NYSE Arca FIX Specification

For Products Available via the NYSE Arca FIX Gateway

Preface

Document Control

Date	Revision	Change Made by:	Synopsis of Change
May 16, 2003	1.0	John Prouty	Update to document
June 24, 2003	1.1	John Prouty	Added Bulletin Board Exchange Specifications
July 1, 2003	1.2	John Prouty	Added copyright info
July 17, 2003	1.3	John Prouty	Added Pegged order info
July 23, 2003	1.4	John Prouty	Updated Decimalization section
August 13, 2003	1.5	John Prouty	Added "POO" order Fix requirements. Modified Trading Session ID section
August 20, 2003	1.6	John Prouty	Added OrderiD clarification for cancels and changes
September 2, 2003	1.7	John Prouty	Added Listed Pegs
September 16, 2003	1.8	John Prouty	Added OTC Cross orders, Bust and Correct requirements
September 25, 2003	1.9	John Prouty	Adjusted Listed NOW order section
October 22, 2003	2.0	John Prouty	Pegged Order clarification
December 18, 2003	2.1	John Prouty	Added Auction order info
January 2, 2004	2.2	John Prouty	Updated for new Listed Exchange Platform behavior
February 5, 2004	2.3	John Prouty	Added News Messages section
March 9, 2004	2.4	John Prouty	Modified auction info
March 15, 2004	2.5	John Prouty	Added Q order info
March 24, 2004	2.6	John Prouty	Added auto-refresh Q order info
March 26, 2004	2.7	John Prouty	Add Capacity Flag information
March 30, 2004	2.8	John Prouty	Modified Listed auction info
April 16, 2004	2.9	John Prouty	Removed BB Pegged order Info and modified Q order requirements
May 25, 2004	3.0	John Prouty	Removed "not yet available" from auto refresh "Q" order. Added PNP + order info. Corrected NOW orders session information for OTC.
June 28, 2004	3.1	John Prouty	Modified rdered and execid lengths and also oversize cancel/replace scenarios in section 5.6. Added Inside Limitto Listed order type section. Modified PNP+ order to ordtype=7.
July 1, 2004	3.2	John Prouty	Added late auctions to Listed Order Types
November 12, 2004	3.3	John Prouty	Modified Cross order section and Listed ordertype section.
March 7, 2005	3.4	John Prouty	Modified Proactive if Locked section.
March 28, 2005	3.5	Dave Weiss	-Re-formatted order type section -added OTC POO order type -added draft of new directed order process. -added passive liquidity order type.
April 27, 2005	3.6	Dave Weiss	Changed the session times to reflect new early open
June 10, 2005	3.7	Dave Weiss	Modified Direct Order section
June 16, 2005	3.8	John Prouty	Modified auto-q section, corrected LOC definition in table, added random reserve to order table
July 25, 2005	3.9	John Prouty	Modified Cross Order section and order type section to reflect cross order changes
August 11, 2005	4.0	John Prouty	Added specifications for Options trading. Added Fix 4.2 specifications.
August 16, 2005	4.1	John Prouty	Added WITHSTK complex order specifications. Removed Text special booth requirements section.
September 21, 2005	4.2	John Prouty	Changed tag 167 requirements for Straddle complex orders from STDL to STRD
October 26, 2005	4.3	John Prouty	Added PCS order
November 15, 2005	4.4	John Prouty	Added Corporate Bonds info. Added short sale checking to G-order Modified Options system hours of operation. Removed BB from directed order options
November 28, 2005	4.5	John Prouty	Added backup session reconnection clarification.
December 2, 2005	4.6	John Prouty	Changed PL order requirements to OrdType(40)=7
January 9, 2006	4.7	John Prouty	Changed Options requirements to reflect OX system
February 14, 2006	4.8	John Prouty	Corrected pegged eligibility. Changed LastMkt(30) for Bonds to N from PB.
March 3, 2006	4.9	John Prouty	Added Tracking order. Modified available auctions. Added news

