Ai FIX 1.7 Developer's Guide

EBS®™ Spot Ai

16 September, 2014

ICAP

Contents

1 Introduction

1.1 Document Layout

The information herein is designated as Confidential Information pursuant to the Customer Agreement in place between EBS and the Customer.

This document outlines the implementation of the FIX 5.0 protocol by the Ai Server version 6.7, which is known as Ai FIX 1.7. As such, it is assumed that the reader has a thorough understanding of the FIX protocol itself, therefore there will be no explanation of the FIX message types or message formats. This information can be acquired through the FIX Protocol website (http://www.fixprotocol.org) and is outside the scope of this document.

The focus is on how the various messages are used by the Ai Server, the information that is included in each message, and the message exchanges between the Ai Client application and the Ai Server. This document shall serve as the proper definition of the Rules of Engagement required to establish Trading Sessions through the Ai Server interface.

The Ai FIX 1.7 implementation will support standard FIX session conventions, however, no recovery data will be provided via the FIX session. All recovery will be handled at the application session level. The life span of the Ai Application Session coincides with that of the FIX Session. Whenever the Ai Application Session is terminated, by whatever means, the FIX Session will also be terminated. FIX Session sequence numbers are always reset to 1 whenever a new FIX Session is created, which occurs every time the Ai Client connects to the Ai Server using the FIX protocol

1.2 Message Types

Communicating with the Ai Server revolves entirely around the messaging structures which are divided into three types of messages:

- Request messages
- Response messages
- Event messages

Request/Response Messages – Request messages are sent by the Client application to the Ai Server, which will then send a Response message. Heartbeat messages are unique in that they are Request messages that can be sent by either the Ai Server, or the Client application, to which the other side must respond.

Event Messages – Event messages are triggered by a status change in an Order or Deal, by changes in market prices, session changes or system errors, and are initiated by the Ai Server.

1.3 Useful Reference Material

EBS Guide to Pair Parameters

EBS Spot Ai Lab Guide

1.4 Ai FIX Protocol Changes for Version 1.7 included in the document dated September 16, 2014

A summary of the updates is in the table below:

Message	Status	Description of Change
Logon Response (MsgType = BF)	Updated	Added new values for field 9001, NestedUserDataName midPDEnabled, darkPDEnabled, darkPDMinDisplayQty

1.5 Other FIX Changes for Version 1.7 included in the document dated September 16, 2014

A summary of the updates is in the table below:

Description of the Change
Updated description of field 1129, CstmApplVerID on Logon Request.
Updated Incremental Refresh description for condition of EBS Down.
Updated description of field 279, MDUpdateAction on the Incremental Refresh.
Added a column identifying FIX data types in the Custom Tags table.
Updated description of field 279, DisplayQty for Dark PD orders on the Order Submit Request.
Updated description of field 20109, PriceDiscretion for Mid and Dark PD orders on the Order Submit Request.
Updated description of field 1138, DisplayQty for Dark PD orders on the Order Submit Response.
Updated description of field 1138, DisplayQty for Dark PD orders on the Order Amend Request.
Updated description of field 20109, PriceDiscretion for Mid and Dark PD orders on the Amend Request and Response
Updated Order Amend Response description.
Added and updated error codes

1.6 Ai Server Functionality

The Ai Server functionality can be broken down into several functional areas and messages, as follows:

Logon – Session and Application logon, change password, Session and Application logoff.
Trading and Market Data – subscribe, unsubscribe
Orders – order submit, order amend, order interrupt, interrupt all, execution report
Deals – trade capture, trade capture request
Session – trade date change, value date change, system up/down, credit low/exhausted, etc

Each of the above mentioned areas can be further broken down into individual message exchanges and message types, as follows:

FIX Messages				
	Ai Client	FIX Msg	Ai Server	FIX Msg
Logon	FIX Session Logon Request	A	FIX Session Logon Response	A
	Logon Request	BE	Logon Response	BF
			Trading Session List	BJ
	Change Password Request	BE	Change Password Response	BF
	Application Logoff Request	BE	Logoff Response	BF
Market Data	Trading Subscribe Market Data Subscribe	V	Subscribe Response (snapshot/full refresh)	W
			Subscription Rejection	Y
	N/A		Incremental updates (following the initial subscription)	X
	Market Data Unsubscribe request (no response needed)	V	N/A	
Orders	Submit Order request	D	Execution Report	8
	N/A		Execution report (generated by changes to Order Status)	8
	Order Amend	G	Execution Report (with status)	8
			Order Cancel/Replace Reject	9
	Order Interrupt	F	Execution Report (with status)	8
			Order Cancel Reject	9
	Interrupt All	q	Execution Report (with status)	8
Deals	N/A		Trade Capture report (generated by the execution of a trade)	AE
	Trade Capture request (query)	AD	Trade Capture report	AE
			Request Failed	AR
Session	N/A		Session Message (initiated by session events)	h

Note: Each of the FIX message types defined in the above table is described in further detail in the following sections.

The Ai Server does not support retransmission of messages. If messages are received out of sequence by the client, it is recommended that the client discontinue the session and contact Customer Service to investigate the missing message(s).

1.7 Client Information

To better meet customer specific requirements, please address the two new fields added to the login request message.

1. Client type – select from the following configured valid values 1. GUI aggregator, 2. Autohedge, 3. Market Maker, 4. Proprietary, 5. Price Feed or 6. Other.

2. Aggregation Provider – please enter the vendor name and version (up to 75 characters), or “proprietary” if applicable.

2 Header & Footer

The following represents the format of the FIX header and footer, as used by the Ai Server. These tags are the only ones that are used and sent by the Ai Server, and the only ones that the Ai Server expects to see from the Ai Client. Any additional tags that the Ai Client may include in the header will be ignored.

2.1.1 FIX Message Header

The same format is used for both request and response messages.

Header Message Format

Header Message			
Tag	Tag Name	Reqd	Comments
8	BeginString	Y	Identifies the beginning of the message and represents the Transmission Protocol version. Must be the FIRST TAG IN THE MESSAGE. (Always unencrypted) Valid values: **FIXT.1.1**
9	BodyLength	Y	Message length (number of bytes) forward to the CheckSum tag. ALWAYS SECOND TAG IN MESSAGE. (Always unencrypted)
35	MsgType	Y	Defines message type. ALWAYS THIRD TAG IN MESSAGE. (Always unencrypted)
49	SenderCompID	Y	Assigned value used to identify sender of message. Client assigns this value and it is recommended that the company name or floor code be used.
56	TargetCompID	Y	Assigned value used to identify receiving firm. Expected value = **ICAP_Ai_Server**
34	MsgSeqNum	Y	Integer message sequence number.
52	SendingTime	Y	Time of message transmission (always expressed in UTC (Universal Time Coordinated, also known as "GMT") **Note:** It is strongly recommended that the Client Application include milliseconds in the timestamp, as this facilitates analysis and problem resolution specific to Ai client/server timings, for both request and response messages.

2.1.2 FIX Message Footer

The same format is used for both request and response messages.

Footer Message Format

Footer Message			
Tag	Tag Name	Reqd	Comments
10	CheckSum	Y	Three byte, simple checksum. ALWAYS LAST TAG IN MESSAGE; i.e. serves, with the trailing <SOH>, as the end-of-message delimiter. Always defined as three characters, pad with leading zeroes, if necessary. (Always unencrypted)

3 FIX Session Logon

3.1 FIX Logon – Request (A)

The Ai Server utilizes the FIX Session Protocol. The FIX Session Logon message type 'A' must be the first message an Ai Client sends to the Ai Server, after establishing a network connection. Ai Server uses this message primarily to solicit and validate the HeartBeat interval. The expected value of HeartBeat interval is 1 second. If different, the Ai Server disconnects the Ai Client citing the Protocol violation.

Ai Server supports version 5.0 of the FIX Protocol, and it is recommended that Ai Clients use the same.

3.1.1 FIX Session Logon Request Message

Session Logon Request Message Format

Session Logon Request Message			
Tag	Tag Name	Reqd	Comments
	Standard Header	Y	MsgType = **A** (Session Logon)
98	EncryptMethod	Y	It should always be **0** (None). Ai Application ignores this tag
108	HeartBtInt	Y	It should always be **1**. Ai Application validates this value, and if it's different, it sends a protocol violation message, and disconnects the Ai Client
1137	DefaultApplVerID	Y	The default version of FIX being carried over this FIXT session. **7=** FIX5.0. Ai Application doesn't validate this value.
	StandardTrailer	Y	

3.1.2 FIX Session Logon Response Message

If the message is conforming to the FIX Protocol, Ai Server will simply echo back the Logon message. If the message is non-conforming to the FIX protocol, Ai Server will disconnect the Ai Client.

Session Logon Response Message Format

Session Logon Response Message			
Tag	Tag Name	Reqd	Comments
	Standard Header	Y	MsgType = **A** (Session Logon)
98	EncryptMethod	Y	It should always be **0** (None). Ai Application ignores this tag
108	HeartBtInt	Y	It should always be **1**. Ai Application validates this value, and if it's different, it sends a protocol violation message, and disconnects the Ai Client. The time interval is seconds.
1137	DefaultApplVerID	Y	The default version of FIX being carried over this FIXT session. **7=** FIX5.0. Ai Application doesn't validate this value.
	StandardTrailer	Y	

3.1.3 FIX Logon Failed Response Message

The Logon request will fail if the HeartBeat interval is set incorrectly. The Ai Server expects the interval to be set at 1 second. The Ai Server will terminate the FIX session after sending a FIX Session Logoff message.

Session Logout Message Format

Session Logout Message			
Tag	Tag Name	Reqd	Comments
	Standard Header	Y	MsgType = **5**
58	Text	Y	A textual description of the HeartBeat Interval violation.
	StandardTrailer	Y	

4 Application Logon

4.1 Logon Request – User Request (BE)

The BE **Logon** Request Message is an application level message that is sent by the Ai Client to the Ai Server to log on to the system and begin a new Trading Session. (NOTE: Before the application Logon Request message can be sent, the Ai Server expects a FIX session level l**ogon** to have been performed, as defined and mandated by the Fix Protocol/Engines. The FIX session level logon establishes the connection to the FIX engine and establishes the heartbeat interval for the session, it must be the first message the Ai Client sends.)

The Logon process also allows the client to configure certain parameters that will be in effect for the duration of the session. The client will receive a response indicating a successful Logon, or a response indicating an existing session needs to be cancelled, or a response indicating the password has expired, or a logon failure message.

4.1.1 Logon Request Message

The table below represents the elements and formatting of the Logon Request message. The UserDataName tag is used to hold all Configurable parameters which can be set by the client, and are valid for the duration of the session. In order to change any of these parameters the client must close the existing session and start a new session

Application Logon Request Message Format

Application Logon Request Message			
Tag	Tag Name	Reqd	Value
	Standard Header	Y	MsgType = **BE** (Request Message. Initiated by Ai Client)
1129	CstmApplVerID	Y	Ai-FIX version number. **Note**: This tag specifies the version of the Ai protocol over FIX protocol that the client is logging on to. There are currently two versions of Ai over FIX: **1.6 and 1.7** When a client logs in with version 1.6, all functionality supported by Ai release 6.6 will be available. Note: With version 1.6 Mid and Dark PD may be available depending upon floor configuration. But with version 1.6 the logon response will not include the associated parameters. When a client logs in with version 1.7, all functionality supported by Ai release 6.7 will be available. A client logging in with a version different from 1.6 or 1.7 will result in a protocol violation and the client will be disconnected.
923	UserRequestID	Y	Correlation Id created by the Ai Client and used to track other messages associated with this request
924	UserRequestType	Y	**1** = Log On User
553	Username	Y	**Username** When accessing an Ai instance that supports multiple traders, a username not configured for that Ai instance will result in the client being disconnected. An error message will be returned to the client. When accessing an Ai instance that supports a single trader, an invalid username will not result in the client being disconnected. An error message will be returned to the client.
554	Password	Y	Associated password for the Trader ID used by the Ai Server. 8—16 characters. Not Case sensitive. When first issued, it is trading floor default password.
5976	NoUserData	N	Number of repeating blocks to follow

Application Logon Request Message				
Tag	Tag Name		Reqd	Value
→	5977	UserDataName	N	Required if NoUserData > 0. Each block will contain one of the following parameter keywords: **AutoCancelDuplSession** If “Y”, any existing trading session (using the same Trader ID) will be terminated when the Logon Request is sent. If ”N”, no action taken until client Requests session to be terminated. The default setting is “N”. **SendConfirmedDeals** An Ai client may request to receive or prevent the notification of a deal when confirmed. If “Y”, a client receives a “pending,” “confirmed” and “done” sequence of messages for deal processing. If “N”, the confirmed message will not be sent to the client. The default setting is “Y”. **LargeDifferenceCheck** If “Y”, the Ai server will reject a bid/offer price that varies (higher or lower) from the current Dealable Best Bid/offer by more than the large difference pips for the currency pair. If “N”, no restriction in effect and the order is accepted. The default setting is “Y”. **PriceCheck** If “Y”, when submitting a bid/offer, a check is performed to determine if the price is inverted. In the EBS Spot trading system, this check is known as “Bid Greater than Offer,” but it applies to both sides of an order. If “Y”, orders with inverted prices are rejected. If “N”, and the order deviates form market price by more than the xPips amount, the order is rejected. (Refer to the EBS FX Spot Dealing Rules for more details.) The default setting is “Y”. **WideSpreadCheck** If “Y”, the Ai server ensures that a bid price less than the current Dealable Best Offer by more than the wide spread pips is rejected, and an offer price that exceeds the current Dealable Best Bid by more than the wide spread pips is rejected. If “N”, no restriction is in effect and the order is accepted. The default setting is “Y”. **HideMyPrices** If “Y”, the trader ID will not appear to manual traders on a hybrid floor. (This feature is only in effect if the TFA has allowed traders on the floor to select this option.) The default setting is “N”. **OrderThroughput** A dealcode is configured as “Floating” for Ai clients who purchased a throughput entitlement to be shared by all trader IDs of a dealcode. When a dealcode is configured for "Floating" throughput, an Ai Client must specify a number greater than 0 to indicate the maximum number of orders that will be submitted by the trading session within a specific time interval (set at the Ai server). The time interval is provided in the NumberOfOrdersTimeInterval parameter in the logon response message. Specifying OrderThroughput in the Logon Request of a trader whose dealcode is not configured as "Floating" will result in a protocol violation and the client will be disconnected. **Note**: Parameter names that are unknown or misspelled will be ignored by the Ai Server.

Application Logon Request Message				
Tag	Tag Name		Reqd	Value
→	5977	UserDataName (continued)	N	**ClientType** Identifies the type of Ai client "**1**" = GUI aggregator "**2**" = Autohedge "**3**" = Market maker "**4**" = Proprietary "**5**" = Price feed "**6**" = Other If an invalid value is provided, the logon request will be reject **AggregationProvider** Identifies a third party Vendor Solution. Free form text can be entered up to 75 characters. An entry greater than 75 characters will result in rejection of the logon request. **dealcode** The four character Bank Code to which the user belongs. This is an optional parameter to be used at a future date. If it is supplied, it will be validated. **AllowFixingInfo** "Y": Explicitly requests the Ai Server to provide Fixing information in the Logon Response message. "N": Explicitly indicates to the Ai Server that the Client is not interested in receiving Fixing information in the Logon Response message. Note: If this parameter is not specified, then, the Client will not receive Fixing information in the Logon Response message. **Note**: Parameter names that are unknown or misspelled will be ignored by the Ai Server.
→	5978	UserDataValue	N	Required if NoUserData > 0. Each block will contain the value for the parameter specified by the keyword in UserDataName (tag 5977). The FIX protocol defines Boolean as: **Y** = True/Yes **N** = False/No Ai will strictly follow the FIX interpretation of Boolean above. For Boolean parameters, any values other than Y or N will be rejected and will result in a Protocol Violation Exception error being sent back in the Logon Response.
	Standard Trailer		Y	

4.1.2 Logon Response

The **Logon** Response message is sent by the Ai Server back to the Ai Client. The **Logon** Response Message includes several session parameters, as shown in the following tables. The response message includes the set of instruments, along with detailed information about each instrument, to which the Ai Client can subscribe for Trading and/or to receive market data.

The Logon Response message provides configuration for several different Market Data views of the Order Book to which the client can subscribe: Price-Depth View, Spread View, and Amount View. These Market Data views are fully described in the Market Data sections of this document.

The Logon Response message provides configuration information to support subscription to these views.

If the trading system is down while the client is logging in, the Logon Response message will be preceded by an EBS Down Trading Session Status message.

The Logon Response message provides the following configuration information for the following Market Data views:

Price-Depth View

For each instrument contained in the Logon Response message, the client is provided with the maximum number of price points that are available by the Ai Server in the Price-Depth View subscription.

Spread View

For each instrument contained in the Logon Response message, the client is provided with a list of spread price offsets from the dealable best, for which amounts are provided by the Spread View subscription. These spread price offsets will be listed in decreasing order of competitiveness.

Amount View

For each instrument contained in the Logon Response message, the client is provided with the list of aggregate inventory amounts for which prices are provided by the Amount View subscription.

Full Amount View

For each Direct instrument contained in the Login Response message, the client is provided with the list of inventory amounts for which prices are provided by the Full Amount View subscription.

For Fixed Date NDFs, the Logon Response will provide the unique settlement date, currently in effect for the NDF. Daily logon is required to receive the current list of NDFs and their associated information.

4.1.3 Logon Response Message: Success

Application Logon Response Message Format – Success

Application Logon Response Message - Success				
Tag	Tag Name		Reqd	Comments
	Standard Header		Y	MsgType = BF (User Response Message. Sent by the Ai Server)
923	UserRequestID		Y	Carried over from User Request – Logon
553	Username		Y	Carried over from User Request – Logon
926	UserStatus		Y	1 = Logged In
927	UserStatusText		N	The Logon result status text
5976	NoUserData		N	Number of repeating blocks to follow
→	5977	UserDataName	N	Present when NoUserData >0. Each block will contain one of the following parameter keywords: **TotalActiveOrders** The maximum number of Orders a client can have in the market at any one time. Additional Orders are rejected. **NumberOfOrders** The maximum number of Orders a client can place in the market during the NumberOfOrdersTimeInterval. Orders that exceed the throughput are rejected. **NumberOfOrdersTimeInterval** Throughput window interval. **AiHostName** The Host name of the Ai Server. **AiPort** The Ai server port number. If there are multiple Ai Servers installed on one machine, the port number is used to identify each Ai instance **IcebergRandomTimeIncrement** The increment in milliseconds to be used when setting the **IcebergHighRandomTime** on an order. A value provided in **IcebergHighRandomTime** must be divisible by this value. Provided only for iceberg entitled users. **IcebergMaxRandomTime** The maximum value, in milliseconds, to which the **IcebergHighRandomTime** may be set. Provided only for iceberg entitled users.

Application Logon Response Message - Success				
Tag	Tag Name		Reqd	Comments
→	5978	UserDataValue	N	Present when NoUserData >0. Will contain the value of the parameter specified by the keyword in tag 5977.
146		NoRelatedSym	N	Number of repeating blocks to follow.
→	55	Symbol	N	Present when NoRelatedSym >0. Base/Local Denotes the currency pair in CCY1/CCY2 convention.
→	461	CFICode	N	Present when NoRelatedSym >0. **RCSXXX** = FX Spot **FFCNNO** = NDF
→	63	SettlType	N	Present when NoRelatedSym >0. **0** - Regular / FX Spot settlement (T+1 or T+2 depending on currency) **Dx** = FX tenor expression for "days", e.g. "D5", where "x" is any integer > 0 **Wx** = FX tenor expression for "weeks", e.g. "W13", where "x" is any integer > 0 **Mx** = FX tenor expression for "months", e.g. "M3", where "x" is any integer > 0 **Yx** = FX tenor expression for "years", e.g. "Y1", where "x" is any integer > 0 **B** = Fixed Date tenor for Fixed Date NDFs only. The Settlement Date will be provided in tag 64, SettlDate. Noted that for FX the tenors do not denote business days, but calendar days.
→	561	RoundLot	N	Present when NoRelatedSym >0. The Regular Order Amount Size. Refer to Guide to ICAP Pair Parameters for more information.
→	75	TradeDate	N	Present when NoRelatedSym >0. Effective Trade Date. This date is applicable for the date this message is received. The date will be published in **YYYYMMDD** format
→	64	SettlDate	N	When CFICode = FFCNNO this tag will contain the NDF settlement date When CFICode = RCSXXX this tag will contain the SPOT value date This date is applicable for the date this message is received. The date will be published in YYYYMMDD format

Application Logon Response Message - Success					
Tag	Tag Name			Reqd	Comments
→	541	MaturityDate		N	Published when CFICode = FFCNNO NDF fixing date Not published for SPOT This date is applicable for the date this message is received. The date will be published in YYYYMMDD format
→	9995	SpotValueDateForNDF		N	May or may not be published when CFICode = FFCNNO (NDF) Not published when CFICode=RCSXXX (Fx SPOT) Will contain the SPOT settlement date (also known as the SPOT value date). SPOT settlement date and SPOT value date are equivalent) This date is applicable for the date this message is received. The date will be published in YYYYMMDD format
→	20100	PriceDepth		N	Present when NoRelatedSym > 0 Indicates the maximum number of data points a client can receive for this currency pair in the Price Depth view.
→	→	20105	PriceDepthRange	N	The number of price increments to which the order book shall be consulted during the construction of the view. A price point that falls outside the range will never be returned to the client.
→	20101	NoSpreads		N	Present when NoRelatedSym > 0 Specifies the number of Spread elements that follow; the SpreadPriceOffset tag is repeated for each spread price offset that has been configured for the instrument. When the value is “0”, SpreadView is not available for the instrument.
→	→	20103	SpreadPriceOffset	N	Present when NoSpreads > 0 The configured spread price offset determines the prices at which the accumulated inventory from the best dealable price will be reported, when the client subscribes to Spread View for this instrument.
→	20102	NoAmounts		N	Present when NoRelatedSym > 0 Specifies the number of Amount elements that follow; the CumulativeAmount element is repeated for each inventory amount configured for the instrument. When the value is “0”, Amount View is not available for the instrument.

Application Logon Response Message - Success					
Tag	Tag Name			Reqd	Comments
→	→	20104	CumulativeAmount	N	Present when NoAmounts > 0 The configured sizes are the amounts for which prices will be reported in order to “take” the entire amount, when the client subscribes to an Amount View for this instrument. The configured sizes will be listed in order of increasing size.
→	20113	NoFullAmounts		N	Present when NoRelatedSym > 0 and the instrument is a Direct instrument. Specifies the number of FullAmount elements that follow; the FullAmount element is repeated for each inventory amount configured for the instrument. When the value is “0”, FullAmount View is not available for the instrument.
→	→	20114	FullAmount	N	The configured sizes are the amounts for which prices will be reported in order to “take” up to the full amount at the specified price from a single LP. The configured sizes will be listed in order of increasing size.
→	386	NoTradingSessions		Y	Number of Trading Sessions. There will be at least one “Standard” session.
→	→	336	TradingSessionID	Y	Identifier for a Trading Session. A Trading Session spans an extended period of time during which specific types of orders or specific instruments can be submitted.
→	→	1300	MarketSegmentID	Y	Identifies the type of order book in which the instrument is traded. Valid values are: “**Fixing**” “**Standard**”.
→	9000	NoNestedUserData		N	Present when NoRelatedSym > 0 Number of repeating blocks to follow

Application Logon Response Message - Success					
Tag	Tag Name			Reqd	Comments
→	→	9001	NestedUserDataName	N	Required if NoNestedUsrData > 0. Each block will contain one of the following parameter keywords: **xPips** The amount an Order price can deviate (when inverted) from the Dealable Best Price before it is rejected. Applies if the PriceCheck parameter is disabled. If PriceCheck is enabled, all Orders with inverted prices are rejected. **wideSpread** The value of the WideSpreadCheck parameter. priceIncrement Order prices must be specified in increments equal to this amount. **priceIncrement** Buy/Sell prices must be specified in increments equal to this amount. Increment used for the price depth market view range. **largeDiff** The value of the LargeDifferenceCheck parameter. **maxSize** The maximum Order size for this Instrument ID (Currency Pair). **sizeIncrement** From the Minimum size, Order size can be increased up to the maximum in increments equal to this amount. **isBasket** Indicates whether or not the instrument represents a basket comprised of weighted currencies. **formula** Will contain the calculations applicable to the component deals. **continuousMatchMinSize** The Minimum Trade Size for Continuous Matching Orders

Application Logon Response Message - Success					
Tag	Tag Name			Reqd	Comments
→	→	9001	NestedUserDataName (continued)	N	**maxPriceDiscretion** Price Discretion Maximum Range for Market pairs - the maximum increment that can be added to a bid or subtracted from an offer. When **maxPriceDiscretion** = 0, discretionary price range cannot be submitted for this instrument. This attribute has the same precision as the price and is unsigned **minPDOrderQty** Price Discretion Minimum Order Quantity - the minimum order size for a Price Discretion order for this instrument. If the **maxPriceDiscretion** is zero, then the **minPDOrderQty** will also be zero. **quotePriceIncrement** Bid/Offer prices must be specified in increments of this price. **minQuoteSubmitSize** The minimum Bid/Offer size (non-PD, non-CM) for this Instrument ID (Currency Pair). **minHitSubmitSize** The minimum Buy/Sell size (non-PD, non-CM) for this Instrument ID (Currency Pair). **icebergMinDisplayQty** The minimum **DisplayQty** for an iceberg order for the symbol (Currency Pair). Provided only for iceberg entitled users. **icebergMaxHiddenQty** The maximum hidden amount for an iceberg order for the symbol (Currency Pair). Provided only for iceberg entitled users. **midPDEnabled** Pairs enabled for Mid PD will have a value of "**Y**" and pairs not enabled for Mid PD will have a value of "**N**". Provided only for Mid PD entitled users. **darkPDEnabled** Pairs enabled for Dark PD will have a value of "**Y**" and pairs not enabled for Dark PD will have a value of "**N**". Provided only for Dark PD entitled users. **darkPDMinDisplayQty** The minimum **DisplayQty** for a Dark PD order for the pair. Provided only for Dark PD entitled users and only for Dark PD enabled pairs

Application Logon Response Message - Success					
Tag	Tag Name			Reqd	Comments
→	→	9002	NestedUserDataValue	N	Required if NoNestedUserData > 0. Each block will contain the value for the parameter specified by the keyword in tag 9001
	Standard Trailer			Y	

4.1.4 Logon Failed Response Message

Application Logon Response Message Format - Failure

Application Logon Response Message - Failure			
Tag	Tag Name	Reqd	Comments
	Standard Header	Y	MsgType = **BF** (Response Message)
336	TradingSessionID	Y	0 (zero) no trading session was established
923	UserRequestID	Y	Carried over from User Request – Logon
553	Username	Y	Carried over from User Request – Logon
926	UserStatus	Y	The logon result status **2** = Not Logged In
927	UserStatusText	Y	The logon result status text For more information, refer to Appendix 1 **Error and Session Messages**
	Standard Trailer	Y	

4.1.5 Trading Session List

Immediately following a successful Logon Response, a Trading Session List message containing information for each Trading Session, will be sent only to clients who requested the information in the Logon request and are enabled for Fix Orders. This message is not sent for “Standard” sessions.

