XDP INTEGRATED FEED CLIENT SPECIFICATION

NYSE INTEGRATED FEED, NYSE MKT INTEGRATED FEED

Version	Date
2.0j	July 28, 2016

PREFACE

DOCUMENT HISTORY

VERSION NO.	DATE	CHANGE DESCRIPTION
2.0	Sept 23, 2014	Version 2.0 Initial Publicaton
2.0a	Oct 10, 2014	Corrected description of Order Execution msg.
2.0b	Oct 17, 2014	Corrected description of Cross Trade's Cross ID field.
2.0c	Dec 19, 2014	Removed SourceTimeReference message to Common Client Spec
2.0d	Apr 7, 2015	Clarified descriptions of Parity Splits and other fields
2.0e	Aug 14, 2015	Added per-message publication times
2.0f	Nov 12, 2015	Clarified descriptions in Imbalance Message and Appendix A
2.0g	Nov 18, 2015	Clarified descriptions in Appendix A
2.0h	Dec 1, 2015	PositionChange field in Modify Order message is defaulted to 0
2.0i	Dec 15, 2015	Added DBExecID field to Order Execution and Non-Displayed Trade msgs
2.0j	July 28, 2016	Updated description of the AuctionType field in Imbalance Message 105

REFERENCE MATERIAL

The following lists the associated documents, which either should be read in conjunction with this document or which provide other relevant information for the user:

- XDP Common Client Specification
- SFTI US Technical Specification
- SFTI US Customer Guide
- NYSE Symbology

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FURTHER INFORMATION

For additional information about the product, visit the XDP Integrated Feed Product Page

For updated capacity figures, visit our capacity pages at: http://www.nyxdata.com/capacity

For details of IP addresses, visit our IP address pages at: http://www.nyxdata.com/ipaddresses

For a full glossary, visit: http://www.nyxdata.com/glossary/

CONTENTS

1. XDP Integrated Feed Information

1.1   OVERVIEW

The XDP Integrated feed provides a raw feed of the Exchange's order book for all traded securities. Traders will see the complete depth of book, all trade events, the stock security status, and stock imbalances. All of the data is sent in the order in which it occurs at the Matching Engine.

All message types defined in this document appear only in the main publication channels, except:

- The Imbalance and Add Order Refresh message types also appear in the Refresh channels.
- The Stock Summary message appears only in a dedicated Stock Summary channel.

See Appendixes D and E for differences between XDP Integrated Book Feed version 1.0 and 2.0

1.2   CONTROL MESSAGE TYPES USED IN THE FEED

See the XDP Common Client Specification for details on all control messages.

MSG TYPE	DESCRIPTION	PUBLISHER CHANNELS	REQUEST CHANNEL	REFRESH CHANNELS
1	Sequence Number Reset	x		x
2	Time Reference	x		x
3	Symbol Index Mapping	x		x
10	Retransmission Request		client	
11	Request Response		server	
12	Heartbeat Response		client	
13	Symbol Index Mapping Request		client	
15	Refresh Request		client	
31	Message Unavailable		server	
32	Symbol Clear	x		
33	Trading Session Change*	x		x
34	Security Status Message	x		x
35	Refresh Header Message			x

For future use in the Arca market only.

1.3   MESSAGE PUBLICATION TIMES

All times apply to NYSE and NYSE MKT, and are US Eastern Standard Time.

Integrated Feed Message Types

MSG TYPE	DESCRIPTION	NORMAL DAYS	EARLY CLOSE DAYS
100	Add Order Message	7:30am – 4:00pm	7:30am – 1:00pm
101	Modify Order Message	7:30am – 4:00pm	7:30am – 1:00pm
104	Replace Order Message	7:30am – 4:00pm	7:30am – 1:00pm
102	Delete Order Message	7:30am – 4:00pm	7:30am – 1:00pm
103	Order Execution Message	9:30am – 4:00pm	9:30am – 1:00pm
110	Non-Displayed Trade Message	9:30am – 4:00pm	9:30am – 1:00pm
112	Trade Cancel Message	9:30am – 4:00pm	9:30am – 1:00pm
111	Cross Trade Message	9:30am – 4:00pm	9:30am – 1:00pm
113	Cross Correction Message	9:30am – 4:00pm	9:30am – 1:00pm
105	Imbalance Message	**See Section A.1.2**	**See Section A.1.2**
106	Add Order Refresh Message	7:30am – 4:00pm	7:30am – 1:00pm
223	Stock Summary Message	9:30am – 4:00pm	9:30am – 1:00pm

Control Message Types

See the XDP Common Client Specification for details on all control messages.