			message to msgtypes in section 5.Added ExecInst=G to section 6.1.Added 59=1 to section 6.4.
March 6, 2006	5.0	John Prouty	Removed late auctions for OTC.
April 12, 2006	5.1	Michelle Pietras	Modified Portfolio Crossing System (PCS) to include portfolio types.
May 10, 2006	5.2	Dave Weiss	Added GTC section for OTCs. Section 3.10 Added bond fields to execution report message Added failover section
Aug 23, 2006	5.3	Christopher Yohn	Added Options orders that are entered in a market maker (204=3) capacity to New Order-Single table
Oct 03, 2006	5.4	Dave Weiss	Added PL description and order types
Oct 13, 2006	5.5	Dave Weiss	ADDED ISO orders
Dec 8, 2006	5.6	Christopher Yohn	Removed Tag 439
January 3, 2007	5.7	Christopher Yohn	Modified CMTA to 4 characters
January 17, 2007	5.8	Christopher Yohn	Added PCS Rule
January 24, 2007	5.9	Christopher Yohn	Added OX to Reserve and Now orders
May 9, 2007	6.0	Christopher Yohn	Added existing Tags to Execution section.
May 18, 2007	6.1	Christopher Yohn	Added Auction, MPL and PNP Blind order
June 13, 2007	6.2	Christopher Yohn	Added 9730 value 'N'
July 20, 2007	6.3	Christopher Yohn	Updated Auction and PNP orders
July 30, 2007	6.4	Christopher Yohn	Added NYSE Arca Primary Sweep order
Sept 18, 2007	6.5	Dave Weiss	Added fast cancel/replace messaging
October 5, 2007	6.6	Marc Abend	Updated FIX Application Protocol Section - Removed Sides Short Sell Exempt & Cross Short Exempt
October 23, 2007	6.7	Marc Abend	Updated "Auction Only" order types and Bond Security Identifiers in FIX Application Protocol Section.
November 9, 2007	6.8	Marc Abend	Added additional information for Fast Cancel/Replace.
December 12, 2007	6.9	Marc Abend	Added additional information for PNP Blind Order.
January 8, 2008	7.0	Marc Abend	Updated Proactive If Locked (Tag 9733)
January 22, 2008	7.1	Marc Abend	Updated Midpoint Passive Liquidity Order type – Minimum Shares lowered from 1000 to 100
February 26, 2008	7.2	Marc Abend	Added PO+ Order Type
March 31, 2008	7.3	Marc Abend	Added 9416=2 IOI Dark Pool Opt Out Indicator
May 12, 2008	7.4	Erik Iodice	Added 9730=B Blind Indicator Added information for NOW Order
May 30, 2008	7.5	Marc Abend	Format Change of FIX Specification due to new products accepted by the NYSE Arca FIX Gateway. • Options and Bond Specific Sections Added • MatchPoint Section Added • Complex Orders Section Added (Not available yet)
July 16, 2008	7.6	Marc Abend	General updates to Equities Section Updated Tag 9730 Values
July 21, 2008	7.7	Marc Abend	Update to TradingSessionID requirements in Section 3.3.
August 12, 2008	7.8	Marc Abend	Added Tag 526 – "Optional Data" Field for Option Orders
August 12, 2008	7.9	Marc Abend	Added new chapter: Liffe Order Routing Section (Not available yet.) Added NYSE Arca Equities Supported Symbology Table
August 15, 2008	8.0	Marc Abend	Updated NYSE MatchPoint Trading sessions. Intraday matches added.
September 9, 2008	8.1	Marc Abend	NYSE AMEX Options Chapter Added (Est. 1st Qtr 2009)
September 23, 2008	8.2	Erik Iodice	Corrected ExecID description on pages 51 & 68. Corrected POO Order Type for Equities Adjusted ExecID and OrderID fields for NYSE AMEX Options from 9 to 20 characters
October 31st, 2008	8.3	Marc Abend	Added Treasuries to Bonds section Added New York Block Exchange (NYBX) Chapter