Trading Session List Message Format

Trading Session List Message				
Tag	Tag Name		Reqd	Comments
	Standard Header		Y	MsgType = **BJ** (Trading Session List)
386	NoTradingSessions		Y	Number of Trading Sessions.
→	336	TradingSessionID	Y	Identifier for a Trading Session. A Trading Session spans an extended period of time during which specific types of orders or specific instruments can be submitted. For example: "764"
→	1300	MarketSegmentID	Y	Identifies the type of order book in which the instrument is traded. For example, "**Fixing**"
→	1326	TradingSessionDesc	Y	Trading Session Description. For example, "**BOC 12:00 America/NewYork**" The time within the name is the local time in the time zone of the Fix.
→	20106	ValuationSource	N	Fixing Source For example: "**WM**", "**BOC**" Refer to the Guide to ICAP Pair Parameters for valid values.
→	342	TradSesOpenTime	Y	Time of the opening of the trading session. (expressed in "GMT")
→	344	TradSesCloseTime	Y	Time of the closing of the trading session (expressed in "GMT")
→	20107	ValuationDateTime	N	Fixing publication time - as provided by the Fixing valuation source (tag 20106) in the Trading Session List message.
→	340	TradeSesStatus	Y	Status of the Trading Session Valid Values are: **2** – Open **3** - Closed
	Standard Trailer		Y	

4.1.6 Password Expired

If the Ai Client's password has expired or the default password needs to be changed, the Ai Client will receive a Password Expired – User Response message from the Ai Server.

Application Logon Response Message Format - Password Expired

Application Logon Response Message - Password Expired			
Tag	Tag Name	Reqd	Comments
	Standard Header	Y	MsgType = **BF** (Response Message)
923	UserRequestID	Y	Carried over from User Request – Logon
553	Username	Y	Carried over from User Request – Logon
926	UserStatus	Y	The logon result status **1000** – Password Expired The Ai Client is not logged on until the password is changed The Logon process remains in pending state and will continue after a successful password change.
927	UserStatusText	Y	The logon result status text For more information, refer to Appendix 1 **Error and Session Messages**.
	Standard Trailer	Y	

4.1.7 Ai Client's Answer to Password Expired

The Ai Client must respond to a **Password Expired – User** Response message with a Change **Password – User** Request message containing a new password in order to complete the logon sequence. Sending any message other than Change Password (except a Heartbeat) will result in a protocol violation.

4.1.8 Change Password Request Message

Change Password Request Message Format

Change Password Request Message			
Tag	Tag Name	Reqd	Comments
	Standard Header	Y	MsgType = **BE** (Request Message)
923	UserRequestID	Y	Ai Client should turn around the UserRequestID received from the initiating Password Expired – User Response message. **Note**: This tag is required by the FIX protocol, the existence of this tag will be checked however, the contents of this tag will not be validated and will not be used.
924	UserRequestType	Y	**3** = Change Password
553	Username	Y	User name
554	Password	Y	Old password
925	NewPassword	Y	New password Must be 8–16 characters. Letters are NOT case sensitive.
	Standard Trailer	Y	

4.1.9 Cancel Duplicate Session User Response Message

The **User** Response message, containing a **UserStatus** of 1001=Cancel Duplicate Session, is sent to the Ai Client in response to a **User Request – Logon** where a spot workstation or other Ai

Server session already exists for the same user, and the initiating **User Request – Logon** did not specify the **AutoCancelDuplSession** flag, or specified that flag with a value of false.

Logon Response Message Format – Duplicate Session

Logon Response Message - Duplicate Session			
Tag	Tag Name	Reqd	Value
	Standard Header	Y	MsgType = **BF** (Response Message)
923	UserRequestID	Y	Carried over from User Request – Logon
553	Username	Y	Carried over from User Request – Logon
926	UserStatus	Y	The logon result status **1001** – Cancel Duplicate Session The Ai Client is informed that an existing spot trading workstation session is active for the same user. The Ai Client is required to indicate whether the spot trading workstation session should be canceled in favor of Ai session. The Ai Client does this via the "Answer to Cancel Duplication Session" User Request message, specified below.
927	UserStatusText	Y	The logon result status text
	Standard Trailer	Y	

4.1.10 Ai Client's Answer to Cancel Duplicate Session

The Ai Client must answer the **Cancel Duplicate Session – User** Response message with the **Cancel Duplicate Session – Request** message indicating whether or not the existing user session should be canceled. If the Ai Client indicates that the existing user session should not be canceled, by setting the value of **AutoCancelDuplSession** to false, the Ai Client will be informed that the logon attempt was unsuccessful via the Logon Response (BF) message, and the Ai Client will be left in the connected state. The Ai Client can then send another Logon Request (BE) message with the parameter **AutoCancelDuplSession** = true, forcing the existing user session to be canceled, or attempt to Logon using a different **UserName** and **Password**. If the Ai Client indicates that the existing user session should be canceled, by setting the value of **AutoCancelDuplSession** to true, the duplicate session will be terminated and the Ai Client's logon attempt will complete successfully and receive the Logon Response (BF) message indicating success.

Logon Request Message Format – Cancel Duplicate Session

Logon Request Message - Cancel Duplicate Session				
Tag	Tag Name		Reqd	Value
	Standard Header		Y	MsgType = **BE** (Request Message)
553	Username		Y	Ai Client should turn around the Username received from the initiating Cancel Duplicate Session – User Response message. **Note**: This tag is required by the FIX protocol, the existence of this tag will be checked however, the contents of this tag will not be validated and will not be used.
923	UserRequestID		Y	Ai Client should turn around the UserRequestID received from the initiating Cancel Duplicate Session – User Response message. **Note**: This tag is required by the FIX protocol, the existence of this tag will be checked, however, the contents of this tag will not be validated and will not be used
924	UserRequestType		Y	**1000** = Request to Cancel Duplicate Session
5976	NoUserData		Y	Number of repeating blocks to follow
→	5977	UserDataName	Y	Required if NoUserData > 0. Only the following user data is supported: AutoCancelDuplSession
→	5978	UserDataValue	Y	Required if NoUserData > 0. Will contain the value for the parameter specified by the value in UserDataName (tag 5977): The FIX protocol defines Boolean as: Y = True/Yes N = False/No AutoCancelDuplSession -- Boolean
	Standard Trailer		Y	

5 Password Change

5.1 Password Change Request

The **Password Change Request** message is a User Request message that is sent by the Ai Client to the Ai Server to initiate a password change.

5.1.1 Password Change Request Message

Change Password Request Message Format

Change Password Request Message			
Tag	Tag Name	Reqd	Comments
	Standard Header	Y	MsgType = **BE** (Request Message)
923	UserRequestID	Y	Correlation Id created by the Ai Client and used to track other messages associated with this request
924	UserRequestType	Y	3 = Change Password
553	Username	Y	The logon user name **Note**: This tag is required by the FIX protocol, the existence of this tag will be checked however, the contents of this tag will not be validated and will not be used.
554	Password	Y	The current password
925	NewPassword	Y	The new password Must be 8–16 characters. Letters are NOT case sensitive.
	Standard Trailer	Y	

5.2 Password Change Response

The **Password Change Response** message is sent by the Ai Server in response to a **Password Change Request**.

5.2.1 Password Change Response Message

Change Password Response Message Format - Success

Change Password Response Message - Success			
Tag	Tag Name	Reqd	Comments
	Standard Header	Y	MsgType = BF (Response Message)
923	UserRequestID	Y	Carried over from User Request – Password Change Request
553	Username	Y	The logon user name from the request message. Ai will return whatever value was included in tag 553 of the request message.
926	UserStatus	Y	The logon result status 5 – Password Changed
	Standard Trailer	Y	

5.2.2 Password Change Failed Response Message

Change Password Response Message Format - Failure

Change Password Response Message - Failure			
Tag	Tag Name	Reqd	Comments
	Standard Header	Y	MsgType = **BF** (Response Message)
923	UserRequestID	Y	Carried over from User Request – Password Change Request
553	Username	Y	The logon user name from the request message. Ai will return whatever value was included in tag 553 of the request message.
926	UserStatus	Y	The password changed result status **1002** – Password Change Failed.
927	UserStatusText	N	Result status text indicating the reason for the failure. For more information, refer to Appendix 1 **Error and Session Messages**.
	Standard Trailer	Y	

6 Heartbeat

It is the Ai Client application's responsibility to send Heartbeat messages using the interval agreed upon in the Logon A message to certify the health of the connection to the Ai Server (Ai Server uses a 1 second interval and so must the client). The Client Application can omit sending a Heartbeat message if another message (of any type) is sent by the Client before the Heartbeat interval elapses. If the Ai Client fails to send a Heartbeat message, and no other message from the Ai Client was received by the Ai Server for a period of 3 seconds, the Ai Server declares the connection **stale** and interrupts all Ai Client's active orders. The Ai Server continues to wait for Heartbeats for another 3 seconds after the connection is declared stale (6 seconds total). If the Ai Server receives a Heartbeat from the Ai client during this time, the connection is declared normal, and the Ai Client can resume trading activities (**Note**: Ai Client will need to re-submit any Orders that were cancelled). If the Ai Client does not respond, the connection is considered dead, and the Ai Server terminates the session and disconnects the Ai Client.

The Ai Server will send a Heartbeat to the client, if within the configured time interval, the Ai Server has sent no other messages.

The Ai Server expects the Client Application to respond to all Test Requests (Msg Type 1) messages, using the Heartbeat message. When responding to Test Requests, the Heartbeat message must include tag 112 (TestReqID).

Note: The Ai Server expects the **Heartbeat** interval to have a value of 1 second. In case of a violation, the Ai Server sends a **FIX Logoff** message (as defined by the FIX Protocol), shuts down the physical socket connection, and terminates the FIX Session.

The Ai Client must adhere to the FIX Protocol, Ltd (FPL) specification in checking the health of the connection to the Ai Server by sending TestRequest messages to the Ai Server when the relevant conditions are met. Please refer to the FPL documentation for details.

We strongly recommend that the Ai Client periodically check to ensure it is receiving application-level messages from the Ai Server. The Ai Client should expect responses from the Ai Server as per this message specification.

As an additional precaution to ensure messages are flowing from the Ai Server to the Ai Client, the Ai Server monitors its outbound message processing. If the Ai Server determines that messages are not being sent to the Ai Client, the Ai Server will terminate the session and disconnect the Ai Client.

6.1 Heartbeat Message

The format of the heartbeat message as sent by the Ai Server or the Ai Client is identical.

Heartbeat Message Format

Heartbeat Message			
Tag	Tag Name	Reqd	Comments
	Standard Header	Y	MsgType = **0** (Heartbeat)
	Standard Trailer	Y	

6.2 Heartbeat Error Message

The only Heartbeat error message is the Protocol Violation message which means that the Request message was formatted incorrectly.

6.3 Test Request Message

The Ai Server may send a Test Request message at anytime. The Ai Client must respond to this message with a Heartbeat (MsgType=0) which must include tag 112 with the same value as that received in the Test Request message.

Test Request Message Format

Test Request Message			
Tag	Tag Name	Reqd	Comments
	Standard Header	Y	MsgType = **1** (TestRequest)
112	TestReqID	Y	Test Request ID number. Any string can be used as the TestReqID (one suggestion is to use a timestamp string)
	Standard Trailer	Y	

6.3.1 Response to Test Request message

Responding to Test Requests is done using the regular Heartbeat message format (MsgType=0), but tag 112 must be added, and must include the TestReqID value from the Test Request message.

Test Response Message Format

Test Response Message			
Tag	Tag Name	Reqd	Comments
	Standard Header	Y	MsgType = **0** (Heartbeat)
112	TestReqID	Y	Test Request ID number. The response must use the value of the TestReqID used in the TestRequest message.
	Standard Trailer	Y	

7 Application Logoff

7.1 Application Logoff Request

The **Logoff Request** Message is sent by the Ai Client to the Ai Server to Log out of the system and to terminate the Trading Session. The FIX Session is also terminated as a result of this request.

Application Logoff Request Message Format

Application Logoff Request Message			
Tag	Tag Name	Reqd	Value
	Standard Header	Y	MsgType = **BE** (Request Message. Initiated by Ai Client)
923	UserRequestID	Y	Correlation Id created by the Ai Client and used to track other messages associated with this request
924	UserRequestType	Y	**2** = Logoff User
553	Username	Y	User name **Note**: This tag is required by the FIX protocol, the existence of this tag will be checked however, the contents of this tag will not be validated and will not be used.
	Standard Trailer	Y	

7.2 Application Logoff Response

The **Logoff Response** message is sent by the Ai Server back to the Ai Client. It is also initiated by the Ai Server when it detects a Protocol Violation. The **Logoff Response** Message includes the reason for the logoff.

Application Logoff Response Message Format

Application Logoff Response Message			
Tag	Tag Name	Reqd	Comments
	Standard Header	Y	MsgType = **BF** (User Response Message. Sent by Ai Server)
923	UserRequestID	Y	Carried over from the User Request – Logoff Request
553	Username	Y	**username** carried over from the original User Request – Logon Request
926	UserStatus	Y	The logoff result status **2** = Not Logged in
927	UserStatusText	Y	The logoff result status text
	Standard Trailer	Y	

The FIX Session is then terminated and the connection is closed.

8 Session Logoff

The Ai Client should always send the "Application Logout Request" message (BE) to logout of the Ai Server. The Ai Server will respond with an "Application Logout Response" message (BF), which may be followed by the Test Request message (1) and will then terminate the FIX session and close the socket connection. The client can ignore the Test Request message.

9 Market Data and Trading Subscription

9.1 Market Data and Trading Subscribe

The Ai Client application must send a Market Data Subscription request for all instruments it expects to trade or receive Market Views. A valid Market View subscription must meet the following conditions:

- "SubscriptionRequestType" "1"
- "MDBookType" contains a valid value
- the customer is entitled to receive market views for the requested instrument

Market Views may be used by the client for order book management.

The Ai Server supports four discrete types of Market Views: Price Depth view, Spread view, Amount view and Full Amount view:

Price Depth View

Price Depth view is available for both Market pairs and Direct pairs.

The Price Depth view provides the view of the market inventory available to the client starting from the Dealable Best or Top-of-the-Book price up to a maximum number of price points that is configured for each instrument (PriceDepthRange). This configured value specifies a range (number of price increments) to which the order book shall be consulted during the construction of this view, in such a manner that a price point that falls outside the range, will never be provided to the client.

A client can limit the scope of the market view by specifying the number of price levels to be returned by the Ai Server.

In Price Depth view, the entries are sequenced first by side, bids preceding offers, and then by price, descending for bids and ascending for offers.

When a new price level is added to the Order Book that is within the requested "depth", a market view update message is sent. The position of this newly added level is determined by the market side and the price provided with the data.

When a new price level is added, existing price levels with worse prices are pushed down. An update message will not be sent to delete the entries that have exceeded the requested total number of levels. If applicable, the lower levels will be sent again when higher levels are removed.

The following data entries are sent in the Update MarketView message to identify changes in the order book:

- An existing price level with a changed amount, to indicate a change in the available quantity at a price level
- An existing price level with a zero amount, to indicate that the price level has been cleared.

- A new price level with an amount, to add/insert a new price level

A price reported in a market view may reflect an actual discrete price in the order book, or it may reflect an aggregate price level, in which case the reported amount reflects the aggregate available amount at all price points within the range. For example, if decimalized prices are reported at half-pip granularity, e.g. bid prices of 123.450, 123.445, 123.440, etc.., then the amount associated with the price 123.445 reflects all order book amounts at prices of 123.449 through 123.445.

Aggregated price levels are provided to give users visibility into deeper levels of the book, without impacting the bandwidth necessary to relay that information. For example, EBS Direct decimalized prices may be configured to be reported at discrete price levels for the first whole pip (up to 10 decimal prices), at half-pip granularity for the next 2 pips, and at whole-pip granularity at the next 3 pips. This effectively provides a view six pips deep in 17 price points, instead of the 60 price points which would otherwise be needed.

Each EBS venue providing market-view updates, (e.g. EBS Market, EBS Direct) will be sent in its own market-view update message. The market-view publication frequency of each venue will be set individually.

Sample data to be included in a snapshot for EBS Direct tenth pip pair:

Big Fig	pips	amt	publish	publish	granularity	Max prices published	price points covered
1.32	348	3	1.32348	3	tenths	10	10
1.32	347	5	1.32347	5			
1.32	345	6	1.32345	6			
1.32	344	10	1.32344	10			
1.32	342	4	1.32342	4			
1.32	341	1	1.32341	1			
1.32	339	5	1.32339	5			
1.32	338	10			half	1	4
1.32	337	3					
1.32	335	1	1.32335	14			
1.32	334	3			half	1	5
1.32	331	9	1.32330	12			
1.32	328	2			half	1	5
1.32	326	7	1.32325	9			
1.32	324	3			half	1	5
1.32	323	5					
1.32	320	6	1.32320	14			
1.32	319	2			whole	1	10
1.32	317	7					
1.32	315	3					

Big Fig	pips	amt	publish	publish	granularity	Max prices published	price points covered
1.32	312	5					
1.32	310	6	1.32310	23			
1.32	307	3			whole	1	10
1.32	302	2	1.32300	5			
1.32	298	6					
1.32	296	3			whole	1	10
1.32	291	7	1.32290	16			
						17	59

Spread View

Spread view is available for Market pairs and is not available for Direct pairs.

The Spread view provides the view of the market where each price point is at a configured price offset from the Dealable Best and the associated inventory is the cumulative amount available at that price point. The cumulative amount is the inventory available between the dealable best price and the price at the configured price spread (includes inventory at both the price points).

The configured price spreads are listed in order of price competitiveness, where, for each side of the market, the Spread view is sorted by Price Priority; descending for Bid side and ascending for Offer side.

- When the price levels or any inventory changes within the current price levels, all subscribed levels are delivered in the update and should replace the entire spread book view.

Amount View

The Amount view provides the view of the market inventory at prices corresponding to the Market instrument's configured Amount, provided in the Login response for all available amounts, up to the subscribed number of levels.

The Amount view is sequenced by the amounts in ascending order for both bids and offers.

When there is less volume than the first amount level in the market for a currency pair, all configured amounts are provided with a QuoteCondition of "1000".

The following data entries are sent in the Incremental Refresh message to identify changes in the order book:

- An amount level with a price, and MDUpdateAction tag - 279 equal to "Change".

When a price at an amount level changes, an Incremental Refresh message is sent.

Full Amount View

Full Amount view is available for Direct pairs and is not available for Market pairs.

The Full Amount view provides the prices for a set of preconfigured full amounts. The price at a given level is valid for the reported level and all lower levels.

The Full Amount view is sequenced by the full amounts in ascending order, by amount, for both bids and offers.

When Full amounts are not available at all Full amount levels for a Direct pair, the FullAmount View snapshot will contain an entry for each level for both sides of the market with a QuoteCondition of "1000". The MdEntrySize will contain the amount associated with the each level.

The following data entries are sent in the Incremental Refresh message to identify changes in the order book:

- A full amount level with a price, and MDUpdateAction tag - 279 equal to "Change".

When a price at a full amount level changes, an Incremental Refresh message is sent. In the Incremental Refresh message, levels for which the prices have changed will be reported. If a level no longer has a price, then the price for the next level will be reported for the level with no price.

EBS Best

EBS Best updates will be included in the snapshot messages for only one of the three view types for Market pairs in the following priority (EBS Best is not provided for Direct pairs):

1. Price-Depth view
2. Spread view
3. Amount view

EBS Best is the non credit screened best price and can be reported when there are no credit screened prices available.

The Subscribe message is sent by the Ai Client to request only to trade or to trade and subscribe to Market Views, for the specific currency pairs. For a trade only subscription request, the Ai server's response to each successful request is a **Market Data – Snapshot/Full Refresh** (W), devoid of initial bid and offer values. For a request to trade and subscribe to market views, the Ai Server response to a successful **Market Data Request** (V) message is composed of two message types. For each subscribed market view type, each subscribed instrument will result in a single, initial **Market Data – Snapshot/Full Refresh** (W) message, containing the full set of market data. This will be followed by **Market Data – Incremental Refresh** (X) messages, sent at predetermined time intervals, whenever there is a change to the market data. There will be separate Incremental Refresh messages for each type of view; however the incremental message can contain updates for multiple instruments in a single message.

Tag 1021-MDBookType allows the client to specify the type of market view in the Market Data Subscription request message. For each type of view, the client can also specify the desired "levels" for which it wants to receive the market view. The maximum number of levels provided by the Ai

Server can vary for each instrument and type of view. This information will be provided to the client in the logon response message.

For each type of view, tag 264-MarketDepth allows the clients to specify the contiguous “levels” up to which they want to receive the market views. Additionally, for Spread View and Amount View, the clients can also specify the range (beginning level and end level) for which they want to receive the market views. This will be provided via two Custom tags: tag 20201-MDMarketDepthFromLevel and tag 20202-MDMarketDepthToLevel. For a Price Depth view, the first level’s price always corresponds to a Dealable Best price.

Here, it should be noted that the definition of the term “Level” differs from the one indicated by a FIX Protocol Specification’s standard tag 1023-MDPriceLevel. For a Price Depth view, a level corresponds to a price point associated with a non-zero amount in the Order Book. For Spread view, a level corresponds to a specific price point and the amount associated with that price point; whereas for Amount view, a level corresponds to a specific pre-defined amount and the price associated with that amount. For Full Amount view, a level corresponds to a specific pre-defined full amount and the full amount price associated with that full amount. Again, Since EBS Spot is a “logical price priority” system, the standard FIX protocol tag 1023-MDPriceLevel is not required to indicate the position of a price point in the Order Book, and accordingly, it will not be used in either Market Data Full Refresh or Market Data Incremental Refresh messages.

The Market Data Request message can also be sent by the Ai Client to remove a subscription for a specified view and the associated instruments or a subset of the instruments. After this message is processed by the Ai Server, no further market updates will be received by the Ai Client for the designated instruments listed in the message for that particular type of view.

Subscribe requests will be accepted while the trading system is down.

A subscribe request for an already subscribed view and instrument is accepted to modify the desired number of levels for the view type and instrument. It is not necessary to unsubscribe from the view and instrument to modify a view’s level value.

A subscription message where the NoRelatedSym tag’s value is “0” will result in a protocol violation and the client will be disconnected.

Snapshot and updates for Direct pairs are delivered separately from Market pairs with their own update frequency.