MSG TYPE	DESCRIPTION	NORMAL DAYS	EARLY CLOSE DAYS
1	Sequence Number Reset	7:30am – 4:00pm	7:30am – 1:00pm
2	Time Reference	7:30am – 4:00pm	7:30am – 1:00pm
3	Symbol Index Mapping	12:00am – 4:00pm	12:00am – 1:00pm
32	Symbol Clear	12:00am – 4:00pm	12:00am – 1:00pm
34	Security Status Message	7:30am – 4:00pm	7:30am – 1:00pm

2. Add Order Message – Msg Type 100

An Add Order message is published when a new visible order has been received and added to the book. The Order ID is assigned by the matching engine and is unique for this symbol for today only.

See the XDP Common Client Specification for details on Time Reference and Symbol Index Mapping messages, and Order ID and Price field formats.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 39 bytes
Msg Type	2	2	Binary	The type of message: 100 – Add Order Message
SourceTimeNS	4	4	Binary	The nanosecond offset from the Time Reference second (since Jan 1, 1970 00:00:00 UTC)
SymbolIndex	8	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	12	4	Binary	The sequence number of this message in the set of all messages for this symbol
OrderID	16	8	Binary	The unique ID assigned by the matching engine to this order
Price	24	4	Binary	The order price. Use with the Price Scale from the symbol-mapping index.
Volume	28	4	Binary	The order quantity in shares
Side	32	1	ASCII	The side of the order (Buy/Sell). Valid values: ▪ 'B' – Buy ▪ 'S' – Sell
FirmID	33	5	ASCII	The market participant's firm ID. Blank-filled if a firm ID was not specified.
NumParitySplits	38	1	Binary	Resulting number of splits at this price level ▪ 0 = The number of parity splits at this price level is between 1 and 4 inclusive ▪ 5-254 = The number of parity splits at this price level 255 = 255 or more splits at this price level

3. Modify Order Message – Msg Type 101

A Modify Order message is sent when the price or volume of an order is changed due to an event other than a cancel-replace, or full or partial execution. The content of the price and volume fields represent the new values after modification.

See the XDP Common Client Specification for details on Time Reference and Symbol Index Mapping messages, and Order ID and Price field formats.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 35 bytes
Msg Type	2	2	Binary	The type of message: 101 – Modify Order Message
SourceTimeNS	4	4	Binary	The nanosecond offset from the Time Reference second (since Jan 1, 1970 00:00:00 UTC)
SymbolIndex	8	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	12	4	Binary	The sequence number of this message in the set of all messages for this symbol
OrderID	16	8	Binary	The unique ID assigned by the matching engine to the order to be modified
Price	24	4	Binary	The new order price. Use the Price scale from the symbol mapping index.
Volume	28	4	Binary	The new order quantity in shares.
PositionChange	32	1	Binary	Will be implemented in a future release and is defaulted to 0 currently. ▪ 0 – Kept position in book ▪ 1 –Lost position in book
PrevPriceParitySplits	33	1	Binary	Resulting number of splits at the previous price ▪ 0 = The number of parity splits at this price level is between 1 and 4 inclusive ▪ 5-254 = The number of parity splits at this price level 255 = 255 or more splits at this price level
NewPriceParitySplits	34	1	Binary	Resulting number of splits at the new price ▪ (If price does not change, same as PrevPriceParitySplits) Values same as PrevPriceParitySplits

4. Replace Order Message – Msg Type 104

A Replace Order message is published when a cancel/replace order is received and executed. The sitting order is replaced with a new one containing the same symbol, side and attribution, a new Order ID, and the price and size specified. The sitting order must be removed from the book and replaced with the new order.

