48	1	Bit 0 – 6
				<i>Reserved</i>

If the order traded on entry, i.e. *tradedQuantity* is not zero, then this message will be immediately followed by the related Trade message(s).

Note that this is correct behaviour even if the *status* is Cancelled, for example for an IOC order that partially trades. The Cancelled status confirms that the residual quantity has been cancelled back to the trading Member and the subsequent Trade message(s) provide details for the traded quantity.

#### 4.4.7 Order Cancel Response Message

AsiaNext sends an Order Cancel Response to accept or reject an Order Cancel message. The message is also used if an order is cancelled by Market Operations or due to cancel on disconnect.

Field name	Type	Offset	Width	Comments
<i>Header</i>		0	11	<i>msgType</i> = 8
orderRef	u64	11	8	Order reference number
requestRef	u64	19	8	Sequence number ( <i>msgSeqNo</i> ) of the trading Member's Order Cancel message. Note that this field will be zero in the case of a forced cancel generated by AsiaNext
status	u8	27	1	Status of order and reject or cancel code (if needed) First 3 most significant bits - order status; Lower 5 bits - reason code (if rejected or cancelled); See Section 4 for values.
timestamp	Time	28	8	Time that the cancellation was accepted or rejected by the AsiaNext system.
userTag	u64	36	8	Free form tag as assigned by trading Member on the Order Cancel message.

#### 4.4.8 Order Modify Response Message

AsiaNext sends an Order Modify Response to accept or reject an Order Modify or an Order Modify Extended message.

Field name	Type	Offset	Width	Comments
<i>Header</i>		0	11	<i>msgType = 10</i>
orderRef	u64	11	8	Order reference number
requestRef	u64	19	8	Sequence number ( <i>msgSeqNo</i> ) of the trading Member's Order Modify message.
status	u8	27	1	Status of order and reject or cancel code (if needed) First 3 most significant bits - order status; Lower 5 bits - reason code; See Section 4 for values.
timestamp	Time	28	8	Time that the modification was accepted or rejected by the AsiaNext system.
userTag	u64	36	8	Free form tag as assigned by trading Member on the Order Modify message.
flags	u8	44	1	Bit 0 – 6 <i>Reserved</i>

#### 4.4.9 Quote Request Message

The Quote Request Message is sent to commence RFQ session. If no Market Makers are specified in this message, AsiaNext will disseminate the Quote Request details to all configured Market Makers.

Field name	Type	Offset	Width	Comments
<i>Header</i>		0	11	<i>msgType = 30</i>
securityID	u32	11	4	Numeric security identifier
quantity	u32	15	4	Number of shares. 0 will be accepted if initiator does not want to disclose quantity.
side	u8	19	1	0 = No side specified 1 = Buy Order 2 = Sell Order
userTag	u64	20	8	Free form tag as assigned by trading Member
marketMakerCode1	char(4)	28	4	Market Maker code of recipient of Quote Request.
marketMakerCode2	char(4)	32	4	Market Maker code of recipient of Quote Request.
marketMakerCode3	char(4)	36	4	Market Maker code of recipient of Quote Request.
marketMakerCode4	char(4)	40	4	Market Maker code of recipient of Quote Request.
marketMakerCode5	char(4)	44	4	Market Maker code of recipient of Quote Request.

#### 4.4.10 Quote Request Notification

The Quote Request Notification is sent back to requestor to acknowledge the Quote Request. It is also sent to Market Maker to share the Quote Request.

Field name	Type	Offset	Width	Comments
<i>Header</i>		0	11	<i>msgType = 31</i>
RFQSessionID	u64	11	8	RFQ Session ID
securityID	u32	19	4	Numeric security identifier
quantity	u32	23	4	Number of shares
side	u8	27	1	1 = Buy 2 = Sell
status	u8	28	1	1 = Acknowledgement 2 = Expired 3 = Rejected
statusDetails	u8	29	1	0 = Acknowledgement 1 = Security Suspended 2 = Security Halted 3 = Unsupported Security 4 = Invalid Market Maker 5 = Invalid Side 6 = Invalid Quantity 8 = Not Supported 9 = Invalid Order Type 10 = Internal Error 11 = Not Authorised 12 = Market Closed 13 = Session Closed
msgRef	u64	30	8	Message reference number
userTag	u64	38	8	Free form tag as assigned by trading Member.

#### 4.4.11 Quote Add Message

The Quote Add Message is used to disseminate quotes sent by Market Makers to the RFQ session requestor.

Field name	Type	Offset	Width	Comments
<i>Header</i>		0	11	<i>msgType = 13</i>
aqxOrderID	u64	11	8	Unique Quote ID
securityID	u16	19	2	Numeric security identifier
side	u8	21	1	1 = Buy 2 = Sell
quantity	u32	22	4	Number of shares
price	Price	26	8	Limit price of the order
RFQSessionID	u64	34	8	RFQ Session ID

#### 4.4.12 Quote Modify Message

Quote Modify Message is used to disseminate any quote modification submitted by the market makers to the RFQ session requestor.