9.1.1 Market Data and Trading Subscribe Request Message

Market Data Request Message Format

Market Data Request Message			
Tag	Tag Name	Reqd	Comments
	StandardHeader	Y	MsgType = **V** (Subscribe)
262	MDReqID	Y	Correlation Id created by the Ai Client and used to track other messages associated with this request **Note 1**: For instruments that are successfully subscribed to, the MDReqID in this message will be carried over to the Market Data Snapshot/Full Refresh. For instruments that are not successfully subscribed, the MDReqId in this message will be carried over the Market Data Reject message for those instruments. The protocol does not issue a response for currently subscribed instruments that are later unsubscribed. **Note 2**: Ai does not use MDReqID to track subscriptions. The Ai Server uses the combined tags Symbol / CFICode / SettlType.
263	SubscriptionRequestType	Y	**1** = Snapshot + Updates (Subscribe) (also allows trading) **Z** = No market views, trading request only
1021	MDBookType	N	This tag describes the type of Order Book view (Market View) requested by this message. For the Ai Server, the valid values are: **2** - Price-Depth View **1101** - Spread View **1102** - Amount View **1103** – Full Amount View "**1103**", Full Amount View is only applicable for Direct instruments. Conditionally required, when tag 263, SubscriptionRequestType = "**1**" Any other value will result in rejection of the Subscription.
264	MarketDepth	Y	Indicates the maximum number of data points a client can receive for the requested MDBookType for the currency pair, which is different from the standard FIX definition of this tag. Refer to section 9.1 for more information. **0** - full book depth (up to maximum levels provided by Ai Server) Since it is a required tag by FIX protocol specifications, value of "0" is recommended as a filler value. When the tags MDMarketDepthFromLevel and MDMarketDepthToLevel are present, this tag will be ignored for Spread view, Amount view, and Full Amount view. The value of this tag is applied to all currency pairs in the subscription request, Separate subscriptions are required for any currency pairs for which this value is invalid. (valid values are provided in the logon response.)

Market Data Request Message				
Tag	Tag Name		Reqd	Comments
20201	MDMarketDepthFromLevel		N	This tag is used to specify the beginning level of a range for which the client wants to receive the market views. The range will include the beginning level. It is used in conjunction with tag 20202-MDMarketDepthToLevel. This tag is applicable only when subscribing for Spread view, Amount view, and Full Amount view and ignored for Price Depth view. The value of this tag is applied to all currency pairs in the subscription request, Separate subscriptions are required for currency pairs requiring different level values.
20202	MDMarketDepthToLevel		N	This tag is used to specify the end level of a range for which the client wants to receive the market views. The range will include the end level. It is used in conjunction with tag 20201-MDMarketDepthFromLevel. This tag is applicable only when subscribing for Spread view, Amount view, and Full Amount view and ignored for Price Depth view. The value of this tag is applied to all currency pairs in the subscription request, Separate subscriptions are required for currency pairs requiring different level values.
265	MDUpdateType		Y	Always **1** = Incremental Refresh This tag is validated for existence to satisfy the FIX protocol, the content of the tag is not validated and a value of 1 is always assumed.
267	NoMDEntryTypes		Y	Number of repeating blocks to follow Always **1** - This tag is validated for existence to satisfy the FIX protocol, the content of the tag is not validated and a value of 1 is always assumed.
→	269	MDEntryType	Y	Always "*****' (without quotes) to indicate all available types of Quotes. This tag is validated for existence to satisfy the FIX protocol, the content of the tag is not validated and a value of '*' (without quotes) is always assumed.
146	NoRelatedSym		Y	Number of repeating blocks to follow. Must be >= 1.
→	55	Symbol	Y	**Base/Local** = Currency pair in CCY1/CCY2 convention.
→	461	CFICode	Y	**RCSXXX** = FX Spot **FFCNNO** = NDF
→	63	SettlType	Y	**0** = Regular FX Spot settlement (T+1 or T+2 depending on currency) **Dx** = NDF tenor expression for "days", e.g. "D5", where "x" is any integer > 0 **Mx** = FX tenor expression for "months", e.g. "M3", where "x" is any integer > 0 **Wx** = FX tenor expression for "weeks", e.g. "W13", where "x" is any integer > 0 **Yx** = FX tenor expression for "years", e.g. "Y1", where "x" is any integer > 0 **B** = Fixed Date tenor for Fixed Date NDFs only. The Settlement Date will be provided in tag 64, SettlDate. Noted that for FX the tenors expressed using Dx, Mx, Wx, and Yx values do not denote business days, but calendar days.

Market Data Request Message				
Tag	Tag Name		Reqd	Comments
→	64	SettlDate	N	Required if SettlType = **B** This tag will contain the Fixed Date NDF settlement date. The date format is **YYYYMMDD**
StandardTrailer			Y	

9.2 Market Data and Trading Unsubscribe

A client can unsubscribe for, a single market view or all Market Views, for a single instrument. When the last Market View is unsubscribed, trading will be discontinued for the specified instrument.

When a client is subscribed for multiple Market Views and would like to unsubscribe for a single Market View, the Unsubscribe request must specify the MDBookType to be removed.

When a client is subscribed for multiple Market Views and would like to unsubscribe for all Market Views and discontinue trading in a single request, the Unsubscribe request should not specify the MDBookType.

Once unsubscribed from all views, the client will not be able to trade. The client must re-Subscribe for the instrument in order to resume trading.

When a client is subscribed for a single Market View and would like to unsubscribe for it, the Unsubscribe request may or may not specify the MDBookType. Trading will be discontinued for the specified instrument. The client must re-Subscribe for the instrument in order to resume trading (without Market Views).

9.2.1 Market Data and Trading Unsubscribe Request Message

Market Data Request Message Format - Unsubscribe

Market Data Request Message -- Unsubscribe				
Tag	Tag Name		Reqd	Comments
	StandardHeader		Y	MsgType = **V** (Subscribe)
262	MDReqID		Y	Unique Id identifying the request. The Ai Client must provide the same **MDReqID** which was contained in the message used to subscribe to this instrument. Note: Although this tag is required by the FIX protocol, Ai does not use MDReqID to track subscriptions. The Ai Server uses the combined tags Symbol / CFICode / SettlType.
263	SubscriptionRequestType		Y	**2** = Disable previous Snapshot + Update Request (Unsubscribe). Trading is also stopped until re-subscribed Orders already in the market are not cancelled.
1021	MDBookType		N	This tag describes the type of Order Book view (Market View) requested by this message. For Ai Server, the valid values are: **2** - Price-Depth View **1101** - Spread View **1102** - Amount View **1103** – Full amount View Any other value will result in rejection of the Subscription.
264	MarketDepth		Y	Always **0** – This tag is required by FIX but this tag is not used by Ai for Unsubscribe and will be ignored.
267	NoMDEntryTypes		Y	Number of repeating blocks to follow Always **1** - This tag is validated for existence to satisfy the FIX protocol, the content of the tag is not validated and a value of 1 is always assumed.
→	269	MDEntryType	Y	Always '*' (without quotes) to indicate all available types of Quotes. This tag is validated for existence to satisfy the FIX protocol, the content of the tag is not validated and a value of '*' (without quotes) is always assumed.
146		NoRelatedSym	Y	Number of repeating blocks to follow
→	55	Symbol	Y	**Base/Local** = Currency pair in CCY1/CCY2 convention
→	461	CFICode	Y	**RCSXXX** = FX Spot **FFCNNO** = NDF

Market Data Request Message -- Unsubscribe				
Tag	Tag Name		Reqd	Comments
→	63	SettlType	Y	Not required if NoRelatedSym = 0 Required if NoRelatedSym > 0. **0** = Regular FX Spot settlement (T+1 or T+2 depending on currency) **Dx** = NDF tenor expression for "days", e.g. "D5", where "x" is any integer > 0 **Mx** = FX tenor expression for "months", e.g. "M3", where "x" is any integer > 0 **Wx** = FX tenor expression for "weeks", e.g. "W13", where "x" is any integer > 0 **Yx** = FX tenor expression for "years", e.g. "Y1", where "x" is any integer > 0 **B** = Fixed Date tenor for Fixed Date NDFs only. The Settlement Date will be provided in tag 64, SettlDate. Noted that for FX the tenors expressed using Dx, Mx, Wx, and Yx values do not denote business days, but calendar days.
→	64	SettlDate	N	Required if SettlType = **B** This tag will contain the Fixed Date NDF settlement date. The date format is **YYYYMMDD**
StandardTrailer			Y	

9.2.2 Market Data and Trading Subscribe Response

The Market Data – Snapshot/Full Refresh message is sent once, as the response to a successful subscription request, for each view and instrument subscribed via the Market Data Request (V) message. It may be devoid of initial bid and offer values, if it is sent as a response to a Trading only subscription request. If it is a response to a trade and subscribe to Market Views request, the Market Data Snapshot/Full Refresh message will contain the full view of the market for that view type for the subscribed currency pair.

Although multiple currency pairs can be contained in a single Subscription Request, a response Snapshot/Full Refresh message will be sent individually for each successfully subscribed currency pair for each type of view. The structure of the Market Data Snapshot/Full Refresh message will be identical for each of the four types of views provided by Ai Server. However, the content will be specific to a particular type of view that provides a distinct insight into the Order Book.

9.2.3 Market Data– Snapshot/Full Refresh (Trade only request response)

Market Data Snapshot/Full Refresh (Trade only request response) Message Format

Market Data Snapshot/Full Refresh (Trade only request response) Message				
Tag	Tag Name		Reqd	Comments
	StandardHeader		Y	MsgType = **W** (Snapshot/FullRefresh)
262	MDReqID		Y	Will contain the MDReqID carried over from the original Market Data Request subscription message.
55	Symbol		Y	**Base/Local** = Currency pair in CCY1/CCY2 convention
461	CFICode		Y	**RCSXXX** = FX Spot **FFCNNO** = NDF
63	SettlType		Y	**0** = Regular FX Spot settlement (T+1 or T+2 depending on currency) **Dx** = NDF tenor expression for "days", e.g. "D5", where "x" is any integer > 0 **Mx** = FX tenor expression for "months", e.g. "M3", where "x" is any integer > 0 **Wx** = FX tenor expression for "weeks", e.g. "W13", where "x" is any integer > 0 **Yx** = FX tenor expression for "years", e.g. "Y1", where "x" is any integer > 0 **B** = Fixed Date tenor for Fixed Date NDFs only. The Settlement Date will be provided in tag 64, SettlDate. Noted that for FX the tenors expressed using Dx, Mx, Wx, and Yx values do not denote business days, but calendar days.
→	64	SettlDate	N	When SettlType = **B**, this tag will contain the Fixed Date NDF settlement date. The date will be published in **YYYYMMDD** format
268		NoMDEntries	Y	Number of repeating blocks to follow. Must be = **1**.
→	269	MDEntryType	Y	**Z** = No market views
→	270	MDEntryPx	Y	This tag contains a Price, which for this response to a trade only subscription, will contain 0.0.
		StandardTrailer	Y	

9.2.4 Market Data– Snapshot/Full Refresh (Trade and Market Views request response)

Market Data Snapshot/Full Refresh (Trade and Market Views request response) Message Format

Market Data Snapshot/Full Refresh (Trade and Market Views request response) Message				
Tag	Tag Name		Reqd	Comments
	StandardHeader		Y	MsgType = **W** (Snapshot/FullRefresh)
262	MDReqID		Y	Will contain the MDReqID carried over from the original Market Data Request subscription message.
55	Symbol		Y	**Base/Local** = Currency pair in CCY1/CCY2 convention
461	CFICode		Y	**RCSXXX** = FX Spot **FFCNNO** = NDF
63	SettlType		Y	**0** = Regular FX Spot settlement (T+1 or T+2 depending on currency) **Dx** = NDF tenor expression for "days", e.g. "D5", where "x" is any integer > 0 **Mx** = FX tenor expression for "months", e.g. "M3", where "x" is any integer > 0 **Wx** = FX tenor expression for "weeks", e.g. "W13", where "x" is any integer > 0 **Yx** = FX tenor expression for "years", e.g. "Y1", where "x" is any integer > 0 **B** = Fixed Date tenor for Fixed Date NDFs only. The Settlement Date will be provided in tag 64, SettlDate. Noted that for FX the tenors expressed using Dx, Mx, Wx, and Yx values do not denote business days, but calendar days.
64	SettlDate		N	When SettlType = **B**, this tag will contain the Fixed Date NDF settlement date. The date will be published in **YYYYMMDD** format
1021	MDBookType		N	This tag describes the type of Order Book view (Market View) requested by the client in the Market Data Request message. For the Ai Server, the valid values are: **2** - Price-Depth View **1101** - Spread View **1102** - Amount View **1103** – Full Amount View "1103", Full Amount View is only applicable to Direct instruments.
268	NoMDEntries		Y	Number of repeating blocks to follow. Must be >= 1.
→	269	MDEntryType	Y	Ai FIX will use one of the following enum values from the MDEntryType description. . **0** = Bid **1** = Offer w = EBS Best Offer x = EBS Best Bid

Market Data Snapshot/Full Refresh (Trade and Market Views request response) Message				
Tag	Tag Name		Reqd	Comments
→	270	MDEntryPx	Y	This tag contains a Price For the **Price-Depth** view, it is the bid price at which the associated inventory (size) is available. When there is no price in the market for the **Price-Depth** view, the snapshot will show all levels with a zero price and Quote Condition = “1000”. For **Spread** view, the price at the configured offset from the dealable best. When there is no price in the market for the **Spread** view, the snapshot will show all levels with a zero price and Quote Condition = “1000”. For **Amount** view, it is the price for the configured aggregated amount. When there is no price in the market for the **Amount** view, the snapshot will show all levels with a zero price and Quote Condition = “1000”. For **Full Amount** view, it is the price for the configured amount. When there is no price in the market for the **Full Amount** view, the snapshot will show all levels with a zero price and Quote Condition = “1000”. This tag is a required tag as per the conditions placed on the tag by the FIX protocol. The message should first be checked for the existence of the QuoteCondition tag. If QuoteCondition exists in the message then the MDEntryPx tag value should be interpreted as follows: When QuoteCondition equals 1000 or 1001, MDEntryPx will contain a value of 0.0, however MDEntryPx should be ignored because, under these conditions, the price is provided only to satisfy the FIX protocol and it is not an actual price. When QuoteCondition does not exist in this message, MDEntryPx will contain a valid price.
→	276	QuoteCondition	N	This tag indicates one of the following states related to the price: **1000** - No market activity **1001** - No data available

Market Data Snapshot/Full Refresh (Trade and Market Views request response) Message				
Tag	Tag Name		Reqd	Comments
→	271	MDEntrySize	N	This tag contains an Amount. For **Price-Depth** view, it is the cumulative amount of the Quotes at the specific price (above). For **Spread** view, it is the cumulative amount from the top of book. For **Amount** view, it is the pre-configured amount level. For **Full Amount** view, it is the pre-configured full amount level. This tag is not provided for EBS Best Bid/Offer. If TradeCondition exists, MDEntrySize tag value should be interpreted as follows: When TradeCondition equals 1000 or 1001 MDEntrySize will be set to a value of 0, which should be ignored. The amount is provided only to satisfy the FIX protocol.
→	277	TradeCondition	N	This tag indicates one of the following states related to the amount: **1000** – No market activity. **1001** – No data available
StandardTrailer			Y	

9.2.5 Market Data – Incremental Refresh

Incremental Refresh messages will be sent subsequent to the **Market Data – Snapshot/Full Refresh** message which will only include the levels that have been updated for each type of subscribed view. Incremental Refreshes for subscribed instruments will be governed by the same subscription parameters as those of the instrument's Snapshot. A single Market View update message can contain market data for all the subscribed view types and instruments that have been updated during the reporting time slice.

Immediately following a Trading Session Status message indicating that EBS is down, Incremental Refresh messages will be sent to the client with a trade condition of "1001", no data available, for each subscribed currency pair and each view type. MDEntries will also be sent for EBS Best offer, EBS Best Bid, and Trade. The client should clear their order book. After the SessionEvent message indicating "EBS is up" is sent, Market view update messages reflecting the current state of the market will be sent. No Update message will be sent for currency pairs that have no price in the market, but Update messages will be sent when a price is introduced into the market.

If the trading system is down while the client subscribed to market views, snapshots with a trade condition of “1001”, no data available, will be sent to the client for each pair subscription.

“Paid” and/or “Given” market view updates, providing dealt rates, will be included in the update message for one of the three view types for Market pairs in the following priority (Paid/Given is not provided for Direct pairs, or intrafloor deals):

1. Price-Depth view
2. Spread view
3. Amount view

EBS Best

EBS Best updates will be included in the update messages for only one of the three view types for Market pairs in the following priority (EBS Best is not provided for Direct pairs):

1. Price-Depth view
2. Spread view
3. Amount view

EBS Best is the non credit screened best price and can be reported when there are no credit screened prices available

When there is no market activity for the spread view, an Incremental Refresh message will be sent with no MDEntryPx tag and no MDEntrySize tag and a QuoteCondition of 1000.

The Ai Server will also notify the client as to whether or not a particular Market view update message is the last in the corresponding time-slice, via a custom tag: 20203 – MDLastIncrementalRefresh.

EBS Best Bid and Offer will continue to be received by the client when the floor is down. (EBS Down)

Market Data Incremental Refresh Message Format

Market Data Incremental Refresh Message				
Tag	Tag Name		Reqd	Comments
	StandardHeader		Y	MsgType = **X** (Incremental Refresh-Update)
1021	MDBookType		N	This tag describes the type of Order Book view (Market View) requested by the client in the Market Data Request message. For the Ai Server, the valid values are: **2** – Price Depth View **1101** - Spread View **1102** - Amount View **1103** – Full Amount View Full Amount View is only applicable to Direct instruments.
20203	MDLastIncrementalRefresh		Y	This tag describes whether or not this update message is the last in a particular time slice. The possible values are: "**0**" = there are additional Incremental Refresh messages to follow in the reporting time slice. "**1**" = last Incremental Refresh message in the reporting time slice
268	NoMDEntries		Y	Number of repeating blocks to follow
→	279	MDUpdateAction	Y	**0** = New **1** = Change **2** = Delete For **Spread** view, the value will always be "0". For **Amount** view, the value will be "1". For **Full Amount** View, the value will be "1'. For **Price-Depth** view, the values can be 0, 1, or 2. For **Price-Depth** view, when 276 = 1001, the value will be 0. For all views, when 276 = 1001, for MDEntryType = 2, w, or x, the value will be 0. Must be the first tag in this repeating block.
→	269	MDEntryType	Y	Ai FIX will use one for the following enum values from the MDEntryType description for offers, bids, and trades (paid, given). 0 = Bid 1 = Offer 2 = Trade (paid, given) (Not applicable for Direct pairs) w = EBS Best Offer x = EBS Best Bid
→	5450	MDElementName	N	Custom tag – see enum values table for MDElementName. Specifies the type of update for this entry. This tag is conditionally required only when the tag MDEntryType has a value of "**2"** - Trade. (Not applicable for Direct pairs)
→	55	Symbol	Y	**Base/Local** Denotes the currency pair in CCY1/CCY2 convention.
→	461	CFICode	Y	**RCSXXX** = FX Spot **FFCNNO** = NDF

Market Data Incremental Refresh Message				
Tag	Tag Name		Reqd	Comments
→	63	SettlType	Y	**0** - Regular / FX Spot settlement (T+1 or T+2 depending on currency) **Dx** = FX tenor expression for "days", e.g. "D5", where "x" is any integer > 0 **Wx** = FX tenor expression for "weeks", e.g. "W13", where "x" is any integer > 0 **Mx** = FX tenor expression for "months", e.g. "M3", where "x" is any integer > 0 **Yx** = FX tenor expression for "years", e.g. "Y1", where "x" is any integer > 0 **B** = Fixed Date tenor for Fixed Date NDFs only. The settlement date will be provided in tag 64. SettlDate. Noted that for FX the tenors do not denote business days, but calendar days.
→	64	SettlDate	N	When SettlType = **B,** this tag will contain the Fixed Date NDF settlement date. The date will be published in **YYYYMMDD** format
→	270	MDEntryPx	N	If this tag exists then it will contain a valid price. For the removal of a spread price point, this tag will not be sent.
→	276	QuoteCondition	N	This tag indicates one of the following states related to the price: **1000** - No market activity **1001** – No data available If the QuoteCondition tag exists and specifies 1000 or 1001 then the MDEntryPx tag will not be present in this message.
→	271	MDEntrySize	N	If this tag exists then it will contain a valid amount. For the removal of a spread price point, this tag will not be sent. When “QuoteCondition” = “1000”, for the Amount view, this tag contains the amount matching the 1st subscribed level, that is no longer available. Removal of any larger amounts is implied. When “QuoteCondition” = “1000”, for the Full Amount view, this tag contains the amount matching each of the previously reported levels.
→	277	TradeCondition	N	This tag indicates one of the following states related to amount: **1000** - No market activity. **1001** – No data available If this tag exists and specifies 1000 or 1001 then the MDEntrySize tag will not be present in this message.
→	5457	PriceTimestamp	N	Date and Time of the published price. Times are reported to second’s precision, although the tag provides for milliseconds. Published when MDElementName is equal to 11-Paid or 12-Given,
	StandardTrailer		Y	

9.3 Market Data Subscribe Reject

A **Market Data Request Reject (Y)** message will be sent in response to an invalid Market Data Request (V) message. Below are some of the invalid scenarios:

- Ai Client tries to subscribe to a specific type of market view for a “Market Depth” that is more than the maximum depth configured for the particular instrument.
- Ai Client tries to subscribe to an invalid instrument.
- Ai Client tries to subscribe to an instrument with SettlType = “**B**”, and SettlDate is blank or invalid.
- Ai Client tries to subscribe to a currency pair for which the market data cannot be provided.
- Ai Client tries to subscribe for a Market View type that is not supported by the Ai Server.

The **Market Data Request Reject (Y)** message will identify the instruments in error from the original **Market Data Request** message.

Although multiple currency pairs can be contained in a single Subscription Request, a Subscription Rejection message will be sent individually for each rejected currency pair.

Market Data Response Message Format - Failure

Market Data Response Message - Failure			
Tag	Tag Name	Reqd	Comments
	StandardHeader	Y	MsgType = **Y** (Subscribe Reject)
262	MDReqID	Y	Ai will populate this tag with the unique Id provided by the Ai Client in the original Market Data Request message for this instrument.
281	MDReqRejReason	Y	**0** – Unknown symbol **3** – Insufficient Permissions **5** – Unsupported MarketDepth. MarketDepth values are provided in the logon response. **A** – Unsupported Scope
58	Text	N	The text will include the instrument that was rejected. For more information, refer to Appendix 1 **Error and Session Messages**.
	StandardTrailer	Y	

9.4 Tags with Custom Enum Values

Tag Name	Tag	Data Type
MDElementName	5450	String
MDEntryType	269	Char
QuoteCondition	276	String
SubscriptionRequestType	263	String
TradeCondition	277	String
MDBookType	1021	String

9.4.1 Custom Enum Values

Tag Name	Value	Description
MDElementName		
	11	**Paid** The highest paid dealt rates during the previous Market View time slice. The deals reflect activity throughout the entire EBS FX Spot market. Not provided for Direct pairs.
	12	**Given** The lowest given dealt rates during the previous Market View time slice. The deals reflect activity throughout the entire EBS FX Spot market Not provided for Direct pairs.