See the XDP Common Client Specification for details on Time Reference and Symbol Index Mapping messages, and Order ID and Price field formats.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 42 bytes
Msg Type	2	2	Binary	The type of message: 104 – Replace Order Message
SourceTimeNS	4	4	Binary	The nanosecond offset from the Time Reference second (since Jan 1, 1970 00:00:00 UTC)
SymbolIndex	8	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	12	4	Binary	The sequence number of this message in the set of all messages for this symbol
OrderID	16	8	Binary	The unique ID assigned by the matching engine to the existing order to be replaced
NewOrderID	24	8	Binary	The new Order ID of the replacement order
Price	32	4	Binary	The new order price. Use the Price scale from the symbol mapping index.
Volume	36	4	Binary	The new order quantity in shares.
PrevPriceParitySplits	40	1	Binary	Resulting number of splits at the previous price ▪ 0 = The number of parity splits at this price level is between 1 and 4 inclusive ▪ 5-254 = The number of parity splits at this price level 255 = 255 or more splits at this price level
NewPriceParitySplits	41	1	Binary	Resulting number of splits at the new price ▪ (If price does not change, same as PrevPriceParitySplits) Values same as PrevPriceParitySplits

5. Delete Order Message – Msg Type 102

A Delete Order message is published when an order is taken off of the book for any reason except for full execution, in which case an Order Execution message is sent.

See the XDP Common Client Specification for details on Time Reference and Symbol Index Mapping messages, and Order ID field format.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 25 bytes
Msg Type	2	2	Binary	The type of message: 102 – Delete Order Message
SourceTimeNS	4	4	Binary	The nanosecond offset from the Time Reference second (since Jan 1, 1970 00:00:00 UTC)
SymbolIndex	8	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	12	4	Binary	The sequence number of this message in the set of all messages for this symbol
OrderID	16	8	Binary	The unique ID assigned by the matching engine to the existing order to be deleted
NumParitySplits	24	1	Binary	Resulting number of splits at the price level of the deleted order ▪ 0 = The number of parity splits at this price level is between 1 and 4 inclusive ▪ 5-254 = The number of parity splits at this price level 255 = 255 or more splits at this price level

6. Order Execution Message – Msg Type 103

An Order Execution message is sent when an order is partially or fully executed. The Volume field indicates the executed quantity. If the Price field is different from the price of the order, any remaining shares keep their original price. If the Volume field equals the number of shares previously remaining in the order, then the order has been fully executed and should be removed from the book.   If the order has been partially executed, further Order Execution messages for this Order ID may be published.

See the XDP Common Client Specification for details on Time Reference and Symbol Index Mapping messages, and Order ID and Price field formats.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 42 bytes
Msg Type	2	2	Binary	The type of message: 103 – Order Execution Message
SourceTimeNS	4	4	Binary	The nanosecond offset from the Time Reference second (since Jan 1, 1970 00:00:00 UTC)
SymbolIndex	8	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	12	4	Binary	The sequence number of this message in the set of all messages for this symbol
OrderID	16	8	Binary	The unique ID assigned by the matching engine to the partially or fully executed order
TradeID	24	4	Binary	Unique ID assigned by the matching engine to this execution. Used by any subsequent Trade Cancel message to identify this execution.
Price	28	4	Binary	The execution price of this trade. Use the Price Scale from the symbol mapping index.
Volume	32	4	Binary	The executed quantity in shares
PrintableFlag	36	1	Binary	▪ 0 = Not Printed to the SIP ▪ 1 = Printed to the SIP
NumParitySplits	37	1	Binary	Resulting number of splits at the price level at which the executed order was resting ▪ 0 = The number of parity splits at this price level is between 1 and 4 inclusive ▪ 5-254 = The number of parity splits at this price level 255 = 255 or more splits at this price level
DBExecID	38	4	Binary	ID assigned by the matching engine to all orders that participated in this trade event. Correllates with the DBExecID field in the gateway Execution Ack msg.

7. Non-Displayed Trade Message – Msg Type 110

An Non Displayed Trade message is sent as a result of a match between two non-displayed orders.

Customers who are only interested in building a book of displayed orders may safely ignore Non-Displayed Trade messages. Customers who are creating statistics or displays requiring the full record of trades in this market will need to process Non-Displayed Trade messages.