Field name	Type	Offset	Width	Comments
<i>Header</i>		0	11	<i>msgType = 14</i>
aqxOrderID	u64	11	8	Unique Quote ID
securityID	u16	19	2	Numeric security identifier
quantity	u32	21	4	Number of shares
price	Price	25	8	Limit price of the order

#### 4.4.13 Quote Cancel Message

Quote Cancel Message is used to disseminate any quote cancelation messages submitted by the market makers to the RFQ session requestor.

Field name	Type	Offset	Width	Comments
<i>Header</i>		0	11	<i>msgType = 15</i>
aqxOrderID	u64	11	8	Unique Quote ID
securityID	u16	19	2	Numeric security identifier

#### 4.4.14 Trade Message

The Trade message is published by AsiaNext when an order executes.

Field name	Type	Offset	Width	Comments
<i>Header</i>		0	11	<i>msgType = 11</i>
orderRef	u64	11	8	Order reference number
quantity	u32	19	4	Number of contracts traded
price	Price	23	8	The price of the trade
side	u8	31	1	1 = Buy 2 = Sell
tradeRef	u64	32	8	Trade reference number. Corresponds to the TVTIC (RTS 24 Art.12 & RTS 22 Field 3 Table 2).
ccpCode	u8	40	1	CCP Code
liqIndicator	u8	41	1	Liquidity indicator: 1 = Added liquidity 2 = Removed liquidity
securityID	u32	42	4	Numeric security identifier
timestamp	Time	46	8	Time that the trade occurred on the AsiaNext system
userTag	u64	54	8	Free form tag as assigned by trading Member on the Order Add message or the most recent Order Modify message.
flags	u8	62	1	Bit 0 – 6 <i>Reserved</i>

#### 4.4.15 Trade Bust Message

If a trade is invalidated, a Trade Bust message is sent to notify the trading Member.

Field name	Type	Offset	Width	Comments
<i>Header</i>		0	11	<i>msgType = 12</i>
orderRef	u64	11	8	Order reference number
quantity	u32	19	4	Number of contracts invalidated in this trade
price	Price	23	8	The price of the invalidated trade
side	u8	31	1	1 = Buy 2 = Sell
tradeRef	u64	32	8	Trade reference number for the invalidated trade
timestamp	Time	40	8	Time that the trade was busted by AsiaNext

## 5 Status and Reason Codes

### 5.1 Order Status

The Order Status code is provided in the three most significant bits of the *status* byte field in the Order Add Response, Order Cancel Response and Order Modify Response messages.

Code	Order Status
1	Pending New (internal use only)
2	Acknowledged
3	Cancelled
4	Rejected
5	Filled
6	Modified

### 5.2 Modification Reasons

The Modification Reason code is provided in the lower five bits of the *status* byte field in the Order Modify Response message.

Code	Modification Reason
1	Modification accepted
2	Order cancelled as a result of modification which updates the remaining quantity to zero

### 5.3 Cancel Reasons

The Cancel Reason code is provided in the lower five bits of the *status* byte field in the Order Cancel Response message. It is also provided in the Order Add Response message if the incoming order is unexpectedly cancelled on entry.

Code	Cancel Reason
0	Cancelled due to IOC or FOK orders not filled
1	Member request
2	AsiaNext forced cancel
3	Market close
4	Expired
5	<i>Reserved</i>
6	Aborted
7	Self-trade prevention
8	Cancel on disconnect
9	Post-only cancel (cancel to prevent aggressive trade)
10	Cancel residual quantity
11	Post-only cancel resting (cancel to prevent aggressive trade)
12	Minimum resting value

This is combined with the Cancelled order status, for example a cancel in response to a Trading Member's request is encoded as 011**00001** (0x61)

### 5.4 Reject Reasons

If an Order Add, or an Order Cancel or Order Modify request, is rejected then the Rejected order status is combined with a Reject Reason in the lower five bits of the *status* byte field.

The current set of reject reason codes are given below. *Example:* a reject because the given price does not conform to the tick table for the security would be encoded as 100**00101** (0x85).

Code	Reject Reason
1	Not Authorised To Trade
2	Invalid Quantity
3	Invalid Price
4	Unknown Security
5	Price Does Not Conform To Tick
6	Invalid Order Type
7	Invalid Side
8	Invalid Order Capacity
9	Market Is Closed

Code	Reject Reason
10	Halted
11	Suspended
12	Invalid TimeInForce
13	Order Not Found / Not Open
15	Failed Price Range Check
16	Invalid Clearing Account
17	Not Supported
18	Max Value Exceeded
19	Auction Ended
20	Drop Feed Down
21	Technical Reject
23	Stock Restricted
24	Minimum Consideration
27	Invalid
29	Bad Date
30	Duplicate
31	Reject Internal

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