Tag Name	Value	Description
MDEntryType		
	w	EBS Best Offer
	x	EBS Best Bid
	Z	No market views

Tag Name	Value	Description
QuoteCondition	1000	no market activity
	1001	no data available

Tag Name	Value	Description
SubscriptionRequestType	Z	No market views, trading request only

Tag Name	Value	Description
TradeCondition	1000	no market activity
	1001	no data available

Tag Name	Value	Description
MDBookType	1101	Spread View
	1102	Amount View
	1103	Full Amount view

9.4.2 Custom Tags

Custom Tags			
Tag Name	Value	FIX Data Type	Description
PriceDepth 20100	1,2..n	int	Indicates the maximum number of data points a client can receive for this currency pair in the Price Depth view.
NoSpreads 20101	1,2..n	int	Specifies the number of Spread elements.
NoAmounts 20102	1,2..n	int	Specifies the number of Amount elements.
SpreadPriceOffsett 20103		Price	The configured spread price offset determines the prices at which the accumulated inventory from the best dealable price will be reported, when the client subscribes to Spread View for this instrument.
CumulativeAmount 20104		int	The configured sizes are the amounts for which prices will be reported in order to “take” the entire amount, when the client subscribes to an Amount View for this instrument.
PriceDepthRange 20105	1,2..n	int	The number of full pip increments to which the order book shall be consulted during the construction of the view.
ValuationSource 20106		String	Fixing Source.
ValuationDateTime 20107		UTC timestamp	Date and time of the Fixing.
ValuationPriceTime 20108		UTC timestamp	Time the Fixing Rate is received by ICAP
PriceDiscretion 20109		Price	Discretionary offset to the price on the order.
IcebergHighRandomTime 20112		Qty	Maximum elapsed time before the DisplayQty is replenished.
NoFullAmounts 20113		int	Number of full amounts provided in the logon response.
FullAmount 20114		int	Amounts available at a specified price
MDMarketDepthFromLevel - 20201	1,2..n	Int	This tag is used to specify the beginning level of a range for which the client wants to receive the market views. The range will include the beginning level. It is used in conjunction with tag 20202-MDMarketDepthToLevel. This tag is applicable only when subscribing for Spread view and Amount view and ignored for Price Depth view.
MDMarketDepthToLevel - 20202	1,2..n	int	This tag is used to specify the end level of a range for which the client wants to receive the market views. The range will include the end level. It is used in conjunction with tag 20201-MDMarketDepthFromLevel. This tag is applicable only when subscribing for Spread view and Amount view and ignored for Price Depth

Custom Tags			
Tag Name	Value	FIX Data Type	Description
			view.
MDLastIncrementalRefresh – 20203	0,1	int	This tag describes whether or not this update message is the last in a particular time slice. The possible values are: "0" = there are additional Incremental Refresh. messages to follow in the reporting time slice. "1" = last Incremental Refresh message in the reporting time slice.
AutoInterrupt - 20301	1,2..n	int	This tag is used to specify the number of pips beyond the EBS Best price, of the opposite side, at which a Continuous Match order will be cancelled by the Broker. This tag is applicable for the original submission of an order and is not modifiable on an amend.

9.5 Example Messages

9.5.1 Market Data Request messages

9.5.1.1 Market Data Request message for Price Depth view

The client requests to receive the PriceDepth view of up to 3 levels (for each side of the market).

Tag number	Tag name	Value	Description
Header		V	Market Data Request
263	SubscriptionRequest Type	1	1 = Snapshot + Updates requested
265	MDUpdateType	1	1 = Full Refresh + Incremental Refresh
1021	MDBookType	2	Price Depth
264	MarketDepth	3	Number of levels
262	MDReqID	123	My request ID
267	NoMDEntryTypes	1	
269	MDEntryType	*	All types of available quotes/trades
146	NoRelatedSym	1	
55	Symbol	EUR/USD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
Trailer			

9.5.1.2 Market Data Request message for Amount view

The client requests to receive the Amount View for "depth" levels 3-to-5 (for each side of the market).

Tag number	Tag name	Value	Description
Header		V	Market Data Request
263	SubscriptionRequest Type	1	1 = Snapshot + Updates requested
265	MDUpdateType	1	1 = Full Refresh + Incremental Refresh
1021	MDBookType	1102	Amount View
264	MarketDepth	0	Filler Value. Ai Server will ignore this value because from level and to levels are provided.
20201	MDMarketDepthFromLevel	3	
20202	MDMarketDepthToLevel	5	
262	MDReqID	123	My request ID
267	NoMDEntryTypes	1	
269	MDEntryType	*	All types of available quotes/trades
146	NoRelatedSym	1	
55	Symbol	EUR/USD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
Trailer			

9.5.1.3 Market Data Request message for Spread view

The client requests to receive the Amount View for “depth” levels 3-to-5 (for each side of the market).

Tag number	Tag name	Value	Description
Header		V	Market Data Request
263	SubscriptionRequest		
Type	1	1 = Snapshot + Updates requested	
265	MDUpdateType	1	1 = Full Refresh + Incremental Refresh
1021	MDBookType	1101	Spread View
264	MarketDepth	0	Filler Value. Ai Server will ignore this value because from level and to levels are provided.
20201	MDMarketDepthFromLevel	3	
20202	MDMarketDepthToLevel	5	
262	MDReqID	123	My request ID
267	NoMDEntryTypes	1	
269	MDEntryType	*	All types of available quotes/trades
146	NoRelatedSym	1	
55	Symbol	EUR/USD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
Trailer			

9.5.1.4 Market Data Request message for Full Amount view

The client requests to receive the Full Amount View for “depth” levels 1-3 (for each side of the market).

Tag number	Tag name	Value	Description
Header		V	Market Data Request
263	SubscriptionRequest Type	1	1 = Snapshot + Updates requested
265	MDUpdateType	1	1 = Full Refresh + Incremental Refresh
1021	MDBookType	1103	Full Amount View
264	MarketDepth	0	Filler Value. Ai Server will ignore this value because from level and to levels are provided.
20201	MDMarketDepthFromLevel	1	
20202	MDMarketDepthToLevel	3	
262	MDReqID	SUB1!	My request ID
267	NoMDEntryTypes	1	
269	MDEntryType	*	All types of available quotes/trades
146	NoRelatedSym	1	
55	Symbol	USD/CAZ	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
Trailer			

9.5.2 Market Data Snapshot – Full Refresh messages

9.5.2.1 Price Depth view

The following example can be assumed to be sent by Ai Server in response to the Market Data Request message sent by client in section 9.5.1.1.

Tag number	Tag name	Value	Description
Header		W	Snapshot Full Refresh
262	MDReqID	123	My request ID
1021	MDBookType	2	Price Depth
55	Symbol	EUR/USD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
268	NoMDEntries	5	Number of repeating entries
269	**MDEntryType**	**0**	**A Buy Side Snapshot**
271	MDEntrySize	1	Quantity
270	MDEntryPx	1.22453	Price – Dealable Best
269	**MDEntryType**	**0**	**A Buy Side Snapshot**
271	MDEntrySize	1	Quantity
270	MDEntryPx	1.22451	Price
269	**MDEntryType**	**0**	**A Buy Side Snapshot**
271	MDEntrySize	3	Quantity
270	MDEntryPx	1.22449	Price
269	**MDEntryType**	**1**	**A Sell Side Snapshot**
271	MDEntrySize	5	Quantity
270	MDEntryPx	1.22455	Price – Dealable Best
269	**MDEntryType**	**1**	**A Sell Side Snapshot**
271	MDEntrySize	2	Quantity
270	MDEntryPx	1.22458	Price
Trailer			

The above message creates the resulting Order Book:

Price-Depth View Amount (in millions) / price	
BID	OFFER
1 / 1.22453	5 / 1.22455
1 / 1.22451	2 / 1.22458
3 / 1.22449	

In the above Order Book, although the client has requested to receive the depth of up to three levels, on the OFFER side there is a market for only two price points.

9.5.2.2 Amount view

The following example can be assumed to be sent by Ai Server in response to the Market Data Request message sent by client in section 9.5.1.2

For the given instrument, the preconfigured amounts at which the market views can be provided are 50, 100, 150, 200, and 250 million.

Tag number	Tag name	Value	Description
Header		W	Snapshot Full Refresh
262	MDReqID	123	My request ID
1021	MDBookType	1102	Amount view
55	Symbol	EUR/USD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
268	NoMDEntries	6	Number of repeating entries
269	**MDEntryType**	**0**	**A Buy Side Snapshot**
271	MDEntrySize	150	Quantity
270	MDEntryPx	1.22453	Price
269	**MDEntryType**	**0**	**A Buy Side Snapshot**
271	MDEntrySize	200	Quantity
270	MDEntryPx	1.22399	Price
269	**MDEntryType**	**0**	**A Buy Side Snapshot**
271	MDEntrySize	250	Quantity
270	MDEntryPx	1.22354	Price
269	**MDEntryType**	**1**	**A Sell Side Snapshot**
271	MDEntrySize	150	Quantity
270	MDEntryPx	1.22499	Price
269	**MDEntryType**	**1**	**A Sell Side Snapshot**
271	MDEntrySize	200	Quantity
270	MDEntryPx	1.22511	Price
269	**MDEntryType**	**1**	**A Sell Side Snapshot**
271	MDEntrySize	250	Quantity
276	QuoteCondition	1000	No Market Activity
270	MDEntryPx	0.0	Filler value (should be ignored)
Trailer			

The above message creates the resulting Order Book:

Amount View Amount (in millions) / price	
BID	OFFER
150 / 1.22453	150 / 1.22499
200 / 1.22399	200 / 1.22511
250 / 1.22354	

In the above view, there is not enough market inventory for the 250 million amount on the OFFER side for the subscribed instrument.

9.5.2.3 Spread view

The structure of Full Refresh messages for Spread view is similar to the Full Refresh messages for a Price Depth view.

For the example, the prices in the market are:

BID	OFFER
1 / 1.22453 (not reported top of book)	1 / 1.22459 (not reported top of book)
1 / 1.22452	1 / 1.22462
2 / 1.22443 (not reported level 1)	3 / 1.22469 (not reported level 1)
1 / 1.22433 (not reported level 2)	1 / 1.22479 (not reported level 2)
1 / 1.22423 (reported – level 3)	1 / 1.22489 (reported – level 3)
1 / 1.22419	1 / 1.22490
0 / 1.22413 (reported – level 4)	5 / 1.22499 (reported – level 4)
1 / 1.22410	1 / 1.22505
3 / 1.22403 (reported – level 5)	5 / 1.22509 (reported – level 5)

This message below is in response to a Spread view request for “depth” from levels 3-5. And the market prices are in the table above. The given instrument has prices defined in decimal pips, and the “Spread” is configured as 1 full pip.
In the below snapshot, the Quantity is an accumulation of the inventory available at the reported price.

Tag number	Tag name	Value	Description
Header		W	Snapshot Full Refresh
262	MDReqID	123	My request ID
1021	MDBookType	1101	Spread View
55	Symbol	EUR/USD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
268	NoMDEntries	6	Number of repeating entries
269	**MDEntryType**	**0**	**A Buy Side Snapshot**
271	MDEntrySize	6	Quantity
270	MDEntryPx	1.22423	Price
269	**MDEntryType**	**0**	**A Buy Side Snapshot**
271	MDEntrySize	7	Quantity
270	MDEntryPx	1.22413	Price
269	**MDEntryType**	**0**	**A Buy Side Snapshot**
271	MDEntrySize	11	Quantity
270	MDEntryPx	1.22403	Price
269	**MDEntryType**	**1**	**A Sell Side Snapshot**
271	MDEntrySize	7	Quantity
270	MDEntryPx	1.22489	Price
269	**MDEntryType**	**1**	**A Sell Side Snapshot**
271	MDEntrySize	13	Quantity
270	MDEntryPx	1.22499	Price
269	**MDEntryType**	**1**	**A Sell Side Snapshot**
271	MDEntrySize	19	Quantity
270	MDEntryPx	1.22509	Price
Trailer			

The above message creates the resulting Order Book:

Spread View Amount (in millions) / price	
BID	OFFER
6 / 1.22423	7 / 1.22489
7 / 1.22413	13 / 1.22499
11 / 1.22403	19 / 1.22509

9.5.2.4 Full Amount view

The structure of Full Refresh messages for Full Amount view is similar to the Full Refresh messages for an Amount view.

For the given instrument, the preconfigured amounts at which the market views can be provided are 1, 5, and 10 million for this example.

This message below is in response to a Full Amount view request for “depth” from levels 1-3.

Tag number	Tag name	Value	Description
Header		W	Snapshot Full Refresh
262	MDReqID	SUB1!	My request ID
1021	MDBookType	1103	Full Amount View
55	Symbol	USD/CAZ	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
268	NoMDEntries	3	Number of repeating entries
269	**MDEntryType**	**0**	**A Buy Side Snapshot**
271	MDEntrySize	1000000	Quantity
270	MDEntryPx	1.00130	Price
269	**MDEntryType**	**0**	**A Buy Side Snapshot**
271	MDEntrySize	5000000	Quantity
270	MDEntryPx	1.00128	Price
269	**MDEntryType**	**0**	**A Buy Side Snapshot**
271	MDEntrySize	10000000	Quantity
270	MDEntryPx	1.00123	Price
269	**MDEntryType**	**1**	**A Sell Side Snapshot**
271	MDEntrySize	1000000	Quantity
270	MDEntryPx	1.00230	Price
269	**MDEntryType**	**1**	**A Sell Side Snapshot**
271	MDEntrySize	5000000	Quantity
270	MDEntryPx	1.00230	Price
269	**MDEntryType**	**1**	**A Sell Side Snapshot**
271	MDEntrySize	10000000	Quantity
270	MDEntryPx	1.00233	Price
Trailer			

9.5.2.5 Amount View – No Market

When the client subscribes for **Amount** market views and there is no market for the subscribed pair, the Ai Server will send entries for all subscribed levels for each side of the market.

This message below is in response to a request for “depth” from levels 3-to-5 for Amount View. The pre-configured amounts at which the market views will be provided are 50, 100, 150, 200, and 250 million.

Example of “Amount view” Snapshot message with no market:

Tag number	Tag name	Value	Description
Header		W	Snapshot Full Refresh
262	MDReqID	123	My request ID
1021	MDBookType	1102	Amount view
55	Symbol	EUR/USD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
268	NoMDEntries	6	Number of repeating entries
269	**MDEntryType**	**0**	**A Buy Side Snapshot**
271	MDEntrySize	150	Quantity
276	QuoteCondition	1000	No Market Activity
270	MDEntryPx	0.0	Filler value (should be ignored)
269	**MDEntryType**	**0**	**A Buy Side Snapshot**
271	MDEntrySize	200	Quantity
276	QuoteCondition	1000	No Market Activity
270	MDEntryPx	0.0	Filler value (should be ignored)
269	**MDEntryType**	**0**	**A Buy Side Snapshot**
271	MDEntrySize	250	Quantity
276	QuoteCondition	1000	No Market Activity
270	MDEntryPx	0.0	Filler value (should be ignored)
269	**MDEntryType**	**1**	**A Sell Side Snapshot**
271	MDEntrySize	150	Quantity
276	QuoteCondition	1000	No Market Activity
270	MDEntryPx	0.0	Filler value (should be ignored)
269	MDEntryType	1	A Sell Side Snapshot
271	MDEntrySize	200	Quantity
276	QuoteCondition	1000	No Market Activity
270	MDEntryPx	0.0	Filler value (should be ignored)
269	**MDEntryType**	**1**	**A Sell Side Snapshot**
271	MDEntrySize	250	Quantity
276	QuoteCondition	1000	No Market Activity
270	MDEntryPx	0.0	Filler value (should be ignored)
Trailer			

The resulting Order Book should be empty of prices:

Amount View Amount (in millions) / price	
BID	OFFER
150 / no data	200 / no data
200 / no data	250 / no data
250 / no data	

9.5.2.6 Price Depth View – No Market

When the client subscribes for Price Depth market views and there is no market for the subscribed pair, the Ai Server will send a single entry indicating no market activity for each side of the market.

This message below is in response to a request for the Price Depth view.
Example of “Price Depth view” Snapshot message with no market:

Tag number	Tag name	Value	Description
Header		W	Snapshot Full Refresh
262	MDReqID	123	My request ID
1021	MDBookType	2	Price Depth view
55	Symbol	EUR/USD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
268	NoMDEntries	2	Number of repeating entries
269	**MDEntryType**	**0**	**A Buy Side Snapshot**
276	QuoteCondition	1000	No Market Activity
270	MDEntryPx	0.0	Filler value (should be ignored)
277	TradeCondition	1000	No Market Activity
271	MDEntrySize	0	Filler value (should be ignored)
269	**MDEntryType**	**1**	**A Sell Side Snapshot**
276	QuoteCondition	1000	No Market Activity
270	MDEntryPx	0.0	Filler value (should be ignored)
277	TradeCondition	1000	No Market Activity
271	MDEntrySize	0	Filler value (should be ignored)
	Trailer		

The resulting Order Book should be empty:

Price Depth View Amount (in millions) / price	
BID	OFFER

9.5.2.7 Spread View – No Market

When the client subscribes for **Spread** market views and there is no market for the subscribed pair, the Ai Server will send entries for all subscribed levels for each side of the market.

This message below is in response to a request for three levels of Spread view.
Example of "Spread view" Snapshot message with no market:

Tag number	Tag name	Value	Description
Header		W	Snapshot Full Refresh
262	MDReqID	123	My request ID
1021	MDBookType	1101	Spread View
55	Symbol	EUR/USD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
268	NoMDEntries	6	Number of repeating entries
269	**MDEntryType**	**0**	**A Buy Side Snapshot**
276	QuoteCondition	1000	No Market Activity
270	MDEntryPx	0.0	Price
277	TradeCondition	1000	No Market Activity
271	MDEntrySize	0	Filler value (should be ignored)
269	**MDEntryType**	**0**	**A Buy Side Snapshot**
276	QuoteCondition	1000	No Market Activity
270	MDEntryPx	0.0	Price
277	TradeCondition	1000	No Market Activity
271	MDEntrySize	0	Filler value (should be ignored)
269	**MDEntryType**	**0**	**A Buy Side Snapshot**
276	QuoteCondition	1000	No Market Activity
270	MDEntryPx	0.0	Price
277	TradeCondition	1000	No Market Activity
271	MDEntrySize	0	Filler value (should be ignored)
269	**MDEntryType**	**1**	**A Sell Side Snapshot**
276	QuoteCondition	1000	No Market Activity
270	MDEntryPx	0.0	Price
277	TradeCondition	1000	No Market Activity
271	MDEntrySize	0	Filler value (should be ignored)
269	**MDEntryType**	**1**	**A Sell Side Snapshot**
276	QuoteCondition	1000	No Market Activity
270	MDEntryPx	0.0	Price
277	TradeCondition	1000	No Market Activity

Tag number	Tag name	Value	Description
271	MDEntrySize	0	Filler value (should be ignored)
269	**MDEntryType**	**1**	**A Sell Side Snapshot**
276	QuoteCondition	1000	No Market Activity
270	MDEntryPx	0.0	Price
277	TradeCondition	1000	No Market Activity
271	MDEntrySize	0	Filler value (should be ignored)
Trailer			

The resulting Order Book should be empty:

Price Depth View Amount (in millions) / price	
BID	OFFER

9.5.2.8 Full Amount View – No Market

When the client subscribes for **Full Amount** market views and there is no market for the subscribed pair, the Ai Server will send entries for all subscribed levels for each side of the market.

For the given instrument, the preconfigured amounts at which the market views can be provided are 1, 5, and 10 million for this example.

This message below is in response to a request for three levels of Full Amount view. Example of “Full Amount view” Snapshot message with no market:

Tag number	Tag name	Value	Description
Header		W	Snapshot Full Refresh
262	MDReqID	SUB1!	My request ID
1021	MDBookType	1103	Full Amount View
55	Symbol	USD/CAZ	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
268	NoMDEntries	3	Number of repeating entries
269	**MDEntryType**	**0**	**A Buy Side Snapshot**
271	MDEntrySize	1000000	Quantity
270	MDEntryPx	0.0	Price
276	QuoteCondition	1000	No market activity
269	**MDEntryType**	**0**	**A Buy Side Snapshot**
271	MDEntrySize	5000000	Quantity

Tag number	Tag name	Value	Description
270	MDEntryPx	0.0	Price
276	QuoteCondition	1000	No market activity
269	**MDEntryType**	**0**	**A Buy Side Snapshot**
271	MDEntrySize	10000000	Quantity
270	MDEntryPx	0.0	Price
276	QuoteCondition	1000	No market activity
269	**MDEntryType**	**1**	**A Sell Side Snapshot**
271	MDEntrySize	1000000	Quantity
270	MDEntryPx	0.0	Price
276	QuoteCondition	1000	No market activity
269	**MDEntryType**	**1**	**A Sell Side Snapshot**
271	MDEntrySize	5000000	Quantity
270	MDEntryPx	0.0	Price
276	QuoteCondition	1000	No market activity
269	**MDEntryType**	**1**	**A Sell Side Snapshot**
271	MDEntrySize	10000000	Quantity
270	MDEntryPx	0.0	Price
276	QuoteCondition	1000	No market activity
Trailer			

9.5.3 Market Data Updates – Incremental Refresh messages

9.5.3.1 Price Depth – Adding a price point

Your view of the current state of market (Order Book) being is represented by the following table. Only the buy side of the market will be used for the “incremental refresh” examples.

Price-Depth View (BID) Amount (in millions) / price
2 / 1.22453
2 / 1.22451

The client has requested to receive Price-Depth view of up to “3 levels”.

Adding a Price Point

A new order at 1.22454 for 1 million is added to the market. This price becomes the new Dealable Best and will cause the following incremental refresh message to be sent to the client:

Tag number	Tag name	Value	Description
Header		X	Incremental Refresh (Update)
1021	MDBookType	2	Price Depth
20203	MDLastIncrementalRefresh	1	Last update message
268	NoMDEntries	1	Number of repeating entries
279	MDUpdateAction	0	New
269	MDEntryType	0	Bid
55	Symbol	EUR/USD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
270	MDEntryPx	1.22454	Price
271	MDEntrySize	1	Quantity
Trailer			

The above message creates the resulting Order Book:

Price-Depth View (BID) Amount (in millions) / price
1 / 1.22454
2 / 1.22453
2 / 1.22451

9.5.3.2 Price Depth - Updating a price point

Updating a Price Point

At price point 1.22451, another order of 2 million is added to the market. This will cause the following incremental refresh message to be sent to the client:

Tag number	Tag name	Value	Description
Header		X	Incremental Refresh (Update)
1021	MDBookType	2	Price-Depth
20203	MDLastIncrementalRefresh	1	Last update message
268	NoMDEntries	1	Number of repeating entries
279	MDUpdateAction	1	Change
269	MDEntryType	0	Bid
55	Symbol	EUR/USD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
270	MDEntryPx	1.122451	Price
271	MDEntrySize	4	Quantity
Trailer			

The above message creates the resulting Order Book:

Price-Depth View (BID) Amount (in millions) / price
1 / 1.22454
2 / 1.22453
4 / 1.22451

9.5.3.3 Price Depth – Updating a price point Affecting Bottom Price of Order Book

Adding a Price Point that will delete the bottom price from the Order Book

A new order at 1.22452 for 1 million is added to the book. This will cause the following incremental refresh message to be sent to the client:

Tag number	Tag name	Value	Description
Header		X	Incremental Refresh (Update)
1021	MDBookType	2	Price-Depth
20203	MDLastIncrementalRefresh	1	Last update message
268	NoMDEntries	1	Number of repeating entries
279	MDUpdateAction	0	New
269	MDEntryType	0	Bid
55	Symbol	EUR/USD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
270	MDEntryPx	1.122452	Price
271	MDEntrySize	1	Quantity
Trailer			

The above message creates the resulting Order Book:

Price-Depth View (BID) Amount (in millions) / price
1 / 1.22454
2 / 1.22453
1 / 1.22452

Since the client has elected to receive “depth” of only up to 3 levels, the earlier entry at position 3 corresponding to price point 1.22451 is automatically dropped from the Order Book. The Ai Server application doesn’t send an explicit “delete” update message for that entry. It is the responsibility of the client to remove any entries outside of the requested Order book range.

9.5.3.4 Price Depth – Removing a price point

Removing an Order that deletes a price point from the Order Book

The trader interrupts the order at price point 1.22453. Since there is only one order at that price point, the entire entry is deleted from the book. This will cause the following incremental refresh-update message(s) to be sent to the client:

Tag number	Tag name	Value	Description
Header		X	Incremental Refresh (Update)
1021	MDBookType	2	Price-Depth
20203	MDLastIncrementalRefresh	1	Last update message
268	NoMDEntries	2	Number of repeating entries
279	MDUpdateAction	2	Delete
269	MDEntryType	0	Bid
55	Symbol	EUR/USD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
270	MDEntryPx	1.122453	Price
271	MDEntrySize	2	Quantity
279	MDUpdateAction	0	New
269	MDEntryType	0	Bid
55	Symbol	EUR/USD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
270	MDEntryPx	1.122451	Price
271	MDEntrySize	4	Quantity
Trailer			

With the removal of price-point 1.22453, the entry corresponding to price point 1.22451 is now included into the client elected “depth” range, and the Ai Server will send the corresponding update to the client.

The above message creates the resulting Order Book:

Price-Depth View (BID) Amount (in millions) / price
1 / 1.22454
1 / 1.22452
4 / 1.22451

9.5.3.5 Price Depth - Removing Dealable Best price point

Deleting a Dealable Best entry from the Order Book

When a trade sweeps the Dealable Best price, the Ai Server will send the following incremental refresh message to the client:

Tag number	Tag name	Value	Description
Header		X	Incremental Refresh (Update)
1021	MDBookType	2	Price-Depth
20203	MDLastIncrementalRefresh	1	Last update message
268	NoMDEntries	1	Number of repeating entries
279	MDUpdateAction	2	Delete
269	MDEntryType	0	Bid
55	Symbol	EUR/USD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
270	MDEntryPx	1.122454	Price
271	MDEntrySize	1	Quantity
Trailer			

The above message creates the resulting Order Book:

Price-Depth View (BID) Amount (in millions) / price
1 / 1.22452
4 / 1.22451

There is a new Dealable Best price: 1.122452.