See the XDP Common Client Specification for details on Time Reference and Symbol Index Mapping messages, and Order ID and Price field formats.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 33 bytes
Msg Type	2	2	Binary	The type of message: 110 – Non-Displayed Trade Message
SourceTimeNS	4	4	Binary	The nanosecond offset from the Time Reference second (since Jan 1, 1970 00:00:00 UTC)
SymbolIndex	8	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	12	4	Binary	The sequence number of this message in the set of all messages for this symbol
TradeID	16	4	Binary	Unique ID assigned by the matching engine to this trade event. Used by any subsequent Trade Cancel message to identify this trade.
Price	20	4	Binary	The execution price of the trade. Use the Price scale from the symbol mapping index.
Volume	24	4	Binary	Volume of the trade in shares
PrintableFlag	28	1	Binary	▪ 0 = Not Printed to the SIP ▪ 1 = Printed to the SIP
DBExecID	29	4	Binary	The ID assigned by the matching engine to all orders in this trade event. Correllates with the DBExecID field in the gateway Execution Ack message.

8. Trade Cancel Message – Msg Type 112

In the event that an earlier trade has been reported in error, a Trade Cancel message is sent. This occurs whether the initial report was an Order Execution or a Non-Displayed Trade message.

Note that since Trade Cancel messages only affect trades that occurred in the past, customers who are only interested in building a book may safely ignore them.

Customers who are building a complete record of today's trades should remove the cancelled trade from their records and subtract its volume from any statistics.

See the XDP Common Client Specification for details on Time Reference and Symbol Index Mapping messages.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 20 bytes
Msg Type	2	2	Binary	The type of message: 112 – Trade Cancel Message
SourceTimeNS	4	4	Binary	The nanosecond offset from the Time Reference second (since Jan 1, 1970 00:00:00 UTC)
SymbolIndex	8	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	12	4	Binary	The sequence number of this message in the set of all messages for this symbol
TradeID	16	4	Binary	The TradeID of the original Trade or Execution message to be cancelled.

9. Cross Trade Message – Msg Type 111

A Cross Trade message is published on completion of a crossing auction, and shows the bulk volume that traded in the auction. The Reason Code field indicates the auction type. Additionally, a non-printable Order Execution or Trade message will be published for each order that traded.

See the XDP Common Client Specification for details on Time Reference and Symbol Index Mapping messages, and Order ID and Price field formats.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 29 bytes
Msg Type	2	2	Binary	The type of message: 111 – Cross Trade Message
SourceTimeNS	4	4	Binary	The nanosecond offset from the Time Reference second (since Jan 1, 1970 00:00:00 UTC)
SymbolIndex	8	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	12	4	Binary	The sequence number of this message in the set of all messages for this symbol
CrossID	16	4	Binary	Unique identifier for this Cross Trade. Used in Cross Correction message to identify the Cross Trade to correct.
Price	20	4	Binary	The execution price. Use the Price scale from the symbol mapping index.
Volume	24	4	Binary	Volume executed in shares
CrossType	28	1	ASCII	Reason for the crossing auction. Valid values: ▪ 'O' – Market Center Opening Auction ▪ '5' – Market Center Reopening Auction ▪ '6' – Market Center Closing Auction

10. Cross Correction Message – Msg Type 113

In the event that an earlier Cross Trade has been reported in error, a Cross Correction message is sent.

Note that since Cross Correction messages only affect cross auctions that occurred in the past, customers who are only interested in building a book may safely ignore them.

Customers who are building a complete record of today's volume should remove the previously reported volume from their statistics and add the volume of the Cross Correction to them.

See the XDP Common Client Specification for details on Time Reference and Symbol Index Mapping messages.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 24 bytes
Msg Type	2	2	Binary	The type of message: 113 – Cross Correction Message
SourceTimeNS	4	4	Binary	The nanosecond offset from the Time Reference second (since Jan 1, 1970 00:00:00 UTC)
SymbolIndex	8	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	12	4	Binary	The sequence number of this message in the set of all messages for this symbol
CrossID	16	4	Binary	The CrossID of the original Cross Trade message to be corrected.
Volume	20	4	Binary	The corrected volume of Cross Trade message.

11. Imbalance Message– Msg Type 105

Imbalance messages are sent periodically to update price and volume information during auctions.

See APPENDIX A:Information on Auctions for details on the auction process in the NYSE markets.