The Ai Server doesn't send updates for the price points that are still in the "depth" range but have changed the "depth" positions. It is the responsibility of the clients to maintain their Order Books.

Additionally, the client will also receive an Incremental Refresh "Trade" message. This message is shown below and may be included with other Incremental Refresh messages:

Tag number	Tag name	Value	Description
Header		X	Incremental Refresh (Update)
1021	MDBookType	2	Price-Depth
20203	MDLastIncrementalRefresh	1	Last update message
268	NoMDEntries	1	Number of repeating entries
279	MDUpdateAction	0	New
269	MDEntryType	2	Trade
5450	MDElementName	11	Paid
55	Symbol	EUR/USD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
270	MDEntryPx	1.122454	Price
5457	PriceTimestamp	20101103-17:41:46.000	Time stamp
Trailer			

9.5.3.6 Amount View – Price Change

Your view of the current state of market (Order Book) for Amount view is represented by the following table. Only the buy side of the market will be used for the “incremental refresh” examples.

For the given instrument, the pre-configured amounts at which the market views can be provided are 50, 100, 150, 200, and 250 million respectively.

Amount View (BID) Amount (in millions) / price
150 / 1.22453
200 / 1.22450
250 / 1.22445

The client has requested to receive Amount View for “depth” levels 3-to-5.

When the price changes for the inventory of 250 million, the Ai Server will send an Incremental Refresh message to the client for that Amount-point. The message will be as shown in the following table:

Tag number	Tag name	Value	Description
Header		X	Incremental Refresh (Update)
1021	MDBookType	1102	Amount view
20203	MDLastIncrementalRefresh	1	Last update message
268	NoMDEntries	1	Number of repeating entries
279	MDUpdateAction	1	Change
269	MDEntryType	0	Bid
55	Symbol	EUR/USD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
270	MDEntryPx	1.122440	Price
271	MDEntrySize	250	Quantity
Trailer			

The above message creates the resulting Order Book:

Amount View (BID) Amount (in millions) / price
150 / 1.22453
200 / 1.22450
250 / 1.22440

9.5.3.7 Amount View – Inventory Removed at a Price Point

When the total available market inventory becomes less than 250 amount level, the Ai Server will send the following Incremental Refresh message to the client.

Tag number	Tag name	Value	Description
Header		X	Incremental Refresh (Update)
1021	MDBookType	1102	Amount view
20203	MDLastIncrementalRefresh	1	Last update message
268	NoMDEntries	1	Number of repeating entries
279	MDUpdateAction	1	Change
269	MDEntryType	0	Bid
55	Symbol	EUR/USD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
276	QuoteCondition	1000	No Market Activity
271	MDEntrySize	250	Quantity
Trailer			

The above message creates the resulting Order Book:

Amount View (BID) Amount (in millions) / price
150 / 1.22453
200 / 1.22450

9.5.3.8 Spread View – New Dealable Best

The structure of Incremental Refresh messages for Spread view is similar to the Incremental Update messages for a Price Depth view.

For the beginning point of the example, the prices in the market are:

BID	OFFER
1 / 1.22453 (not reported top of book)	1 / 1.22459 (not reported top of book)
1 / 1.22452	1 / 1.22462
2 / 1.22443 (not reported level 1)	3 / 1.22469 (not reported level 1)
1 / 1.22433 (not reported level 2)	1 / 1.22479 (not reported level 2)
1 / 1.22423 (reported – level 3)	1 / 1.22489 (reported – level 3)
1 / 1.22419	1 / 1.22490
0 / 1.22413 (reported – level 4)	5 / 1.22499 (reported – level 4)
1 / 1.22410	1 / 1.22505
3 / 1.22403 (reported – level 5)	5 / 1.22509 (reported – level 5)

Your view of the current state of market (Order Book) for Spread view is represented by the following table. Only the buy side of the market will be used for the “incremental refresh” examples.

Spread View Amount (in millions) / price	
BID	OFFER
6 / 1.22423	7 / 1.22489
7 / 1.22413	13 / 1.22599
11 / 1.22403	19 / 1.22509

The client has requested to receive the market view for “depth” levels 3-to-5. For the given instrument, the assumed spread is 1 full pip.

For the above Order Book, the Dealable Best Bid is 1.22453 for 1 million. When a new Order of 1.22454 for 1 million (BID) is placed into the market, it will replace the current Dealable Best BID, and will cause the following Incremental Refresh message to be sent to the client:

Tag number	Tag name	Value	Description
Header		X	Incremental Refresh
1021	MDBookType	1101	Spread View
20203	MDLastIncrementalRefresh	1	Last update message
268	NoMDEntries	3	Number of repeating entries
279	MDUpdateAction	0	New
269	**MDEntryType**	**0**	**Buy Side**
55	Symbol	EUR/USD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement

Tag number	Tag name	Value	Description
270	MDEntryPx	1.22424	Price
271	MDEntrySize	6	Quantity
279	MDUpdateAction	0	New
269	**MDEntryType**	**0**	**Buy Side**
55	Symbol	EUR/USD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
270	MDEntryPx	1.22414	Price
271	MDEntrySize	8	Quantity
279	MDUpdateAction	0	New
269	**MDEntryType**	**0**	**Buy Side**
55	Symbol	EUR/USD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
270	MDEntryPx	1.22404	Price
271	MDEntrySize	9	Quantity
Trailer			

The above message creates the resulting Order Book:

Spread View Amount (in millions) / price	
BID	OFFER
6 / 1.22424	7 / 1.22489
8 / 1.22414	13 / 1.22599
9 / 1.22404	19 / 1.22509

In a Spread view, whenever the Dealable Best changes, all the price points at which the market inventory is shown, change as well. In the Incremental Refresh message, the Ai Server will send all the “new” price points (as per client subscription) with the available aggregate amounts. Ai Server will not send the “delete” updates for the old price points. It is the responsibility of the clients to maintain their Order Books.

9.5.3.9 Spread View – New Dealable Best Dealt

Continuing with the above example, if the order corresponding to the Dealable Best price (BID) 1.22454 gets dealt, this will cause the following Incremental Refresh message to be sent to the client, and the state of the Order Book will be the same as it was before the order activity.

Tag number	Tag name	Value	Description
Header		X	Incremental Refresh
1021	MDBookType	1101	Spread View
20203	MDLastIncrementalRefresh	1	Last update message
268	NoMDEntries	3	Number of repeating entries
279	MDUpdateAction	0	New
269	**MDEntryType**	**0**	**Buy Side**
55	Symbol	EUR/USD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
270	MDEntryPx	1.22423	Price
271	MDEntrySize	6	Quantity
279	MDUpdateAction	0	New
269	**MDEntryType**	**0**	**Buy Side**
55	Symbol	EUR/USD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
270	MDEntryPx	1.22413	Price
271	MDEntrySize	7	Quantity
279	MDUpdateAction	0	New
269	**MDEntryType**	**0**	**Buy Side**
55	Symbol	EUR/USD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
270	MDEntryPx	1.22403	Price
271	MDEntrySize	11	Quantity
Trailer			

The resulting Order Book:

Spread View Amount (in millions) / price	
BID	OFFER
6 / 1.22423	7 / 1.22489
7 / 1.22413	13 / 1.22599
11 / 1.22403	19 / 1.22509

In the Incremental Refresh message, the Ai Server sends updates for all the “new” price points according to the client subscription, but it doesn’t send the “delete” updates for the old price points. It is the responsibility of the clients to maintain their Order Books.

9.5.3.10 Full Amount view – Price Change

For the given instrument, the preconfigured amounts at which the market views can be provided are 1, 5, and 10 million for this example.

Tag number	Tag name	Value	Description
Header		X	Incremental Refresh (Update)
1021	MDBookType	1103	Full Amount view
20203	MDLastIncrementalRefresh	1	Last update message
268	NoMDEntries	2	Number of repeating entries
279	MDUpdateAction	1	Change
269	MDEntryType	0	Bid
55	Symbol	USD/CAZ	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
270	MDEntryPx	1.00121	Price
271	MDEntrySize	1000000	Quantity
279	MDUpdateAction	1	Change
269	MDEntryType	1	Offer
55	Symbol	USD/CAZ	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
270	MDEntryPx	1.00241	Price
271	MDEntrySize	1000000	Quantity
Trailer			

9.5.3.11 Spread view (multiple instruments)

A single Incremental Refresh message may contain updates for multiple subscribed instruments for a particular market view. Multiple MDBookTypes will not be combined in Incremental Refresh messages.

Tag number	Tag name	Value	Description
Header		X	Incremental Refresh
1021	MDBookType	1101	Spread View
20203	MDLastIncrementalRefresh	1	Last update message
268	NoMDEntries	6	Number of repeating entries
279	MDUpdateAction	0	New
269	**MDEntryType**	**0**	**Buy Side**
55	Symbol	EUR/USD	Currency Pair

Tag number	Tag name	Value	Description
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
270	MDEntryPx	1.22423	Price
271	MDEntrySize	6	Quantity
279	MDUpdateAction	0	New
269	**MDEntryType**	**0**	**Buy Side**
55	Symbol	EUR/USD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
270	MDEntryPx	1.22413	Price
271	MDEntrySize	7	Quantity
279	MDUpdateAction	0	New
269	**MDEntryType**	**0**	**Buy Side**
55	Symbol	EUR/USD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
270	MDEntryPx	1.22403	Price
271	MDEntrySize	11	Quantity
279	MDUpdateAction	0	New
269	**MDEntryType**	**0**	**Buy Side**
55	Symbol	USD/CAD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
270	MDEntryPx	1.01670	Price
271	MDEntrySize	5	Quantity
279	MDUpdateAction	0	New
269	**MDEntryType**	**0**	**Buy Side**
55	Symbol	USD/CAD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
270	MDEntryPx	1.01660	Price
271	MDEntrySize	7	Quantity
279	MDUpdateAction	0	New
269	**MDEntryType**	**0**	**Buy Side**
55	Symbol	USD/CAD	Currency Pair
461	CFICode	RCSXXX	FX Spot
63	SettlType	0	Regular Spot Settlement
270	MDEntryPx	1.01650	Price
271	MDEntrySize	10	Quantity
Trailer			

10 Orders

10.1 Order Submit Request

This message allows Ai Clients to submit single-sided orders for a selected currency pair. Ai Clients provide a reference number in tag 11, for each order. The same number must be referenced in tag 41, when the order is amended or interrupted. (This diverges from FIX standards) Customer reference numbers should be unique. Subsequently, the Ai Server will either send an **Order Accepted/Execution Report** or an **Order Rejected/Execution Report** message to the Ai Client.

Orders should not be submitted for an instrument by the Ai client until after receipt of a successful Market Data Subscription response.

For Direct pairs, only buy/sell requests are valid.

For Fixed Date NDF orders, a combination of the four tags identified below are required to uniquely identify the NDF instrument.

For Iceberg orders, the Order Quantity is a total of the Display Quantity plus the implicit hidden amount.

10.1.1 Order Submit Request Message

Order Submit Request Message Format

Order Submit Request Message				
Tag	Tag Name		Reqd	Comments
	Standard Header		Y	MsgType = **D** (New Order Request - Single)
11		ClOrdID	Y	The client must assign a reference ID to all Orders. Reference IDs should be unique to simplify modifying Orders, cancelling Orders and querying Deals, but it is not required. (Customer Reference Number) Valid characters include the printable ASCII character set (32 ≤ decimal value ≥ 126). The maximum length for an Order Reference ID is 40 characters. The character set exclusions are as follows: ! Exclamation Mark decimal 33 * Asterisk decimal 42 , Comma decimal 44 - Hyphen decimal 45 : Colon decimal 58 = Equals Sign decimal 61 [Left Square Bracket decimal 91] Right Square Bracket decimal 93 _ Underscore decimal 95 ` Accent decimal 95 ~ Tilde decimal 126
55	Combination of these four tags define the instrument.	Symbol	Y	**Base/Local** = Instrument symbol. e.g., EUR/USD
461		CFICode	Y	**RCSXXX** = SPOT **FFCNNO** = NDF

Order Submit Request Message				
Tag	Tag Name		Reqd	Comments
63		SettlType	Y	**0** = SPOT **Dx, Wx, Mx, Yx** = NDF, where: **Dx** = FX tenor expression for "days", e.g. "D5", where "x" is any integer > 0 **Mx** = FX tenor expression for "months", e.g. "M3", where "x" is any integer > 0 **Wx** = FX tenor expression for "weeks", e.g. "W13", where "x" is any integer > 0 **Yx** = FX tenor expression for "years", e.g. "Y1", where "x" is any integer > 0 **B** = Fixed Date tenor for Fixed Date NDFs only. The Settlement Date will be provided in tag 64, SettlDate. Noted that for FX the tenors expressed using Dx, Mx, Wx, and Yx values do not denote business days, but calendar days.
64		SettlDate	N	Required if SettlType = **B** This tag will contain the Fixed Date NDF settlement date. The date format is **YYYYMMDD**
54	Combination of these three tags define the type of the order	Side	Y	**1** = Buy (Bid) **2** = Sell (Offer)
40		OrdType	Y	**2** = Limit **Y** = Continuous Matching Order **Z** = Fixing Order
59		TimeInForce	Y	**1** = Good 'til Cancelled (Quote) **3** = Immediate or Cancel (Hit) **4** = Fill or Kill (Full Amount hit for Direct pairs) The buy/sell request will either be filled in its entirety, by a single LP, for the submitted full amount price or it will miss completely. Applicable only for buy/sell Direct pairs. If OrdType= "**Y**" or "**Z**" TimeInForce must=1
336		TradingSessionID	N	Identifier for a Trading Session. A Trading Session spans an extended period of time during which specific types of orders or specific instruments can be submitted. The Trading Session ID is provided in the Trading Session List message. For example: "764" Conditionally required when OrdType = "**Z**", Fixing Order.
1300		MarketSegmentID	N	Identifies the type of order book in which the instrument is traded. For example, "Fixing", "Standard" (default) Conditionally required when OrdType = "**Z**", Fixing Order.

Order Submit Request Message				
Tag	Tag Name		Reqd	Comments
20107		ValuationDateTime	N	Date and time of the Fixing, provided in the Trading Session List message. Conditionally required when OrdType = "**Z**", Fixing Order.
20301		AutoInterrupt	N	The number of pips beyond the EBS Best price, of the opposite side, at which a Continuous Match order will be cancelled by the Broker.
44		Price	N	Price per unit of quantity. The Order price. The price must be formatted with the correct number of decimal places. The price must be included in all orders except when OrdType value equal to "**Y**" or "**Z**". If OrdType= "**Y**" or "**Z**", there can be no Price. A Protocol Violation will be generated if Price is supplied. Refer to the Guide to ICAP Pair Parameters for more information.
38		OrderQty	Y	The amount of the Order. Orders must be greater than or equal to the minSize, less than or equal to the maxSize, and conform to the size increment, or the Order is rejected.
1138		DisplayQty	N	The initial display amount of an iceberg or Dark PD order. For an iceberg order, the **DisplayQty** must be ≥ **icebergMinDisplayQty** for this symbol (Currency Pair), provided on the login response. For a Dark PD order, the **DisplayQty** must be ≥ **darkPDMinDisplayQty** for this pair, provided on the login response.
1084		DisplayMethod	N	**1** = Initial (User requested DisplayQty) **3** = Random If "**1**", the **DisplayQty** of an iceberg order will be replenished for the lesser of the specified **DisplayQty** or the remainder of the order. If "**3**", the **DisplayQty** of an iceberg order will be replenished with a random size. The replenishment amount will range from **icebergMinDisplayQty** through the specified **DisplayQty**. Default is "1".

Order Submit Request Message				
Tag	Tag Name		Reqd	Comments
20112		IcebergHigh RandomTime	N	The maximum amount of elapsed time, in milliseconds, before the **DisplayQty** is replenished. The **IcebergHighRandomTime** must be ≤ **IcebergMaxRandomTime,** provided on the login response. The **IcebergHighRandomTime** must be either zero or a multiple of the **IcebergRandomTimeIncrement,** provided on the login response. Default is "**0**", immediate replenishment.
60		TransactTime	Y	Time of execution/order creation (expressed in UTC (Universal Time Coordinated, also known as "GMT"). Required by the FIX protocol. The Ai Server does not use or validate the contents of this tag.
20109		PriceDiscretion	N	For Market pairs - discretionary offset to the price on the order. Offset is added to a bid indicating the highest price the trader will accept. Offset is subtracted from an offer indicating the lowest price the trader will accept. For either Mid PD or Dark PD orders, the **PriceDiscretion** must **=** one half of the **priceIncrement** which is provided on the login response. This attribute has the same precision as the price.
	StandardTrailer		Y	

10.2 Order Submit Response

Order events notify Ai Clients about the orders that were either accepted or rejected by the Ai Server. Messages for an accepted order will contain an EBS generated Order ID used to track a Deal associated with order. For each order submitted by the Ai Client, the Ai Server will initially send either an **Order Accepted Execution Report** or **Order Rejected Execution Report** message back to Ai Client. For Fixed Date NDFs, if the order was submitted for an instrument that was not provided in the logon response message, the order will be rejected in the Order Submit Response message, with text indicating that the instrument is invalid.

If a Fixed Date NDF instrument expires, all the orders for that instrument will be cancelled. The Order Submit Response message will include text indicating that the instrument has expired.

When a Trading Session closes, all unmatched portions of orders for the Trading Session will be automatically cancelled. The Execution Report will contain an OrdStatus with the value of “4” (cancelled), and an ExecType with the value of “L” (triggered by the system).

Errors encountered during the Ai Server validation of the Order will be identified in the error message id and error message text of the Order Event Message. Please refer to **Appendix** 1 Error and Session Messages for a description of Order related error codes that can be included in the Order Event Message. Once the Order has been rejected, no more Order Event messages will be sent to the client.

If the Order passes all applicable validity tests and is formatted correctly, the Ai Server accepts the Order and forwards it to the Trading System. The client will receive subsequent Order Event Messages, reporting the status of the order, as it changes as a result of activity such as trading or order amendment. If the Trading System does not accept the order or the order is automatically cancelled, the client will receive an Order Event message with a status (OrdStatus) of cancelled (4).

For Hit orders (TimeInForce = 3 or 4) that are completely unfilled, the client will receive an Order Event message with status (OrdStatus) of cancelled (4) and CumQty = zero.

For Fixing orders, clients will receive an Execution Report with an OrdStatus = “8” (rejected), when the Fix date submitted on the order is not the current date of the particular Fixing. The Ai server will reject the order.

For Fixing orders, clients will receive an Order message with an OrdStatus = “0” (new), followed by another Order message with an Ordstatus = “4” (cancelled) when the Fix date submitted on the order is the current date of the particular Fixing, but the Fix is not currently open. The Ai server will accept the order and pass it on to the Broker which will cancel the order.

Execution Reports will notify clients of order activity and Trade Capture Reports will notify clients of deal activity.

10.2.1 Order Submit Response Message

Order Submit Response Message Format

Order Submit Response Message				
Tag		Tag Name	Reqd	Comments
	Standard Header		Y	MsgType = **8** (Execution Report)
11		ClOrdID	Y	Unique identifier for the Order as assigned by the Ai Client (Customer Reference Number) When the system automatically cancels an order, this field will contain "[NA]"
41		OrigClOrdID	Y	Original ClOrdID of the order. Field is provided when the system automatically cancels an order.
39		OrdStatus	Y	**0** = New **2** = Filled **4** = Cancelled **8** = Rejected **Note**: For partially filled Hits, OrdStatus will be 4, for Cancelled (Expired is no longer used)
37		OrderID	Y	Unique identifier for Order as assigned by the EBS Trading System
55	Combination of these four tags define the instrument.	Symbol	Y	Base/Local = Instrument symbol. e.g. EUR/USD
461		CFICode	Y	**RCSXXX** = SPOT **FFCNNO** = NDF
63		SettlType	Y	**0** = SPOT **Dx, Wx, Mx, Yx** = NDF, where: **Dx** = FX tenor expression for "days", e.g. "D5", where "x" is any integer > 0 **Mx** = FX tenor expression for "months", e.g. "M3", where "x" is any integer > 0 **Wx** = FX tenor expression for "weeks", e.g. "W13", where "x" is any integer > 0 **Yx** = FX tenor expression for "years", e.g. "Y1", where "x" is any integer > 0 **B** = Fixed Date tenor for Fixed Date NDFs only. The Settlement Date will be provided in tag 64, SettlDate. Noted that for FX the tenors expressed using Dx, Mx, Wx, and Yx values do not denote business days, but calendar days.
64		SettlDate	N	When SettlType = **B**, this tag will contain the Fixed Date NDF settlement date. The date will be published in YYYYMMDD format
54	Combination of these three tags define the type of the order	Side	Y	**1** = Buy (Bid) **2** = Sell (Offer)
40		OrdType	Y	**2** = Limit – **Y** = Continuous Matching Order **Z** = Fixing Order
59		TimeInForce	Y	**1** = Good 'til Cancelled (Quote) **3** = Immediate or Cancel (Hit) **4** = Fill or Kill (Full Amount trading for Direct pairs)
336		TradingSessionID	N	Identifier for a Trading Session. A Trading Session spans an extended period of time during which specific types of orders or specific instruments can be submitted. Conditionally required when OrdType = "**Z**", Fixing Order.

Order Submit Response Message				
Tag		Tag Name	Reqd	Comments
1300		MarketSegmentID	N	Identifies the type of order book in which the instrument is traded. For example, "**Fixing**" Conditionally required when OrdType = "**Z**", Fixing Order.
20107		ValuationDateTime	N	Fixing publication time - as provided by the Fixing valuation source (tag 20106) in the Trading Session List message. Conditionally required when OrdType = "**Z**", Fixing Order.
20301		AutoInterrupt	N	The number of pips beyond the EBS Best price, of the opposite side, at which a Continuous Match order will be cancelled by the Broker.
44		Price	N	Price per unit of quantity For Continuous Matching orders and Fixing orders, a price will not be provided.
38		OrderQty	Y	Quantity ordered
150		ExecType	Y	**0** = Accepted **4** = Cancelled **5** = Replaced **8** = Rejected **F** = Trade (Partial Fill or Fill) **L** = Cancellation triggered by System. Currently only used for Continuous Match orders with an auto interrupt parameter, and for orders cancelled when a Trading Session closes. Note: For partially filled Hits, ExecType will be "**4**", for Cancelled (Expired is no longer used)
31		LastPx	N	Last Trade Price. This is required when ExecType=F and OrdStatus=2. It will have a value of 0.0, and should be ignored by the Ai Client.
32		LastQty	N	Last Trade Quantity. This is required when ExecType=F and OrdStatus=2. It will have a value of 0, and should be ignored by the Ai Client.
1056		CalculatedCcyLastQty	N	This is required when ExecType=F and OrdStatus=2. It will have a value of 0.0, and should be ignored by the Ai Client.
17		ExecID	Y	Unique identifier of execution message as assigned by EBS Trading System
151		LeavesQty	Y	Quantity open for further execution. This excludes the quantity, for which there are Deals in "pending" state.
14		CumQty	Y	Total Quantity Filled. This excludes the quantity, for which there are Deals in "pending" state. When a hit is completely unfilled, this field will be zero.
1138		DisplayQty	N	The accepted **DisplayQty** of an iceberg or Dark PD order.

Order Submit Response Message				
Tag		Tag Name	Reqd	Comments
1084		DisplayMethod	N	**1** = Initial (Use requested DisplayQty **3** = Random If the **DisplayMethod** = "**1**", the **DisplayQty** of an iceberg order will be replenished with the lesser of the specified **DisplayQty** or the remainder of the order. If the **DisplayMethod =** "**3**", the **DisplayQty** of an iceberg order will be replenished with a random size. The replenishment amount will range from **IcebergMinDisplayQty** through the specified **DisplayQty**.
20112		IcebergHigh RandomTime	N	The maximum amount of elapsed time, in milliseconds, before the **DisplayQty** is replenished.
20109		PriceDiscretion	N	For Market pairs - discretionary offset to the price on the order. Offset is added to a bid indicating the highest price the trader will accept. Offset is subtracted from an offer indicating the lowest price the trader will accept. For either Mid PD or Dark PD orders, the **PriceDiscretion** must **=** one half of the **priceIncrement.** This attribute has the same precision as the price.
58		Text	N	Free format Text String, used to specify the detailed reason for Order Rejection. For more information, refer to Appendix 1 **Error and Session Messages**.
	StandardTrailer		Y	

The Status and Purpose of the **Response** message (**Execution Report**) is defined by the value in tag **39** and **150**.

Note: The Ai Server also sends an **Order Done/Execution Report** message to the Ai Client when an active order gets either completely or partially filled or when it expires (BUY or SELL orders) or in the cases where no further action is expected by the Ai Server.

10.3 Order Amend

Amending an order is a more efficient method to change an order instead of cancelling and replacing the order. The Order Amend message allows Client applications to change both the price and the size, or to change only the price, or to decrease only the size, of an active Order. Changing the price may change the position of the order in the Order Book. Reducing the size, with no price change, will not effect the position of the order in the Order Book. Only Bids and Offers can be amended. Buys or Sells (Hits) cannot be amended.

Increasing the size only, without a price change on a single request, is not allowed.

10.3.1 Order Amend Request

This message allows Ai Clients to modify parameters of an existing order. Both tag 38 (OrderQty) and tag 44 (Price) can be either increased or decreased.

For each Amend order, the Ai Clients must provide a request ID in tag 11, the client reference number of the original order in tag 41 and optionally provide, the EBS assigned reference number of the original order in tag 37. (This diverges from FIX standards) If the client has not used unique client reference numbers when placing orders, all orders that have been submitted with that client reference number will be amended. Subsequently, the Ai Server will either send an **Execution Report** or an **Order Cancel/Replace Reject** message to the Ai Client for each amended order.

A minimum amount of time (Amend Minimum Quote Life) must elapse before a quote can be amended. The same minimum amount of time must elapse between subsequent amends of the order.

Any single amend request that does not change either the size or the price of the order will be rejected.

If multiple amend requests are submitted before the minimum time period elapses, only the most recent price and size (which may be on separate requests) will be consolidated into a single amendment processed at the end of the time period. For example:

Order submitted for 10M @ 1.15

Within the minimum elapsed time, 1st amend request for amount of 20M and price of 1.16
Within the minimum elapsed time, 2nd amend request for amount of 15M and price to 1.17
Within the minimum elapsed time, 3rd amend request for amount only to 12M
At the end of the elapsed time, the effective amend request is for amount of 12M and price of 1.17

If the consolidated amendment does not change either the size or the price of the order, no rejection will be returned to the requestor for the amend requests.

Within the minimum elapsed time, if an order interrupt request is received following an Amend Request, the interrupt request will be processed prior to processing the Amend request. In this situation, the Amend Failed message (Order Cancel/Replace Reject) for the processed Amend will have Message ID, ATI118006, with the text "Amend Request Processed while Order is in incorrect state".

If amend requests results in an Order throughput violation, then that request will be rejected and the targeted order will be cancelled.

When the Ai Server rejects the Order Amend, the client will receive an Order Cancel/Replace Reject message indicating that the submission of the Order Amend has been rejected.

Further details regarding **Amend Minimum Quote Life** are available upon request from your ICAP GSD Representative or ICAP Customer Support.

10.3.1.1 Order Amend Request Message

Order Amend Request Message Format

Order Amend Request Message				
Tag		Tag Name	Reqd	Comments
	Standard Header		Y	MsgType = **G** (Order Cancel/Replace Request (a.k.a. Order Modification Request)
11		ClOrdID	Y	Identifier for the Amend request as assigned by the Ai Client (Request ID), which should be unique. This identifier will be used in the ClOrdID tag of the: - Cancel Reject message if the Amend Order request is rejected - Execution Report in response to the Amend request
37		OrderID	N	Unique identifier for the original Order as assigned by the EBS Trading System. If OrderID and OrigClOrdID are used, OrigClOrdID will be ignored.
41		OrigClOrdID	Y	Original ClOrdID of the original order that is being requested to be replaced/amended by this message. If OrderID and OrigClOrdID are used, OrigClOrdID will be ignored. A non-unique OrigClOrdID will result in the amendment of all orders containing the OrigClOrdID
55	Combination of these four tags define the instrument.	Symbol	Y	Base/Local = Instrument symbol. e.g. EUR/USD
461		CFICode	Y	RCSXXX = SPOT FFCNNO = NDF
63		SettlType	Y	**0** = SPOT **Dx, Wx, Mx, Yx** = NDF, where: **Dx** = FX tenor expression for "days", e.g. "D5", where "x" is any integer > 0 **Mx** = FX tenor expression for "months", e.g. "M3", where "x" is any integer > 0 **Wx** = FX tenor expression for "weeks", e.g. "W13", where "x" is any integer > 0 **Yx** = FX tenor expression for "years", e.g. "Y1", where "x" is any integer > 0 **B** = Fixed Date tenor for Fixed Date NDFs only. The Settlement Date will be provided in tag 64, SettlDate. Noted that for FX the tenors expressed using Dx, Mx, Wx, and Yx values do not denote business days, but calendar days.
64		SettlDate	N	Required if SettlType = "**B**" This tag will contain the Fixed Date NDF settlement date. The date format is YYYYMMDD
54	Combination of these three tags define the type of the order	Side	Y	**1** = Buy (Bid) **2** = Sell (Offer)
40		OrdType	Y	**2** = Limit **Y** = Continuous Matching Order **Z** = Fixing Order
59		TimeInForce	Y	**1** = Good 'til Cancelled (Quote) **3** = Immediate or Cancel (Hit) If OrdType= "**Y**" or "**Z**" TimeInForce must = "**1**" or Protocol Violation

Order Amend Request Message				
Tag		Tag Name	Reqd	Comments
20301		AutoInterrupt	N	The number of pips beyond the EBS Best price, of the opposite side, at which a Continuous Match order will be cancelled by the Broker. This field cannot be changed from its value on the original order. **Any value in this tag will be ignored**.
38		OrderQty	Y	Quantity to which the order is to be increased or reduced. This amount includes partially matched amount. For example: Original size = 10 Done amount = 4 New Amend size = 5 This results in 1 being available for further matching. When amending the order for price only, the original amount or most recently amended amount must also be provided.
44		Price	N	Price to which the order is to be changed. For Continuous Matching orders and Fixing orders, a price can not be specified.
1138		DisplayQty	N	The amount to which the **DisplayQty** of the Order is requested to be changed. For an iceberg order, the **DisplayQty** must be ≥ **icebergMinDisplayQty** and ≤ **icebergMaxHiddenQty** for the symbol (Currency Pair), provided on the login response. For a Dark PD order, the **DisplayQty** must be ≥ **darkPDMinDisplayQty** for the symbol (Currency Pair), provided on the login response.
60		TransactTime	Y	Time of execution/order creation (expressed in UTC (Universal Time Coordinated, also known as "GMT"). Required by the FIX protocol. The Ai Server does not use or validate the contents of this tag.
20109		PriceDiscretion	N	For Market pairs - discretionary offset to the price on the order. Offset is added to a bid indicating the highest price the trader will accept. Offset is subtracted from an offer indicating the lowest price the trader will accept. For either Mid PD or Dark PD orders, the **PriceDiscretion** must **=** one half of the **priceIncrement** which is provided on the login response. This attribute has the same precision as the price.
	StandardTrailer		Y	

10.3.2 Order Amend Response

The Ai server will immediately send an Execution Report, for every amend request with a value of “E” - Pending Replace for tag 150-Execution Type, and the message will contain the data of the state of the order prior to application of the amendment. If the Order Amend Request is formatted correctly and passes all applicable validity tests, the Ai Server accepts the Amend Order and forwards it to the Trading System. If the EBS Trading System accepts the amendment request, the client will then receive another Execution Report message with the value of “5”- Replaced, for

tag 150-Execution Type, providing the changed state of the Order that was amended. Additional Execution Report messages may follow. All Execution Report messages in response to an amend request will contain the client provided request ID in tag 11, the customer reference number of the original order in tag 41, and the EBS generated order id in tag 37.

For successful Order Amend Requests only reducing the amount (no price change), the client will receive an Execution Report with a value of “5” - Replaced for tag 150-Execution Type.

For successful Order Amend Requests changing both the amount and the price, the client will not receive an Execution Report with a value of “5” - Replaced for tag 150-Execution Type, when the requested amount is equal to or less than the current available amount of the order.

The client will not receive an Execution Report canceling an order replaced by an amendment request. If the client submitted an amend request, and subsequently receives notification of a fill which satisfies the amend request, then no separate ExecutionReport will be sent in response to the amend request.

10.3.2.1 Order Amend Response Message – Success/Acknowldgement

Order Amend Response Message Format

Order Amend Response Message				
Tag		Tag Name	Reqd	Comments
	Standard Header		Y	MsgType = **8** (Execution Report)
11		ClOrdID	Y	Unique identifier for the Amend request as assigned by the Ai Client in the ClOrdID tag of the Order Amend Request
41		OrigClOrdID	Y	Original ClOrdID of the order that is being requested to be replaced/amended. (original customer reference number)
39		OrdStatus	Y	Current status of the order **0** = New, no part of the original order has been filled. **1** = Partially Filled. If the amount has been amended, and a portion of the original order has been filled and the amend request is greater than the filled amount and less than the order available amount. **2** = Filled. If the amount has been amended, and a portion of the original order has been filled, and the amend request is equal to or less than the filled amount of the order. **4** = Cancelled. **E** = Pending Replace.
37		OrderID	Y	Unique identifier as assigned by the EBS Trading System
55	Combination of these four tags define the instrument.	Symbol	Y	**Base/Local** = Instrument symbol. e.g. EUR/USD
461		CFICode	Y	**RCSXXX** = SPOT **FFCNNO** = NDF
63		SettlType	Y	**0** = SPOT **Dx, Wx, Mx, Yx** = NDF, where: **Dx** = FX tenor expression for "days", e.g. "D5", where "x" is any integer > 0 **Mx** = FX tenor expression for "months", e.g. "M3", where "x" is any integer > 0 **Wx** = FX tenor expression for "weeks", e.g. "W13", where "x" is any integer > 0 **Yx** = FX tenor expression for "years", e.g. "Y1", where "x" is any integer > 0 **B** = Fixed Date tenor for Fixed Date NDFs only. The Settlement Date will be provided in tag 64, SettlDate. Noted that for FX the tenors expressed using Dx, Mx, Wx, and Yx values do not denote business days, but calendar days.
64		SettlDate	N	When SettlType = "**B**", this tag will contain the Fixed Date NDF settlement date. The date will be published in **YYYYMMDD** format
54	Combination of these three tags define the type of the order	Side	Y	**1** = Buy (Bid) **2** = Sell (Offer)
40		OrdType	Y	**2** = Limit **Y** = Continuous Matching Order **Z** = Fixing Order
59		TimeInForce	Y	**1** = Good 'til Cancelled (Quote) **3** = Immediate or Cancel (Hit)

Order Amend Response Message				
Tag		Tag Name	Reqd	Comments
336		TradingSessionID	N	Identifier for a Trading Session. A Trading Session spans an extended period of time during which specific types of orders or specific instruments can be submitted. Conditionally required when OrdType = "**Z**", Fixing Order,
1300		MarketSegmentID	N	Identifies the type of order book in which the instrument is traded. For example, "Fixing". Conditionally required when OrdType = "**Z**", Fixing Order.
20107		ValuationDateTime	N	Date and time of the Fixing, provided in the Trading Session List message. Conditionally required when OrdType = "**Z**", Fixing Order.
20301		AutoInterrupt	N	The number of pips beyond the EBS Best price, of the opposite side, at which a Continuous Match order will be cancelled by the Broker.
44		Price	N	Price per unit of quantity For Continuous Matching orders and Fixing orders, a price will not be provided.
38		OrderQty	Y	Current quantity. When field 150 = "**E**", this field will contain the current amount of the order prior to the amend request. When field 150 = "**5**", this field will contain the current amount of the order after the application of the amend request.
1138		DisplayQty	N	**DisplayQty** accepted on the OrderAmend request.
150		ExecType	Y	**5** = Replaced **E** = Pending Replace
17		ExecID	Y	Unique identifier of execution message as assigned by EBS Trading System
151		LeavesQty	Y	Quantity open for further execution.
14		CumQty	Y	Total Quantity Filled.
20109		PriceDiscretion	N	For Market pairs - discretionary offset to the price on the order. Offset is added to a bid indicating the highest price the trader will accept. Offset is subtracted from an offer indicating the lowest price the trader will accept. For either Mid PD or Dark PD orders, the **PriceDiscretion** must **=** one half of the **priceIncrement**, which is provided on the login response. This attribute has the same precision as the price.
	StandardTrailer		Y	

10.3.2.2 Order Amend Failed Message

An Order Cancel/Replace Reject response message is sent to the Ai Client if an Order Amend cannot be completed. The message will contain the client provided request ID in tag 11, the customer reference number of the original order in tag 41, and the EBS generated order id in tag 37.

Errors encountered during the Ai server validation of the Order Amend will be identified in the error message id and error message text of the **Order Cancel/Replace Reject** Message. Once the Order Amend has been rejected, no more messages pertaining to the rejected request will be sent to the client.

Order Amend Response Message Format - Failure

Order Amend Response Message - Failure			
Tag	Tag Name	Reqd	Comments
	StandardHeader	Y	MsgType = **9** (Order Cancel/Replace Reject)
11	ClOrdID	Y	Unique identifier assigned by the Ai Client in the ClOrdID tag of the Order Amend Request
41	OrigClOrdID	Y	Original ClOrdID of the order for which the amend request is being rejected
37	OrderID	N	Unique identifier as assigned by the EBS Trading System
39	OrdStatus	Y	Current status of the order **0** = New, no part of the original order has been filled. **1** = Partially Filled **2** = Filled, the original order has been filled. **4** = Cancelled, the original order has been cancelled. **8** = Rejected, the original order cannot be found.
434	CxlRejResponseTo	Y	**2** = Order Cancel/Replace Request
102	CxlRejReason	Y	Code to identify reason for rejection **99** = Other
58	Text	N	Text associated with the rejection reason code For more information, refer to Appendix 1 **Error and Session Messages**.
	StandardTrailer	Y	

10.4 Order Interrupt Request

An **Order Interrupt Request** Message is sent to cancel individual orders. This message allows Ai Clients to interrupt an active quote (bid or offer). Ai Clients must provide a request ID in tag 11 for each Interrupt order, the client reference number of the original order in tag 41 and optionally provide, the EBS assigned reference number of the original order in tag 37. (This diverges from FIX standards) If the client has not used unique ClOrdIDs when placing orders, all orders that have been submitted with that ClOrdID will be cancelled.

If there are pending deals, those deals may still be done following the acceptance of the Quote Interrupt request.

If the order is fulfilled or already cancelled before Ai Server receives this message, the Ai Client will get an **Order Cancel Reject** message. It may have or will also receive an **Order event/Execution Report** with completed Order information, for the impacted order.

The **Minimum Quote Life** (MQL) feature requires a quote to remain in the market for a predetermined amount of time before it can be interrupted. After the MQL time elapses, normal processing of the interrupt request continues.

Further details regarding **Minimum Quote Life** are available upon request from your ICAP GSD Representative or ICAP Customer Support.

10.4.1 Order Interrupt Message

Order Interrupt Request Message Format

Order Interrupt Request Message				
Tag	Tag Name		Reqd	Comments
	Standard Header		Y	MsgType = **F** (Order Cancel Request)
11		ClOrdID	Y	Unique identifier for the Order Interrupt Request, to be assigned by the Ai Client. Note that this identifier will be used in the ClOrdID tag of the Cancel Reject message of the cancel request is rejected.
41		OrigClOrdID	Y	Original ClOrdID of the order that is being requested to be canceled by this message.
55	Combination of these four tags define the instrument.	Symbol	Y	**Base/Local** = Instrument symbol, e.g. EUR/USD FIX Reference: V6P21, V4P40
461		CFICode	Y	**RCSXXX** = SPOT **FFCNNO** = NDF
63		SettlType	Y	**0** = SPOT **Dx, Wx, Mx, Yx** = NDF, where: **Dx** = FX tenor expression for "days", e.g. "D5", where "x" is any integer > 0 **Mx** = FX tenor expression for "months", e.g. "M3", where "x" is any integer > 0 **Wx** = FX tenor expression for "weeks", e.g. "W13", where "x" is any integer > 0 **Yx** = FX tenor expression for "years", e.g. "Y1", where "x" is any integer > 0 **B** = Fixed Date tenor for Fixed Date NDFs only. The Settlement Date will be provided in tag 64, SettlDate. Noted that for FX the tenors expressed using Dx, Mx, Wx, and Yx values do not denote business days, but calendar days.
64		SettlDate	N	Required if SettlType = B This tag will contain the NDF settlement date. The date format is **YYYYMMDD**
54	Combination of these three tags define the type of the order.	Side	Y	**1** = Buy (Bid) **2** = Sell (Offer)
40		OrdType	Y	**2** = Limit **Y** = Continuous Matching Order **Z** = Fixing Order
59		TimeInForce	Y	**1** = Good 'til Cancelled (Quote) **3** = Immediate or Cancel (Hit)
60		TransactTime	Y	Time of execution/order creation (expressed in UTC (Universal Time Coordinated, also known as "GMT"). Required by the FIX protocol. The Ai Server does not use or validate the contents of this tag.
38		OrderQty	Y	Quantity ordered. Required by the FIX protocol. The Ai Server does not use or validate the contents of this tag.
37		OrderID	N	Unique identifier for Order as assigned by the EBS Trading System. If provided by Ai Client, the order is interrupted by OrderID else by OrigClOrdID.
	StandardTrailer		Y	

10.5 Interrupt All Request

An **InterruptAll/Order Mass Cancel Request** message may be initiated by the Ai Client. On receipt of this message, the Ai Server will attempt to interrupt all the active orders, which includes Fixing and Continuous Match as well as standard orders, submitted by the Ai Client in the EBS Trading System. Subsequently, the Ai Server will send the Ai Client the **Execution Report** for each of the active orders that were impacted.

The Interrupt All function is also initiated by the Ai Server if the Client application suddenly logs out, disconnects, losses connection or fails to respond to Heartbeats.

10.5.1 Interrupt All Message

Order Interrupt All Request Message Format

Order Interrupt All Request Message			
Tag	Tag Name	Reqd	Comments
	Standard Header	Y	MsgType = **q** (Order Mass Cancel Request - InterruptAll)
11	ClOrdID	Y	Unique identifier for Order Mass Cancel Request to be assigned by the Ai Client
60	TransactTime	Y	Time of execution/order creation (expressed in UTC (Universal Time Coordinated, also known as "GMT"). Required by the FIX protocol. The Ai Server does not use or validate the contents of this tag.
530	MassCancelRequestType	Y	**7** = Cancel all orders
	StandardTrailer	Y	

Note: FIX Protocol has a provision to acknowledge an Order Mass Cancel Request with an **Order Mass Cancel Report** message. However, it also states that each order affected should be individually acknowledged with an **Order Execution Report** or an **Order Cancel Reject** message. Currently EBS Spot Ai doesn't have a specific acknowledgement message for an Interrupt All (**Order Mass Cancel Request**), but it does acknowledge each affected order with an "order cancelled" message.

10.6 Order Interrupt Response

If the Order Interrupt Request passes all applicable validity tests and is formatted correctly, the Ai Server accepts the Order and forwards it to the Trading System. The client will receive an Order Event Message for each interrupted order, reporting the status of the order as "cancelled" unless the order had been fulfilled, prior to the Trading System receiving the Order Interrupt Request. In that case, the Trading System will ignore the Interrupt, but the client should receive a Deal message with completed deal information.

The Ai Server will send an Order Cancelled / Execution Report to the Ai Client for any active order that was either being interrupted by the Ai Client, or when the Ai Client attempted a logoff while the said order was still active in the market or when the EBS Trading System goes down due to any reason.

Note: If the client lost connectivity or was disconnected, no messages will have been received.

10.6.1 Order Interrupt Response Message

Order Interrupt Response Message Format

Order Interrupt Response Message				
Tag	Tag Name		Reqd	Comments
	Standard Header		Y	MsgType = **8** (Execution Report)
11		ClOrdID	Y	Unique identifier of the Order Interrupt Request, as assigned by the Ai Client. If the Order was Interrupted by the System for whatever reason (e.g. Logoff, System Down, etc.) the tag will show [N/A].
39		OrdStatus	Y	**4** = Cancelled
37		OrderID	Y	Unique identifier for Order as assigned by the EBS Trading System
55	Combination of these four tags define the instrument.	Symbol	Y	**Base/Local** = Instrument symbol e.g. EUR/USD FIX Reference: V6P21, V4P40
461		CFICode	Y	**RCSXXX** = SPOT **FFCNNO** = NDF
63		SettlType	Y	**0** = SPOT **Dx, Wx, Mx, Yx** = NDF, where: **Dx** = FX tenor expression for "days", e.g. "D5", where "x" is any integer > 0 **Mx** = FX tenor expression for "months", e.g. "M3", where "x" is any integer > 0 **Wx** = FX tenor expression for "weeks", e.g. "W13", where "x" is any integer > 0 **Yx** = FX tenor expression for "years", e.g. "Y1", where "x" is any integer > 0 **B** = Fixed Date tenor for Fixed Date NDFs only. The Settlement Date will be provided in tag 64, SettlDate. Noted that for FX the tenors expressed using Dx, Mx, Wx, and Yx values do not denote business days, but calendar days.
64		SettlDate	N	When SettlType = **B**, this tag will contain the Fixed Date NDF settlement date. The date will be published in **YYYYMMDD** format
54	Combination of these three tags define the type of the order	Side	Y	**1** = Buy (Bid) **2** = Sell (Offer)
40		OrdType	Y	**2** = Limit – All orders other than Continuous Matching Order **Y** = Continuous Matching Order **Z** = Fixing Order
59		TimeInForce	Y	**1** = Good 'til Cancelled (Quote) **3** = Immediate or Cancel (Hit)
336		TradingSessionID	N	Identifier for a Trading Session. A Trading Session spans an extended period of time during which specific types of orders or specific instruments can be submitted. Conditionally required when OrdType = "**Z**", Fixing Order,
1300		MarketSegmentID	N	Identifies the type of order book in which the instrument is traded. For example, "**Fixing**". Conditionally required when OrdType = "**Z**", Fixing Order.

Order Interrupt Response Message				
Tag	Tag Name		Reqd	Comments
20107		ValuationDateTime	N	Date and time of the Fixing, provided in the Trading Session List message. Conditionally required when OrdType = “Z”, Fixing Order.
44		Price	N	Price per unit of quantity For Continuous Matching orders and Fixing orders, a price will not be provided.
38		OrderQty	Y	Quantity ordered.
41		OrigClOrdID	Y	Original ClOrdID of the order that is being cancelled by this message
150		ExecType	Y	**4** = Canceled
17		ExecID	Y	Unique identifier of execution message as assigned by EBS Trading System
151		LeavesQty	Y	Quantity open for further execution. This excludes the quantity, for which there are Deals in “pending” state.
14		CumQty	Y	Total quantity filled. This excludes the quantity, for which there are Deals in “pending” state.
58		Text	N	Free format Text String. We can use it to specify the reason for Order Cancellation
	StandardTrailer		Y	

10.6.2 Interrupt Failed Message

An **InterruptFailed** event / **Order Cancel Reject** message is sent to the Ai Client if an **OrderInterrupt** cannot be completed. The Ai Server will return the reason for the failure. This message is only in response to individual orders attempting to be interrupted, not for an InterruptAll. On an InterruptAll, for all the outstanding orders, the Ai Client will receive an Execution Report with the Order status of either “Canceled” or “Filled”.

Order Interrupt Response Message Format - Failure

Order Interrupt Response Message - Failure			
Tag	Tag Name	Reqd	Comments
	StandardHeader	Y	MsgType = **9** (Order Cancel Rejected)
11	ClOrdID	Y	Unique identifier assigned by the Ai Client in the ClOrdID tag of the Order Cancel Request or Order Mass Cancel Request message
41	OrigClOrdID	Y	Original ClOrdID of the order for which the cancel request is being rejected
37	OrderID	Y	Unique identifier for Order as assigned by the EBS Trading System
39	OrdStatus	Y	Identifies current status of order. 8=rejected
102	CxlRejReason	N	Code to identify reason for cancel rejection. 99=Other
434	CxlRejResponseTo	Y	1 = Order Cancel Request
58	Text	N	Free format Text String. We use it to specify the reason for failure For more information, refer to Appendix 1 **Error and Session Messages**.
	StandardTrailer	Y	

11 Deals (Trade Capture)

The Ai Server sends deal transaction details to the Ai Client using **Trade Capture Report** messages. Information provided may vary depending on status and circumstances, meaning that some tags are optional.

Deals are the result of the auto-matching process when the EBS Spot trading system identifies a matching condition between a maker and taker. The deal changes status from the initial match through completion. The Ai Server reports to the Ai Client using **Trade Capture Report** messages for all deal status changes.

The result of the initial matching process (deal in “pending” state) is sent to inform the Ai Client of a potential match. Once the details of the deal are communicated between both parties, the deal is confirmed. The exchange of settlement instructions is the final step in the completion of the transaction for all deals that do not require a fixing rate update. This is reported as a “done” deal to the Ai Client. The Ai Client will receive an additional update for Fixing deals, which will contain the Fixed Rate. The “MatchStatus” tag is used to expose the state of the deal in the **Trade Capture Report**.