See the XDP Common Client Specification for details on Time Reference and Symbol Index Mapping messages, and Price field format.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 52 bytes
Msg Type	2	2	Binary	The type of message: 105 – Imbalance Message
SourceTime	4	4	Binary	The time when this msg was generated in the order book, in seconds since Jan 1, 1970 00:00:00 UTC.
SourceTimeNS	8	4	Binary	The nanosecond offset from the Source Time
SymbolIndex	12	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	16	4	Binary	The sequence number of this message in the set of all messages for this symbol
ReferencePrice	20	4	Binary	The Reference Price is the Last Sale if the last sale is at or between the current best quote. Otherwise the Reference Price is the Bid Price if last sale is lower than Bid price, or the Offer price if last sale is higher than Offer price. (see Appendix A for details)
PairedQty	24	4	Binary	The number of shares paired off at the reference price point truncated to the round lot. E.g. 1575 shares is published as 1500.
TotalImbalanceQty	28	4	Binary	The total imbalance quantity at the reference price truncated to the round lot. E.g. 1575 shares is published as 1500.
MarketImbalanceQty	32	4	Binary	Unused in NYSE and NYSE MKT, defaulted to 0.
AuctionTime	36	2	Binary	Projected Auction Time (hhmm)
AuctionType	38	1	ASCII	The reason for the auction. Valid values: ▪ 'M' – Opening Auction ▪ 'H' – Reopening Auction (Halt Resume) ▪ 'C' – Closing Auction ▪ 'R' – Regulatory Imbalance
ImbalanceSide	39	1	ASCII	The side of the imbalance. Valid Values:

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
				▪ 'B' – Buy ▪ 'S' – Sell ▪ Space – No imbalance
ContinuousBook ClearingPrice	40	4	Binary	The indicative matching price, i.e. the price closest to the reference price where the imbalance is 0. If a continuous book clearing price is not reached, it is defaulted to 0.
ClosingOnly ClearingPrice	44	4	Binary	The price closest to the reference price where the imbalance of closing only interest is 0. If a closing only clearing price is not reached, it is defaulted to 0.
SSRFilingPrice	48	4	Binary	The price at which Sell Short interest in the opening auction will be filed if a Sell Short Restriction is in effect for the security.

12. Add Order Refresh Message – Msg Type 106

The Add Order Refresh message can be sent in either of two contexts:

1) If a client sends a Refresh Request to the Request Controller, an Add Order Refresh message is sent over the Refresh channels as part of the refresh response for every order currently sitting on the book.

2) If a primary XDP Publisher fails over to the backup, for every symbol, the backup sends a Symbol Clear message followed by a full refresh, which includes an Add Order Refresh message for every order currently sitting on the book of the symbol.

See the XDP Common Client Specification for details on Time Reference and Symbol Index Mapping messages, and Order ID and Price field formats.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 43 bytes
Msg Type	2	2	Binary	The type of message: 106 – Add Order Refresh Message
SourceTime	4	4	Binary	The time when this msg was generated in the order book, in seconds since Jan 1, 1970 00:00:00 UTC.
SourceTimeNS	8	4	Binary	The nanosecond offset from the SourceTime
SymbolIndex	12	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	16	4	Binary	The sequence number of this message in the set of all messages for this symbol
OrderID	20	8	Binary	The unique ID assigned by the matching engine to this order
Price	28	4	Binary	The order price. Use the Price scale from the symbol-mapping index.
Volume	32	4	Binary	The order quantity in shares
Side	36	1	ASCII	The side of the order (Buy/sell). Valid values: ▪ 'B' – Buy ▪ 'S' – Sell
FirmID	37	5	ASCII	The participant's firm ID, or blanks if firm ID was not specified
NumParitySplits	42	1	Binary	Future use. Defaulted to 0.

13. Stock Summary Message – Msg Type 223

On a separate channel from the main feed, the Stock Summary channel, a Stock Summary message per symbol is sent every 60 seconds. The message is sent regardless of whether there has been a change to the symbol in the last 60 seconds or not.

See the XDP Common Client Specification for details on the Price field format.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 36 bytes
Msg Type	2	2	Binary	The type of message: 223 – Stock Summary Message
SourceTime	4	4	Binary	The time when this msg was generated in the order book, in seconds since Jan 1, 1970 00:00:00 UTC.
SourceTimeNS	8	4	Binary	The nanosecond offset from the SourceTime
SymbolIndex	12	4	Binary	The ID of the symbol in the Symbol Index msg
HighPrice	16	4	Binary	The exchange high price of this stock for the day. Use the Price Scale in the symbol index msg.
LowPrice	20	4	Binary	The exchange Low price of this stock for the day. Use the Price Scale in the symbol index msg.
Open	24	4	Binary	The exchange Opening price of this stock for the day. Use the Price Scale in the symbol index msg.
Close	28	4	Binary	The exchange Closing price of this stock for the day. Use the Price Scale in the symbol index msg.
TotalVolume	32	4	Binary	The exchange cumulative volume for the stock throughout the day.

APPENDIX A: Information on Auctions

A.1   NYSE AND MKT AUCTIONS

MESSAGE TYPE	DESCRIPTION
Opening	**Interest Included** ▪ All electronic interest eligible to trade in the opening auction ▪ DMM interest as needed to offset the imbalance **Order Cancellation** ▪ Orders can be cancelled at any time up to the conclusion of the auction **Calculation** The Reference Price is equal to the previous close unless there is a Rule 15 or Mandatory indication published, in which case ▪ The Reference Price is the indication low price if the indication low price is higher than the previous close ▪ The Reference Price is the indication high price if the indication high price is lower than the previous close ▪ The Reference Price is the previous close if the previous close is within the indication range The Continuous Book Clearing Price is defaulted to 0 until 2 minutes before the opening auction time.

Closing	**Interest Included**
	
	▪ For Paired Quantity, Total Imbalance Quantity and Closing Only Clearing Price:
	    ○ MOC and LOC orders
	    ○ Closing Only interest (when offsetting the imbalance)
	    ○ Discretionary orders in the last 5 minutes of the auction only
	
	▪ For Continuous Book Clearing Price:
	    ○ All electronic interest eligible to trade in the closing auction
	    ○ DMM interest as needed to offset the imbalance
	
	Order Cancellation
	
	▪ Orders can be cancelled any time during the auction, except for MOC and LOC orders which can be cancelled only up to 2 minute before the conclusion of the auction.
	
	Calculation
	
	The Continuous Book Clearing Price is defaulted to 0 until 15 minutes before the closing auction time.

A.1.1 NYSE AND MKT PUBLICATION TIMES

If there is no change to the calculated fields, no message will be generated.

MESSAGE	PUBLICATION PERIOD	PUBLICATION FREQUENCY
NYSE Opening Imbalances	60 minutes before market open until 30 minutes before market open	Every 5 minutes
	30 minutes before market open until 10 minutes before market open	Every 1 minute
	10 minutes before market open until 5 minutes after market open or until the stock opens	Every 15 seconds
NYSE Closing Imbalances	15 minutes before market close until market close	Every 5 seconds

APPENDIX B: Trading session Hours

SESSION VALUE	DESCRIPTION	NYSE / NYSE MKT
0x01	Morning Hours	N/A
0x02	National Hours	9:30am – 4:00pm EST
0x04	Late Hours	N/A

APPENDIX C: Product IDs

Refresh and Retransmission Request messages must specify a Product ID. The correct product IDs for the Integrated feed follow.

EXCHANGE	PRODUCT ID	DESCRIPTION
NYSE	11	NYSE Integrated Feed
NYSE MKT	59	NYSE MKT Integrated Feed
NYSE Arca	157	NYSE Arca Integrated Feed (will adopt 2.0 in the future)

APPENDIX D: Scenarios For Integrated Feed version 2 vs. version 1

The following is a list of elementary scenarios to illustrate the changes in this major release. For each scenario, the list of expected msgs is shown in order of publication.