Ai Server provides an option for the customer to receive an event message at the time of confirmation. If the customer chooses to receive the confirmation message, the Ai Client application will receive the “**pending**,” “**confirmed**” and “**done**” and conditionally “**fixed**” event messages for each deal transaction. If the customer requests that confirmation messages be excluded, the Ai Server will wait for completion of the deal and only send a **Trade Capture Report** message with a “**done**” MatchStatus after the exchange of the settlement instructions between the parties. This option is controlled by an Ai Client configurable parameter called “SendConfirmedDeals”, as described in the “Logon Request” section. The default value for this parameter is “true”.

The deal amount given in the “**confirmed**”, “**done**”, or “**fixed**” message can be less than the original “**pending**” amount depending on credit relationships between the parties at the time of the transaction.

11.1 Trade Capture Report

The **Trade Capture Report** message is used to report trades between counterparties. For basket deals, the primary deal and all of its components will be reported.

For orders that have been interrupted while deals were pending, the client will receive Trade Capture Reports for the pending deals once they are done.

In the following messages, wherever a Date or a DateTime tag is required by FIX protocol, but Ai Server does not provide a legitimate value, a value of "19111111" (for Date in YYYYMMDD format), and "19111111-11:11:11" (for DateTime in YYYYMMDD-HH:MM:SS format) is sent. Ai Clients should ignore these fictitious values.

The normal sequence of the Trade Capture Report messages for a deal consisting of a single match is:

Deal with status = “Z”, pending
Deal with status = “2”, confirmed (Clients may choose not to receive confirmation notification)
Deal with status = “0”, done
Deal with status = “X”, fixed (Only applicable for Fixed Rate based deals)

The sequence of the Trade Capture Report messages for an unverified deal is:

Deal with status = “Z”, pending
Deal with status = “1”, unverified
Deal with status = “2”, confirmed
Deal with status = “0”, done
Deal with status = “X”, fixed (Only applicable for Fixed Rate based deals)

11.1.1 Trade Capture Report Message

Trade Capture Report Message Format

Trade Capture Report Message			
Tag	Tag Name	Reqd	Comments
	StandardHeader	Y	MsgType = **AE** (Trade Capture Report)
1003	TradeID	N	The Ticket ID number as assigned by EBS
17	ExecID	Y	Originator ID. Exchanged assigned Execution ID (Trade Identifier) Deal Id in Ai.
573	MatchStatus	Y	The status of this trade with respect to matching or comparison. **0** = Done Final status if no fixing of the rate is required. A deal may be done for zero amount if the deal is rejected by the Taker. **1** = Unverified The expected time period for receipt of deal verification from the Taker side has expired. The Trading System will try to recover the deal. **2** = Confirmed All validations on both sides have passed and the deal is binding. The deal may be for zero, if the Taker failed the deal **X** = Fixed. Fix rate has been applied to the fixing deal. (The Fix rate can be zero.) The Fix rate has been applied to the fixing deal. (The Fix rate can be zero.) **Y** = Unknown The Trading System was unable to recover the deal and client should contact Customer Support. **Unknown** is the last deal status sent for a deal that cannot be recovered. **Z** = Pending, awaiting conclusion From the Maker's perspective pending means that all Maker side validations for the deal have passed and the deal is awaiting confirmation from the Taker side. From the Taker's perspective, the deal is actually confirmed and the Confirmation status will immediately follow
55	Symbol	Y	**Base/Local** Denotes the currency pair in CCY1/CCY2 convention.
461	CFICode	Y	**RCSXXX** = FX Spot **FFCNNO** = NDF Only these values are applicable for Ai.

Trade Capture Report Message			
Tag	Tag Name	Reqd	Comments
63	SettlType	Y	**0** = SPOT **Dx, Wx, Mx, Yx** = NDF, where: **Dx** = FX tenor expression for "days", e.g. "D5", where "x" is any integer > 0 **Mx** = FX tenor expression for "months", e.g. "M3", where "x" is any integer > 0 **Wx** = FX tenor expression for "weeks", e.g. "W13", where "x" is any integer > 0 **Yx** = FX tenor expression for "years", e.g. "Y1", where "x" is any integer > 0 **B** = Fixed Date tenor for Fixed Date NDFs only. The Settlement Date will be provided in tag 64, SettlDate. Noted that for FX the tenors expressed using Dx, Mx, Wx, and Yx values do not denote business days, but calendar days.
32	LastQty	Y	Trade Quantity. Deal Size
423	PriceType	N	Valid values are: **100** – Reference Rate **101** – Fixed Rate Present for Fixing Deals.
31	LastPx	Y	Trade Price. When PriceType is equal to "**100**", this tag will contain a Reference Rate. When PriceType is equal to "**101**", this tag will contain a Fixed Rate.
60	TransactTime	N	CompletedDateTime. Time the transaction represented by this Trade Capture Report occurred. Deal Time in Ai. Required when MatchStatus = "**0**", "**2**", or "**X**".
75	TradeDate	Y	This tag is populated with a meaningful date when MatchStatus = "**0**" or "**X**". Otherwise this tag is populated with the fictitious date. Effective Trade Date in **YYYYMMDD** format.
64	SettlDate	N	Takes precedence over SettlType value. For SPOT deals, this represents the "Value Date". For NDF's, it is the actual "Settlement Date". When SettlType = **B**, this tag will contain the Fixed Date NDF settlement date.
541	MaturityDate	N	Fixing date (local market date) – Required for NDFs
9995	SpotValueDateForNDF	N	Spot Value Date of an NDF Deal– Required for NDF's.
336	TradingSessionID	N	Identifier for a Trading Session. A Trading Session spans an extended period of time during which specific types of orders or specific instruments can be submitted. Present for Fixing Deals.
1300	MarketSegmentID	N	Identifies the type of order book in which the instrument is traded. For example, "**Fixing**" Present for Fixing Deals.
20107	ValuationDateTime	N	Fixing publication time - as provided by the Fixing valuation source (tag 20106) in the Trading Session List message. Present for Fixing Deals.

Trade Capture Report Message					
Tag	Tag Name			Reqd	Comments
20108	ValuationPriceTime			N	Time the Fixing Rate is received by ICAP. Present for Fixing Deals when MatchStatus = “X”, Fixed.
442	MultiLegReportingType			N	Indicates whether single deal or basket deal with multiple components. 3 = Basket deal with multiple components
555	NoLegs			N	Number of components of a basket deal
→	600	LegSymbol		N	**Base/Local** Denotes the currency pair of the component, in CCY1/CCY2 convention.
→	608	LegCFICode		N	**RCSXXX** = FX Spot **FFCNNO** = NDF Only these values are applicable for Ai.
→	587	LegSettlType		N	**0** = SPOT **Dx, Wx, Mx, Yx** = NDF, where: Dx = FX tenor expression for "days", e.g. "D5", where "x" is any integer > 0 **Mx** = FX tenor expression for "months", e.g. "M3", where "x" is any integer > 0 **Wx** = FX tenor expression for "weeks", e.g. "W13", where "x" is any integer > 0 **Yx** = FX tenor expression for "years", e.g. "Y1", where "x" is any integer > 0 Noted that for FX the tenors expressed using Dx, Mx, Wx, and Yx values do not denote business days, but calendar days.
→	637	LegLastPx		N	Trade Price of component.
→	687	LegQty		N	Trade Quantity. Deal Size of component
→	990	LegReportID		N	Ticket ID for component
→	654	LegRefID		N	Unique indicator for a specific leg. Deal ID + component number
→	588	LegSettlDate		N	For SPOT component deals, this represents the “Value Date”. For NDF component deals, it is the actual “Settlement Date”.
552	NoSides			Y	Number of sides For Ai, this is always **1**.
→	54	Side		Y	**1** = Buy **2** = Sell Deal Type in Ai.
→	37	OrderID		Y	Order ID in Ai.
→	11	ClOrdID		Y	Customer Order Reference. For amended orders, it is the Customer Order Reference from the original order.
→	453	NoPartyIDs		N	Repeating group below should contain unique combinations of PartyID, PartyIDSource, and PartyRole. For Ai, the possible values are **1**, or **2**. Required when MatchStatus = “**0**”, “**2**” or “**X**”, and LastQty > zero.
→	→	448	PartyID	N	The three character Trader Id or four character Counterparty Deal Code. Required if NoPartyIDs > 0. Required when MatchStatus = “**0**”, “**2**” or “**X**”, and LastQty > zero.
→	→	447	PartyIDSource	N	Used to identify class source of PartyID value (e.g. BIC). Required if PartyID is specified. Required if NoPartyIDs > 0. For Ai, it will always be: **D** = proprietary/custom code Required when MatchStatus = “**0**”, “**2**” or “**X**”, and LastQty > zero.

Trade Capture Report Message					
Tag	Tag Name			Reqd	Comments
→	→	452	PartyRole	N	Identifies the type of PartyID (e.g. Executing Broker). Required if NoPartyIDs > 0. Applicable values for Ai: **17** = Counterparty Deal Code **37** = Counterparty Trader Id Required when MatchStatus = "**0**", "**2**", or "**X**", and LastQty > zero.
→	1057	AggressorIndicator		Y	OurDealerType **Y** = aggressor **N** = passive
	StandardTrailer			Y	

11.1.2 Trade Capture Request (Deal Query)

The Deal Query message can be used to get information about deals executed within a specified time limit (currently two hours from the time the deal is done or for Fixing deals, the time the Fixing Rate is received by ICAP). Please contact Customer Service for deal queries beyond two hours. Queries can be performed based on ClOrdID or OrderID, but for orders that have been amended, it is highly recommended to use ClOrderID to receive all of the deals.

The **Deal Query** feature allows the Ai Client application to retrieve the status and details of deals associated with the active orders in the EBS Spot trading system. In order to use the **Deal Status Query** facility, the Ai Client application must retain one of the IDs associated with the order; ClOrdID or OrderID.

The Ai FIX protocol provides **Trade Capture Report** request, **Trade Capture Report Request Ack**, and **Trade Capture Report** messages. The **Trade Capture Report** messages contain information for the associated deals based on selected criteria (requested by unique customer Reference ID or EBS order ID) within a limited timeframe (2 hours).

For a specific order that resulted in multiple deals, a successful **Trade Capture Report Request** message returns all deal information related to that order as long as one of the deals is within the timeframe allowed. The query returns any "unverified" deal regardless of the time the transaction occurred.

If there is no match to a valid report request, a **report Ack** message returns with the total number of **Trade Reports** set to zero. Valid **Report Requests** returning a total number of trades of zero are not an error and is a normal condition that may be encountered.

Trade Capture Report Requests are limited to retrieving deals up to a specified time limit (2 hours). Attempts to retrieve earlier deals will result in a **Report Ack** message with a **Warning** message indicating the deals were out of the time range. The Ai Server rejects **Trade Capture Report Requests** submitted without qualifiers, with more than one qualifier, with incorrectly formatted references, or with invalid deal or order IDs.

The Ai Server rejects **Trade Capture Report Requests** submitted for an Order Reference ID that is non-unique. The Ai Client application receives a **Trade Capture Report Ack** with a zero in the number of **Trade Reports** tag and showing the reason as a non-unique Reference ID.

The **Trade Capture Report Request** can be used to, request one or more **Trade Capture Reports** based upon selection criteria provided on the **Trade Capture Report Request**. Either OrderID or ClOrdID tags should be specified on the **Trade Capture Report Request** to define the required Trades, but for orders that have been amended, it is highly recommended to use ClOrdID to receive all of the deal.

11.1.2.1 Trade Capture Report Request Message

Trade Capture Report Request Message Format

Trade Capture Report Request Message			
Tag	Tag Name	Reqd	Comments
	StandardHeader	Y	MsgType = AD
568	TradeRequestID	Y	Identifier for the trade request The client must assign a Request ID to all Queries. Reference IDs should be unique, but it is not required. The Reference ID tag may be blank or empty (“”). The server rejects all Queries with an invalid Reference ID attribute or without any Reference ID and treats them as protocol violations. Valid characters include the printable ASCII character set (32 ≤ decimal value ≥ 126). The maximum length for a Query Reference ID is 40 characters. The character set exclusions are as follows: ! Exclamation Mark decimal 33 * Asterisk decimal 42 , Comma decimal 44 - Hyphen decimal 45 : Colon decimal 58 = Equals Sign decimal 61 [Left Square Bracket decimal 91] Right Square Bracket decimal 93 _ Underscore decimal 95 ` Accent decimal 95 ~ Tilde decimal 126
569	TradeRequestType	Y	Type of Trade Capture Report. 1 - Matched trades matching criteria provided on request (ClOrdID and OrderID.) (AI queries always uses 1)
37	OrderID	N	Unique identifier for Order as assigned by the EBS Trading System. For orders that have been amended, it is highly recommended to use ClOrdID to receive all of the deals.
11	ClOrdID	N	Unique identifier for the Order as assigned by the Ai Client (Customer Reference Number)
	StandardTrailer	Y	

11.1.3 Trade Capture Report Response

The **Trade Capture Report** is sent in response to the **Trade Capture Report Request**. The **Trade Capture Report** will include the information outlined in the message sent to report the deal with the inclusion of tags TradeRequestID and LastRptRequested. For basket deals, the primary deal and all of its components will be reported.

In the following message, wherever a Date or a DateTime tag is required by FIX protocol, but Ai Server does not provide a legitimate value, a value of "19111111" (for Date in YYYYMMDD

format), and "19111111-11:11:11" (for DateTime in YYYYMMDD-HH:MM:SS format) is sent. Ai Clients should ignore these fictitious values.

Trade Capture Report Response Message Format

Trade Capture Report Response Message			
Tag	Tag Name	Reqd	Comments
	StandardHeader	Y	MsgType = **AE**
1003	TradeID	Y	OurTicketID
17	ExecID	Y	Exchange assigned Execution ID (OriginatorID). Deal Id in Ai.
568	TradeRequestID	N	Request ID if the Trade Capture Report is in response to a Trade Capture Report Request Presence of this tag with the contents matching a request indicates this is a response to a request.
912	LastRptRequested	N	Indicates if this is the last report in the response to a Trade Capture Report Request **N** = Not last message **Y** = Last message
573	MatchStatus	Y	The status of this trade with respect to matching or comparison. **0** = Compared, matched or affirmed, or done **1** = Uncompared, unmatched, unaffirmed, or unverified **2** = Advisory or alert, or confirmed, awaiting settlement **X** = Fixed. Fix rate has been applied to the fixing deal. (The Fix rate can be zero.) **Y** = Unknown **Z** = Pending, awaiting conclusion
55	Symbol	Y	**Base/Local** - Denotes the currency pair in CCY1/CCY2 convention.
461	CFICode	Y	**RCSXXX** = FX Spot **FFCNNO** = NDF
63	SettlType	Y	**0** = SPOT **Dx, Wx, Mx, Yx** = NDF, where: **Dx** = FX tenor expression for "days", e.g. "D5", where "x" is any integer > 0 **Mx** = FX tenor expression for "months", e.g. "M3", where "x" is any integer > 0 **Wx** = FX tenor expression for "weeks", e.g. "W13", where "x" is any integer > 0 **Yx** = FX tenor expression for "years", e.g. "Y1", where "x" is any integer > 0 **B** = Fixed Date tenor for Fixed Date NDFs only. The Settlement Date will be provided in tag 64, SettlDate. Noted that for FX the tenors expressed using Dx, Mx, Wx, and Yx values do not denote business days, but calendar days.
32	LastQty	Y	Trade Quantity. (Size)
423	PriceType	N	Valid values are: **100** – Reference Rate **101** – Fixed Rate Present for Fixing Deals.
31	LastPx	Y	Trade Price. When **PriceType** is equal to "**100**", this tag will contain a Reference Rate. When **PriceType** is equal to "**101**", this tag will contain a Fixed Rate

Trade Capture Report Response Message				
Tag	Tag Name		Reqd	Comments
60	TransactTime		Y	Time the transaction represented by this Trade Capture Report occurred. Deal Time in Ai. Required when MatchStatus = “0”, “2”, or “X”.
75	TradeDate		Y	This tag is populated with a meaningful date when MatchStatus = “**0**” or ”**X**”. Otherwise this tag is populated with the fictitious date. Effective Trade Date in **YYYYMMDD** format.
64	SettlDate		Y	Takes precedence over SettlType value. For SPOT deals, this represents the “Value Date”. For NDF’s, it is the actual “Settlement Date”. When SettlType = **B**, this tag will contain the Fixed Date NDF settlement date.
541	MaturityDate		N	Fixing date (local market date) – only for NDFs
9995	SpotValueDateForNDF		N	Spot Value Date of an NDF Deal– only for NDF’s.
336	TradingSessionID		N	Identifier for a Trading Session. A Trading Session spans an extended period of time during which specific types of orders or specific instruments can be submitted. Present for Fixing Deals.
1300	MarketSegmentID		N	Identifies the type of order book in which the instrument is traded. For example, “**Fixing**” Present for Fixing Deals.
20107	ValuationDateTime		N	Fixing publication time - as provided by the Fixing valuation source (tag 20106) in the Trading Session List message. Present for Fixing Deals.
20108	ValuationPriceTime		N	Time the Fixing Rate is received by ICAP. Present for Fixing Deals when MatchStatus = “X”, Fixed..
442	MultiLegReportingType		N	Indicates whether single deal or basket deal with multiple components. 3 = Basket deal with multiple components
555	NoLegs		N	Number of components of a basket deal
→	600	LegSymbol	N	**Base/Local** Denotes the currency pair of the component, in CCY1/CCY2 convention.
→	608	LegCFICode	N	**RCSXXX** = FX Spot **FFCNNO** = NDF Only these values are applicable for Ai.
→	587	LegSettlType	N	**0** = SPOT **Dx, Wx, Mx, Yx** = NDF, where: Dx = FX tenor expression for "days", e.g. "D5", where "x" is any integer > 0 **Mx** = FX tenor expression for "months", e.g. "M3", where "x" is any integer > 0 **Wx** = FX tenor expression for "weeks", e.g. "W13", where "x" is any integer > 0 **Yx** = FX tenor expression for "years", e.g. "Y1", where "x" is any integer > 0 Noted that for FX the tenors expressed using Dx, Mx, Wx, and Yx values do not denote business days, but calendar days.
→	637	LegLastPx	N	Trade Price of component.

Trade Capture Report Response Message					
Tag	Tag Name			Reqd	Comments
→	687	LegQty		N	Trade Quantity. Deal Size of component
→	990	LegReportID		N	Ticket ID for component
→	654	LegRefID		N	Unique indicator for a specific leg. Deal ID + component number
→	588	LegSettlDate		N	For SPOT component deals, this represents the "Value Date". For NDF component deals, it is the actual "Settlement Date".
552	NoSides			Y	Number of sides. For Ai, it will always be 1.
→	54	Side		Y	**1** = Buy **2** = Sell Deal Type
→	37	OrderID		Y	Unique identifier for Order as assigned by the EBS Trading System
→	11	ClOrdID		Y	Unique identifier for the Order as assigned by the Ai Client (Customer Reference Number) For amended orders, it is the Customer Order Reference from the original order.
→	453	NoPartyIDs		Y	Repeating group below should contain unique combinations of PartyID, PartyIDSource, and PartyRole. For Ai, the possible values are 1, or 2.
→	→	448	PartyID	Y	Used to identify source of PartyID. Required if PartyIDSource is specified. Required if NoPartyIDs > 0.
→	→	447	PartyIDSource	Y	Used to identify class source of PartyID value (e.g. BIC). Required if PartyID is specified. Required if NoPartyIDs > 0. Applicable value for Ai: **D** = proprietary/custom code
→	→	452	PartyRole	Y	Identifies the type of PartyID (e.g. Executing Broker). Required if NoPartyIDs > 0. **17** = Counterparty Deal Code **37** = Counterparty Trader Id
→	1057	AggressorIndicator		Y	Boolean to express whether aggressor (taker) side of the trade or not. **Y** = aggressor **N** = passive
	StandardTrailer			Y	

11.1.4 Trade Capture Report Ack (Failed Request)

The **Trade Capture Ack** message is used to indicate either that no trades were found that matched the selection criteria specified on the **Trade Capture Report Request**, or that the **Trade Capture Report Request** was invalid due to non-unique order reference criteria or other invalid request criteria.

Note: A **Trade Capture Report Ack** is not required and is not sent if one or more **Trade Capture Reports** will be returned in-band immediately.

11.1.4.1 Trade Capture Report Ack Message

Trade Capture Report Response Message Format - Failure

Trade Capture Report Response Message - Failure			
Tag	Tag Name	Reqd	Comments
	StandardHeader	Y	MsgType = **AR**
568	TradeRequestID	Y	Identifier for the trade request
569	TradeRequestType	Y	Type of Trade Capture Report. **1** - Matched trades matching criteria provided on request (ClOrdID, TradeID, and OrderID.) (AI queries are always 1)
55	Symbol	Y	This will always have a value of "[N/A]".
749	TradeRequestResult	Y	Result of Trade Request 4000+ Reserved and available for bi-laterally agreed upon user-defined values. Applicable values for Ai: **0** = Successful (default) **99** = unsupported request: e.g. non-unique order reference ID Set to "0" for successful query request or "99" for unsupported request: e.g. non-unique order reference ID. Explanation provided in text tag (58).
750	TradeRequestStatus	Y	Status of Trade Request. **0** = Accepted **2** = Rejected (Set to 0 for successful query request or 2 for non-unique order reference ID)
58	Text	N	Used to specify the reason for a query failure For more information, refer to Appendix 1 **Error and Session Messages**.
	StandardTrailer	Y	

12 Session

The Ai Server sends **Session** event messages to notify Ai Clients of non-fatal session conditions, including trading system status changes, credit warnings, Trade Date, and Value Date changes and opening and closing of Trading Sessions.

12.1 Trading Session Status

The **Trading Session Status** Message provides information on the status of the market. With the move to multiple sessions occurring for a given trading party (morning and evening sessions for instance) there is a need to be able to provide information on what product is trading on what market.

The **Trading Session Status** can provide an optional repeating group of securities that are available for trading during that session.

Trading Session Status messages for non specific market segments will be sent with a **MarketSegmentID** value of "**Standard**". Only the **Trade Session Status** messages pertaining to opening or closing of a Fix session will be sent with a **MarketSegmentID** of "**Fixing**".

12.1.1 Trading Session Status Message

Trading Session Status Message Format

Trading Session Status Message			
Tag	Tag Name	Reqd	Comments
	StandardHeader	Y	MsgType = **h** (lowercase)
336	TradingSessionID	Y	Identifier for Trading Session.
1300	MarketSegmentID	Y	Identifies the type of order book in which the instrument is traded. Valid values are: "**Fixing**" "**Standard**".
340	TradSesStatus	Y	State of the trading session. **2** = Open **3** = Closed **1000** = Credit Available **1001** = Credit Low **1002** = Credit Exhausted **1003** = EBS Up **1004** = EBS Down **1006** = Trading Day Update **1007** = Value Date Update **1008** = Trade Date Update
75	TradeDate	N	Indicates date of trade referenced in this message in **YYYYMMDD** format. (expressed in local time at place of trade). This tag is required whenever the TradSesStatus is equal to "1006", Trading Day Update and will indicate the new effective Trade Date.
55	Symbol	N	**Base/Local** Denotes the currency pair in CCY1/CCY2 convention. This tag is required whenever the TradSesStatus tag is equal to: **1008** - Trade Date Update **1007** - Value Date Update
461	CFICode	N	RCSXXX = FX Spot FFCNNO = NDF

Trading Session Status Message			
Tag	Tag Name	Reqd	Comments
63	SettlType	N	**0** = Regular FX Spot settlement (T+1 or T+2 depending on currency) **1** = Cash (TOD / T+0) **2** = Next Day (TOM / T+1) **6** = Future **B** = Broken date - for FX expressing non-standard tenor, SettlDate (64) must be specified **C** = FX Spot Next settlement (Spot+1, aka next day) **Dx** = NDF tenor expression for "days", e.g. "D5", where "x" is any integer > 0 **Mx** = FX tenor expression for "months", e.g. "M3", where "x" is any integer > 0 **Wx** = FX tenor expression for "weeks", e.g. "W13", where "x" is any integer > 0 **Yx** = FX tenor expression for "years", e.g. "Y1", where "x" is any integer > 0 **B** = Fixed Date tenor for Fixed Date NDFs only. The Settlement Date will be provided in tag 64, SettlDate. Noted that for FX the tenors expressed using Dx, Mx, Wx, and Yx values do not denote business days, but calendar days. This tag is required whenever the TradSesStatus tag is equal to: **1008** - Trade Date Update **1007** - Value Date Update
64	SettlDate	N	When the TradSesStatus tag is equal to 1007: Spot pair - value date NDF – settlement date When the TradSesStatus tag is equal to 1008 Fixed Date NDFs only – settlement date **1007** - Value Date Update **1008** – Trade Date Update
541	MaturityDate	N	Fixing date (local market date) – only for NDFs This tag is required whenever the TradSesStatus tag is equal to: **1007** - Value Date Update
9995	SpotValueDateForNDF	N	Spot value date for NDF only This tag is required whenever the TradSesStatus tag is equal to: **1007** - Value Date Update.
58	Text	N	Description of warning message – credit and system state warning messages.
20107	ValuationDateTime	N	Fixing publication time - as provided by the Fixing valuation source (tag 20106) in the Trading Session List message.. This tag is required whenever the TradSesStatus tag is equal to: **2** – Open **3** - Closed
	StandardTrailer	Y	

12.2 Trading System Status Change

If the EBS Spot trading system becomes unavailable, it sends a notification to the Ai Client application. When this condition occurs, the Ai session remains active and connected. The EBS Spot trading system interrupts any outstanding orders. The trading system rejects new orders until it is up and running again. The Ai Server automatically sends the “EBSUp” **Trading Session Status** message to an active session when trading resumes.

If the EBS Spot trading system is unavailable when an Ai Client initiates a new session, the authentication and logon will process normally. The Ai Server sends an “EBSDown” **Trading Session Status** message to the Ai Client application indicating that EBS trading is down. The trading system resumes processing orders when it is back to normal and the Ai Client application receives an “EBSUp” **Trading Session Status** message.

There may be a need for the Ai Client to end the Ai session and restart later depending on the duration of the condition.

12.2.1 Spot Status Change Example: EBS Down

Spot Status Change	
Standard Header	
35=h	Message Type
336=<session ID>	TradingSessionID
340=1004	EBS Down
58=EBS Down	Description
StandardTrailer	

12.3 Credit Warnings

Similarly, in situations of depleted or low credit, the Ai Server sends a **Trading Session Status** message to the Ai Client. The Ai Client should contact their EBS TFA to adjust credit manually during the trading session. If the credit is adjusted during the active Ai session, the Ai Server sends a **Trading Session Status** message to the Ai Client indicating credit is now available. Automatic credit replenishments occur on a daily basis at end of day.

Depending on the credit condition and relationships with other parties, the lack of credit may affect deal transactions and market views.

Note: For Prime Customers, the Ai Server does not send a **Trading Session Status** message for credit warnings. The Ai Client application is notified of order rejection based on insufficient credit.

12.3.1 Credit Warning Example

Credit Warning	
Standard Header	
35=h	Message Type
336=<session ID>	TradingSessionID
340=1001	Credit Low
58=Credit Low	Description
StandardTrailer	

Note: Only for Ai Bank floors, not PTCs

12.4 Date Updates

Trading day in the EBS Spot trading system ends at 5:00 pm New York time (1700 hours). This occurs automatically within the system worldwide. At this time, standard floor counterparty credit limits are replenished, internal transaction data capture occurs and the trade date changes to the next business trading date.

Some currencies do not adhere to the Global trade date change (Trade Date Rollover) such as the New Zealand Dollar. If the Ai Client trades in these currencies, the Ai Server can be configured to send individual trade date change messages for each currency in addition to the Global message.

In addition to the trading date, currency pair settlements change at rollover time. Most currency pairs follow the 5:00 pm rollover time, but a few may have a different rollover time.

The Ai client application receives notification and should handle any changes in these values at any time.

12.4.1 Global Trade Date Change Example

When the broker detects a trading day update, it sends a message to each connected workstation. The currently active Ai Client application receives a **Trading Session Status** message with the updated trade date.

Global Trade Date Change	
Standard Header	
35=h	Message Type
336=<session ID>	TradingSessionID
340=1006	Trading Day Update
75=<YYYYMMDD>	TradeDate
58=Trading Day Update	Description
StandardTrailer	

Note: If the Unique End-of-Day parameter is enabled, the Ai Client application will receive a trade date change message for each currency, as well as the Global trade date change.

12.4.2 Individual Trade Date Change Example

Trading Date Rollover for a currency pair occurs only during active session, once per trading day per currency pair, only if Non-Standard End-of-Day parameter is enabled. But a Trading Date update can occur any time during a day, if the Trading Date has been manually changed.

Individual Trade Date change	
Standard Header	
35=h	Message Type
336=<session ID>	TradingSessionID
340=1008	Trade Date Update
75=<YYYYMMDD>	TradeDate
55=<USD/JPY>	Symbol
461=<RSCXXX>	CFICode
63=<C>	SettlType
64=<YYYYMMDD>	SettlDate –Settlement date for Fixed Date NDFs only
58=Trade Date Change	Description
StandardTrailer	

12.4.3 Value Date Change

Value dates, as described in the “EBS Dealing Rules,” are for transaction settlement dates based on trading business days with recognition of international holidays.

At the start of an Ai trading session, all dealable currency pairs and their current value dates are returned to the Ai Client in the **ApplicationStartup** response message.

When the trading day rolls over at end of day, value dates may change. The Ai Client receives a **Trading Session Status** message for each currency pair with the new value date.

Value dates may also change any time during a day, if dates have been manually changed.

For Spot pairs, field 64 will contain the updated date.

For NDF pairs, fields 64, 541, and 9995 will contain the updated dates.

Value Date Change	
Standard Header	
35=h	Message Type
336=<session ID>	TradingSessionID
340=1007	Value Date Update
55=<USD/JPY>	Symbol
461=<RSCXXX>	CFICode
63=<C>	SettlType
64=<YYYYMMDD>	SettlDate – For Spot pair, contains the spot value date. For NDF pair, contains settlement date
541=<YYYYMMDD>	MaturityDate – NDF only - Fixing date
9995=<YYYYMMDD>	SpotValueDateForNDF– SPOT value date for NDFs only
58=Value Date Change	Description
StandardTrailer	

Appendix 1 Error and Session Messages

The following table includes all Ai generated Error and Session messages and their IDs. Some Error messages are simply wrappers for Spot system messages, which are too numerous to list, but they will always be delivered using one of the ATI ID numbers.

Message ID	Description	Resolution
	Main Processing	
ATI100901	Client protocol error	Client must correct the format of the FIX message and logon again.
EBS040101	Protocol Violation The error can be received in response to any message that is improperly formatted, or where required attributes or elements are either blank or completely missing. Exact cause of the error is included in the body of the message. The session is terminated and the client is disconnected.	Client must correct the errors of the FIX message and logon again.
	Signon	
ATI001119	Dealcode not configured	The Dealcode used in the Logon is not configured on this system. Verify the Dealcode and retry the Logon.
ATI001120	Trader not configured Trader is not configured for the Ai instance.	This error will only be received by the client when accessing an Ai instance that supports multiple traders. The Trader Id used in the Logon is not configured on Ai instance. Verify the Trader Id and retry the Logon.
ATI1010025	Invalid dealcode provided at login: [%]	Client must correct the dealcode and logon again.
ATI114004	Order Throughput:Instance Capacity Exceeded. Available=%;Instance=%;Requested=%.	Contact IEB to purchase additional capacity.
ATI114005	Order Throughput:DealCode Capacity Exceeded. Available=%;DealCode=%;Requested=%.	Reduce the Order Throughput and logon again.
ATI200016	Protocol error, wrong version: %.	Verify that The correct Ai FIX version is used in the Logon message.
ATI200028	Client Initiated Signoff	Normal response to client Logoff request.
ATI300009	%	Verify that the password used for this account is the correct one, or the Trader ID used in the Logon does not exist on the system. Verify the Password and/or the Trader ID and retry the Logon.
ATI300016	Invalid clientType.	ClientType did not contain one of the configured values. Correct the ClientType value and retry the Login.
ATI300017	Invalid aggregationProvider.	AggregationProvider exceeds a length of 75 characters. Correct the AggregationProvider value and retry the Login.
ATI300201	User already signed on, requesting other session cancellation!	The client must send a Cancel Other Session message to close the existing session and open a new one. Although the Logon fails, it remains in pending state and will continue after the client sends a Cancel Other Session message, as described in the Cancel Other Session section. An alternative solution is to disconnect and logon again with the AutoCancelDuplSession parameter set to true.
ATI300202	Default password used to Logon,	Send a Password Change message with a new Password. The

Message ID	Description	Resolution
	password change required!	Logon process remains in pending state and will continue after a successful password change. Refer to the Change Password section for more information.
ATI300203	Password expired, password change required!	Send a Password Change message with a new Password.
ATI300211	%! Invalid New Password. The Old Password included in the message was not the correct password for the account.	The password did not pass minimum security requirements as to length and composition. Verify the password and resend the Password Change request.
Subscription		
ATI100910	Invalid currency pair %	Verify that the Instrument ID used in this request was included in the Logon response message received from the Ai Server. Only Instrument IDs in the Logon response are active and can be used. Contact the Trading Floor Administrator to verify the entitlement for that currency pair.
ATI100915	Invalid subscription parameters %	Correct the invalid or missing Subscription parameters and resubmit the Subscribe message.
ATI100916	Invalid /Malformed Market Data Request message. RequestId: [%]	Correct the invalid information and resubmit the Subscribe request.
ATI100917	Invalid Currency Pair information in Market Data Request message. RequestId: [%]	Correct the invalid currency pair information and resubmit the Subscribe request.
Order Checks		
ATI111001	Amount value(%) is invalid!	Most currency pairs use an Order amount increment of 1000000. Verify that the amount of the Order adheres.
ATI111002 PD Amount value(%) is invalid!	Price discretion amount (displayQty) on the order is invalid.	Resubmit the Order with the correct price discretion amount.
ATI112002	Price value(%) is invalid!	Resubmit the order with the correct price.
ATI112004	Price not allowed for Fixing Order	Remove the price and resubmit the order.
ATI112005 Price Discretion value(%) is invalid!	PriceDiscretion value(%) is invalid!	If the instrument is not enabled for price discretion, remove the price discretion range and resubmit the order. If the price discretion range is larger than the maximum provided on the login response, reduce the price discretion range and resubmit the order. If price discretion range is on the order, but the order is less than the PD minimum order quantity, remove the price discretion range and resubmit the order.
ATI112006	Price Discretion not allowed for Continuous Match order	Remove the price discretion range and resubmit the Continuous match order.
ATI112007	Price Discretion not allowed for Fixing order	Remove the price discretion range and resubmit the Fixing order.
ATI112021	Fixing order with invalid Fix ID or Date: % The Ai server is unaware of an open Fixing and will not send the message on to the Broker.	Correct the Fix ID or the Fix date and resubmit the order.
ATI112022	Fix % not valid for pair %	The currency pair submitted on the order is not part of the submitted Fix.
ATI113000	Client not subscribed for instrument% that has Id=%!	Subscribe to the currency pair and resubmit the order.

Message ID	Description	Resolution
ATI113001	Invalid instrument %!	Re-submit the Order with the correct Instrument ID. For Fixed Date NDFs, the instrument was not provided in the logon response. Logoff and logon for current set of Fixed Date NDFs.
ATI113003	Invalid Large Difference % for price %!	Resubmit the order with the correct price or disable the Large Difference Check parameter. (see Logon section).
ATI113005	Dynamic Price(%) Check Failed! Dealable = %	Resubmit the order with a proper price, i.e., bid prices cannot exceed dealable best Offer and vice-versa, or disable the Price Check parameter (see Logon section).
ATI113007	Dynamic Price(%) Check: Widespread(%) Check Failed!	Re-submit the Order with the corrected price, or disable the Wide Spread Check parameter (see Logon section).
ATI113009	Order price(%) exceeds xPips(%) of Dealable(%)!	Resubmit the order with a price closer to the current market.
ATI300014	Iceberg, Full Amount, MidPD and DarkPD enablement validation	Order cannot be resubmitted until floor is enabled for the feature.
ATI114001	Order: Throughput violation, weight %	The client must reduce the frequency of Order Submit/Amend requests. The client can also wait a second or two and retry the Order Submit/Amend requests. Some orders/amends may be partially weighted, so the weight factor will be within the message. Currently Amend requests are weighted less than Order Submit requests.
ATI114002	Order: Maximum number of active orders exceeded	Interrupt an active order or wait for an Order to complete before resubmitting new ones.
ATI115051	Order Type % not permitted.Order Reference: %. Instrument: %. DealCode: % Quote Submits or Hit Submits have been prohibited for currency pair in the order.	Contact IEB to enable Quote Submit orders.
ATI115052	DealCode % is not enabled for Continuous Matching.Order Reference: %. Instrument: % The floor is not enabled for Continuous Matching orders.	Contact ICAP Customer Support if the floor should be enabled to submit Continuous Matching orders.
ATI115053	Invalid Order Type % for % Order. Order Reference: %. Instrument: %. DealCode: % The order contains an invalid combination of ordType and TimeIn Force. Continuous Matching order must have order Type = “Y” combined with TimeInForce = ”1” . Price Discretion order must have order Type = “Bid” or “Offer”	Correct either the order Type or Time In Force and resubmit the order.
ATI115054	There is no Dealable Best price available for the currency pair.	Resubmit the order when a Dealable Best price is available.
ATI115055	The auto interrupt pips is outside of the configured range of valid values.	Correct the auto interrupt pips value to be within the configured range, and resubmit the order.
ATI115056	DealCode% is not enabled for Fixing. Order Reference: %. Instrument: %.	Contact ICAP Customer Support to enable deal code.
ATI115057	%. Order Reference: %. Instrument:% DealCode: %	The reason for the failure is provided in the message, so the action depends upon the reason

Message ID	Description	Resolution
ATI115058	Full amount trading is not valid.	Full Amount order cannot be submitted until Full Amount trading is enabled.
ATI115061	Fix order submit, fix id % not found.	Correct the Fix ID and resubmit the order.
ATI115062	Fix id %, submit date not match: % vs %.	Correct either the Fix ID or the Fix date and resubmit the order.
ATI117000	Trading is Disabled for Market! The particular Ai Server is not configured for Market trading.	Log in to an Ai Server enabled for Market trading. Contact ICAP Customer Support if only a single Server exists.
ATI117001	Trading is Disabled for Direct! The particular Ai Server is not configured for Direct trading.	Log in to an Ai Server enabled for Direct trading. Contact ICAP Customer Support if only a single Server exists.
ATI300008	Order cancelled (%) An Order is Cancelled by the system for a number of reasons including: the trading system is down (all Orders are cancelled), or if a Deal cannot be verified and goes into recovery and the Order associated with it is cancelled.	Re-Submit the Order when the system is back up and running. The system will try to recover unverified Deals. If the Deal status changes to **verified**, no action is required since the Deal is done. If the Deal status changes to **unknown**, the Deal cannot be recovered (there is no Deal), and the client should contact Customer Support to identify the status of the deal. For Fixed Date NDF, no action is required. Order has been cancelled. For Fix orders, no action is required. Order has been cancelled.
Order Amend Check		
ATI111001	Amount value(%) is invalid!	Most currency pairs use an Order amount increment of 1000000. Verify that the amount of the Order adheres.
ATI112002	Price value(%) is invalid The supplied price does not conform to the price format rules specified for a currency pair.	Resubmit the Order Amend with the correct price.
ATI112003	Price is not allowed when amending a Continuous Match order.	Remove the price and resubmit the Amend request.
ATI112004	Price not allowed for Fixing Order	Remove the price and resubmit the Amend request.
ATI112006	Price Discretion not allowed for Continuous Match order	Remove the price discretion range and resubmit the Continuous match order.
ATI112007	Price Discretion not allowed for Fixing order	Remove the price discretion range and resubmit the Fixing order.
ATI118004	Wrong Order type for Amend Request: %.Order Id %. Amend Amount: % Only bids and offers can be amended	Order types not available for size amendment cannot be amended.
ATI118006	Order Amend Failed. Order Id %. Amend Amount: %. ShownAmount: % PriceDiscretion: % AtiPDOrderType:% Reason: %	The reason for the failure is provided in the message, so the action depends upon the reason.
ATI118007	Amend Request with no change: Order Id %. Amount: % @ % ShownAmount: % PriceDiscretion: %	The price or size specified in the Amend Request must be different from the most recently accepted Amend Request. Change either price or size or no action to be taken.
ATI118008	Order Amend Failed. Order Id %. Reason: %	The reason for the failure is provided in the message, so the action depends upon the reason.
ATI118009	The order amend has failed and the reason for the failure is provided in the message.	The reason for the failure is provided in the message, so the action depends upon the reason
ATI118010	Order not found.	Non-existent Orders cannot be amended
ATI118011	Order Amend Failed. Order Id %. Amend	The reason for the failure is provided in the message, so the

Message ID	Description	Resolution
	%@%. ShownAmount: %. PriceDiscretion: %. AtiPDOrderType: % Reason: %	action depends upon the reason.
ATI118102	Size increase with no price change.	Cancel the existing order and resubmit a new order with the increased amount.
Interrupt Failure		
ATI118001	Order not found.	Non-existent Orders cannot be interrupted.
ATI118002	Wrong type for interrupt: %.	Only Bid and Offer Orders can be interrupted. Client must change the order type for the interrupt.
ATI118003	Order is not active	Only orders in active state can be interrupted. Completed and Cancelled Orders cannot be Interrupted.
Deal Query		
ATI100901	Client protocol error The Request message was formatted incorrectly. The session is terminated and the client is disconnected.	Client must correct the format of the FIX message and logon again.
ATI119111	Query combination is not supported.	Restructure the query and re-submit.
ATI119114	ID value invalid for query.	Re-submit using a valid Query Reference ID.
ATI119115	Requested data exceeds % hour limit.	Submit Queries that relate only to Deals executed within the allowed time limit
ATI119117	Query for non-unique reference is not supported.	Re-submit the Query using the Order ID.
ATI119118	Query aborted [%].	
ATI119119	User must be signed on for query.	Client must Logon.
ATI119120	Query by Deal_Id is not supported.	Re-submit the Query using either OrderID or ClOrdID.
Communication		
ATI100903	Connection to EBS Trading System lost.	The Ai Server lost connection to the Trading System. The client should try to re-connect. If unable to re-connect after several tries, contact ICAP Customer Support.
ATI200015	Protocol error, event in wrong state: %.	
ATI200020	Socket closed [%].	
ATI200021	Exception on socket [%].	
ATI200050	Stale connection detected on socket [%].	
ATI200051	Dead connection detected on socket [%].	
ATI200052	Slow send connection detected on socket [%].	
ATI200053	Detected a blocked send on client connection. Closing socket [%].	
ATI200061	Caused by Stale Socket Connection	
ATI200071	Socket connection closed by the client.	
ATI200072	Socket connection closed by the server.	
ATI200073	Socket connection accepted from %.	
ATI200110	Protocol error, unsupported protocol version: %	Correct Ai Protocol version and login again.
ATI300002	There was a communications error within the Trading System. The text included in the error message will give an indication of the severity of the problem.	Wait a while and try to re-connect and logon again. If the problem continues contact Customer Support.

Message ID	Description	Resolution
	Session	
ATI300101	Trading system is up	Client can resume trading.
ATI300102	Trading system is down	Client must wait for the “Trading System is up” message. As opposed to the ATI100903 message (under Communication) the connection is still active and client is still logged in.
ATI300103	Credit is now available. Credit Group: %, Trader Floor Id: %	Client can resume trading.
ATI300104	Credit has been exhausted. Credit Group: %, Trader Floor Id: %	Client must inform TFA of condition. Credit is replenished next trading day, or adjusted by TFA.
ATI300105	Credit is low. Credit Group: %, Trader Floor Id: %	Client must inform TFA of condition. Credit is replenished next trading day, or adjusted by TFA.
ATI300106	Unknown	Contact Customer Support.
ATI300108	Trade Date Changed A new trading day has begun.	No Action
ATI300109	Value Date Changed Notification that the Value Date for a particular currency pair has changed.	No Action
ATI300110	Counterparty Credit Netting is now available. Grantee Id: %, Reportable Grantee Id: %, Trading Floor Id: %	Credit is available, Client can resume trading.
ATI300111	Counterparty Credit Netting has been exhausted. Grantee Id: %, Reportable Grantee Id: %, Trading Floor Id: %	Credit has been exhausted. Credit is replenished next trading day, or adjusted by TFA.
ATI300112	Counterparty Credit Netting is low. Grantee Id: %, Reportable Grantee Id: %, Trading Floor Id: %	Credit is low. Credit is replenished next trading day, or adjusted by TFA.
ATI300113	Date changed. Fix Id: %, Fix Name: %, Fix Date: %, Fix Time: %.	Once trading is open for the Fix, the client must use the updated Fix information for order submissions.
ATI300114	Trading Session open. Fix Id: %, Fix Name: %, Fix Date: %, Fix Time: %.	Client can begin trading instruments available in the Trading Session.
ATI300115	Trading Session closed. Fix Id: %, Fix Name: %, Fix Date: %, Fix Time: %.	Client can no longer trade instruments available in the Trading Session.

Comments and Feedback

We want to know what you think about the user documentation provided here. If you encounter a problem that you believe was the result of following instructions or performing the procedures provided in this document, please tell us about it. Or, if you feel that there are additional topics that should be covered, send us a note.

We welcome any comments and suggestions you have about format, organization, or usability of this document and about other operations documents from EBS®™. You can send these types of comments to the following email address:

FXUserDocs@ebs.com

Please include the following information along with your comments:

- The title of the document and its date with version number – You can find this information inside the front cover.
- Section titles and page numbers for the information that is the subject of your comment

Contact Information

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For Customer Support:

Country	Freephone	Direct Dial		Country	Freephone	Direct Dial
Australia	1800121312	+ 44 (0) 20 7029 9344		Luxembourg	80022939	+ 44 (0) 20 7029 9372
Austria	0800291749	+ 44 (0) 20 7029 9345		Malaysia	1800802912	+ 44 (0) 20 7029 9373
Bahrain	800 00 375	+ 44 (0) 20 7029 9346		Mexico	0018666391907	+ 44 (0) 20 7029 9374
Barbados	18005340082	+ 44 (0) 20 7029 9347		Monaco	N/A	+ 44 (0) 20 7029 9375
Belgium	080010469	+ 44 (0) 20 7029 9348		Netherlands	08000224174	+ 44 (0) 20 7029 9376
Bermuda	18006230166	+ 44 (0) 20 7029 9349		New Zealand	0800444226	+ 44 (0) 20 7029 9377
Brazil	0008110051994	+ 44 (0) 20 7029 9350		Norway	80011816	+ 44 (0) 20 7029 9378
Canada	18005762534	+ 44 (0) 20 7029 9351		Panama	0018886608293	+ 44 (0) 20 7029 9379
Cayman Islands	18662795446	+ 44 (0) 20 7029 9352		Peru	080050793	+ 44 (0) 20 7029 9380
Chile	12300200651	+ 44 (0) 20 7029 9353		Philippines	180014410011	+ 44 (0) 20 7029 9381
China	108004400023	+ 44 (0) 20 7029 9354		Poland	008004411343	+ 44 (0) 20 7029 9382
Colombia	01800 9122064	+ 44 (0) 20 7029 9355		Portugal	800844130	+ 44 (0) 20 7029 9383
Cyprus	N/A	+ 44 (0) 20 7029 9356		Russia	74955809410	+ 44 (0) 20 7029 9384
Czech Republic	N/A	+ 44 (0) 20 7029 9357		Singapore	800 852 3666	+ 44 (0) 20 7029 9385
Denmark	80017779	+ 44 (0) 20 7029 9358		South Africa	0800991174	+ 44 (0) 20 7029 9386
Dubai	N/A	+ 44 (0) 20 7029 9359		South Korea	00308440046	+ 44 (0) 20 7029 9387
Finland	0800114424	+ 44 (0) 20 7029 9360		Spain	900974434	+ 44 (0) 20 7029 9388
France	0800908284	+ 44 (0) 20 7029 9361		Sweden	020792749	+ 44 (0) 20 7029 9389
Germany	08001810598	+ 44 (0) 20 7029 9362		Switzerland (D)	0800558443	+ 44 (0) 20 7029 9390
Greece	0080044129654	+ 44 (0) 20 7029 9363		Switzerland (F)	0800551368	+ 44 (0) 20 7029 9391
Hong Kong	800968580	+ 44 (0) 20 7029 9364		Switzerland (I)	0800551369	+ 44 (0) 20 7029 9392
Hungary	0680014347	+ 44 (0) 20 7029 9365		Taiwan	00801 444125	+ 44 (0) 20 7029 9393
Indonesia	001803440095	+ 44 (0) 20 7029 9366		Thailand	18004410152	+ 44 (0) 20 7029 9394
Ireland	1800409190	+ 44 (0) 20 7029 9367		Turkey	80044942788	+ 44 (0) 20 7029 9395
Israel	18009437368	+ 44 (0) 20 7029 9368		United Kingdom	0800446633	+ 44 (0) 20 7029 9396
Italy	800780939	+ 44 (0) 20 7029 9369		Uruguay	0004110052240	+ 44 (0) 20 7029 9397
Japan	0120653638	+ 44 (0) 20 7029 9370		USA	18008723373	+ 44 (0) 20 7029 9398
Lichtenstein	0800809417	+ 44 (0) 20 7029 9371		Venezuela	80015802	+ 44 (0) 20 7029 9399

All calls to Customer Support are recorded.

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