	SCENARIO	Existing XDP 1.0	XDP 2.0
1	**Client adds an order**	Add	Add
2	**Client adds an attributed order**	Attributed Add	Add(firmID)
	Basic Add msg handles attribution		
3	**Client deletes an order**	Del	Del
4	**Client reduces the size of an order**	Mod(pri,vol)	Mod(kept position)(pri,vol)
	Position indicator replaces Reason Code		
5	**Client cancel-replace**	Mod(pri,vol)	Replace(pri,vol)
	New Replace msg handles this scenario		
6	**Hidden liquidity executes**	Trade(pri,vol)	NonDisplayedTrade(pri,vol)
	New dedicated message type		
7	**An order partially executes**	Exe(pri,vol)	Exe(pri,vol)
	All execution events	Trade(pri,vol)	
	handled by one msg type	Mod(pri,vol)	
8	**An order fully executes**	Exe(pri,vol)	Exe(pri,vol)
		Trade(pri,vol)	
		Del	
9	**An order executes (new price)**	Exe(pri,vol)	Exe(pri,vol)
		Trade(pri,vol)	
		Mod(pri,vol) or Del	
10	**Multiple orders exe (same price)**	Exe	
		Trd 1	
		Del 1	Exe(pri,vol)
		Trd 2	
		Del 2	Exe(pri,vol)
		. . .	. . .
		Trd N	
		Mod	Exe(pri,vol)
11	**a. add reserve to buy 1000, 100 lit**	Add 100 to buy	Add 100 to buy
	b. aggressor sells 400	Exe 100	
		Trd 100	
		Del 100	Exe(pri,100)
		Trd 300	NonDispTrd 300
		Add 100 to buy	Add 100 to buy

12	**a. add reserve to buy 1000, 500 lit**		Add 500 to buy	22
	b. aggressor sells 400		Exe(pri,400)	
			Add 400 to buy	

13	**An order is repriced (peg, SS, Tick, etc...)**	Mod(pri,vol)	Mod(lost position) (pri)
	Orders usually lose position on reprice		
14	**An order is repriced due to LULD bands**		Mod(kept position) (pri)
	Orders keep position on an LULD reprice		
15	**a. Client adds order for 2500**		Add 2500 to buy
	b. 1000 routed away		Mod(kept pos) (vol=1500)
	c. 1000 canceled back		Add 1000 to buy

16	**a. Client adds order for 2500**	Add 2500 to buy
	b. 2500 routed away	Del
	c. 2500 canceled back	Add 2500 to buy

17	**a. Client adds reserve ord for 1000, 500 lit**	Add 500 to buy
	b. 700 routed away, 300 bal in reserve lit	Del
		Add 300 to buy
	c. 700 canceled back, 500 put back in reserve	Add 200 to buy

18	**open/reopen/close auction**	
	Total volume executed and printed to the SIP	CrossTrade
	Visible and hidden executions in the auction	Exes,Trades(printable=0)
	Dels of orders not matched in the auction	Dels
	Replenishes after partial executions	Adds
	Official notice of end of auction	SecurityStatus(open,reopen,close)

APPENDIX E: Changes in Integrated Feed version 2 vs. version 1

	Msg Types affected	
1	all order msgs	TradeSession field removed, so on session change, explicit deletes of expired messages are sent
2	all order msgs	Order ID field increased to 8 bytes, so no mapping of order ID to the ID in the Gateway Ack is needed
3	all order msgs	GTC Indicator field is removed
4	Time Reference	Time Reference msgs are sent once a second per Matching Engine server, not per symbol, saving thousands of msgs per second
5	all msg types	SourceTimeSecs removed - all IBF messages now use Time Reference messages
6	Exe,Mod,Del,Trd	Reporting of executions is simplified to a single Execution message, simplifying client processing
7	Add & Add Refresh	Attr Add and Attr Add Refresh messages eliminated, Firm ID field added to Add and Add Refresh
8	Replace	Added Replace message to express the cancel/replace scenario
9	Add,Del,Mod,Repl,Exe	NumParitySplits fld added to support NY (0 for Arca) - shows num splits at this price point as a result of this message
10	Mod, Replace	Mod & Replace msgs can change price of an existing order, so need 2 parity flds: at old price & at new price
11	NonDisplayedTrade	New message type replaces Trade msg, shows trades in which both sides are hidden
12	CrossTrade	New msg type shows bulk volume resulting from an auction execution (followed by exes & trades showing each)
13	Exe & NonDispTrade	new Printable fld - 0 if not printed to tape, else 1
14	Mod	New PositionChange field (0=kept position, 1=lost position) - replaces reason code field
15	Mod, Replace, Del	Eliminate side field
16	Security Status	Market Status (open/reopened/closed) moved from Status field to its own field