			Added Bulk Cancel by ETPID (Not Available Yet)
December 8th, 2008	8.4	Marc Abend	Added additional information to NYSE AMEX Chapter Added Add Liquidity Only (ALO) Order Type to NYSE Arca Equities section
January 7th, 2009	8.5	Marc Abend	Added additional information and ISO Order Types to Options (ISO coming soon, ETA February 2009) Adjusted ExecID and OrderID fields for NYSE Arca Options from 9 to 20 characters (Change happening 1/26/2009) Added new FIX Drop Copy Appendix for Equities,Options, and Bonds/Treasuries Products
February 10th, 2009	8.6	Marc Abend	Added TNT Spec information to NYSE Amex Options Added additional information to New Order Single for NYSE Amex Options
March 26th, 2009	8.7	Marc Abend	Added additional information into Complex Order Cancel Message
May 5th, 2009	8.8	Marc Abend	Removed Appendix for Drop Copies. This will be placed in a separate document.
May 10th, 2009	8.9	Marc Abend	Added PO+S Order Type (Additional function to PO+ Order) – (Not available yet) Updated PSO Order Type Added Wait Order for NYSE Arca Options (Not available yet) Added FOK Order Type for Equities
May 11th, 2009	9.0	Marc Abend	General updates to all Specification FIX Message Tables. Added OSI Initiative Information to Options and Complex sections.
June 2nd, 2009	9.1	Marc Abend	Added Tag 7928 (NoSelfTrade) to NYSE Arca New Order (Equities Only)
June 12th, 2009	9.2	Marc Abend	Added OSI Symbology Information to Options Sections, plus all necessary FIX Tag information within the message tables.
July 23rd, 2009	9.3	Chris Calcaterra	Added PO+ MOC/LOC FIX Tag information under the New Order Single, Cancel, and Cancel Replace tables. Also updated PO+ in Order Types Table.
August 7th, 2009	9.4	Marc Abend	Added notes to ExecID, OrderID, ExecRefID, and ArcaExID (9731) fields for NYSE Arca Equities for increase from 9 to 20 characters when UTP goes live. Added PNP Blind, PNP Light and ALO Order Types for NYSE Arca Options. Added PNP Light to NYSE Arca Complex Orders. **Added Note to PNPb Order Type: Fast Cancel/Replace is not available on Options PNP Blind Orders until further notice.**
August 27th, 2009	9.5	Marc Abend	Added ISO Order Type for NYSE Arca and NYSE Amex Options.
September 8, 2009	9.6	Erik Iodice	Added Complex PNP Plus and PNP Blind for NYSE Amex Options. Added Complex Options for NYSE Amex Options. Added Complex PNP Plus for NYSE Amex Options. Removed PNP Light to NYSE Arca Complex Orders.
September 30th, 2009	9.7	Marc Abend	Removed NYSE MatchPoint Messaging. MatchPoint Messaging has moved to a new specification on nyse.com.
October 26th, 2009	9.8	Erik Iodice	Modified "Values" text for ClOrdID of FIX Complex Cancel Request.
October 26th, 2009	9.8	Erik Iodice	Removed outdated item from complex order "General Information" (pg61).
November 10th, 2009	9.9	Erik Iodice	Modified "MaturityDate" to read "MaturityDay" (pg25/72).
November 10th, 2009	9.9	Erik Iodice	Cleaned up wording for description of Midpoint Passive Liquidity (MPL) Order.
November 10th, 2009	9.9	Erik Iodice	Cleaned up wording for Description and Value text regarding tag 58 on page 45.
December 4th, 2009	10	Erik Iodice	Added session indicator vs. expire time info (pg 13). And updated TradingSessionID info (pg 12).
December 4th, 2009	10	Erik Iodice	Updated certification info (pg 9).
February 3rd, 2010	10.1	Erik Iodice	Updated login sequence reset Details. (pg 31)

Contents

1 <u>Overview</u>

1.1 About this Document

This document describes the implementation of the FIX 4.0, 4.1 and 4.2 Protocols used by the NYSE Arca Exchange and for other NYSE Euronext related venues accessible via the NYSE Arca FIX Gateway.

It includes information pertaining to FIX communication with the following venues via the NYSE Arca FIX Gateway:

- NYSE Arca Equities (Including ArcaEdge Bulletin Board/Pinksheets)
- NYSE Arca Options
- NYSE Arca Complex Order Book
- NYSE Amex Options
- NYSE Bonds
- NYSE MatchPoint
- New York Block Exchange (NYBX)
- Liffe Routing System (LRS)

This document assumes the reader thoroughly understands the FIX 4.0, 4.1 and/or FIX 4.2 protocol available at http://www.fixprotocol.org/. This document is not intended as a guide to constructing a FIX client. Rather, it is a checklist to ensure that a firm's FIX client, constructed according to the FIX 4.0, 4.1, and 4.2 specifications, will be compatible with the NYSE Arca FIX Gateway on the ambiguous details of the FIX specification.

1.2 About the NYSE Arca FIX Gateway

The NYSE Arca FIX Gateway strictly follows the FIX 4.0, FIX 4.1 and 4.2 standards. Firms utilizing FIX 4.0, 4.1, or 4.2 systems should easily interface with the NYSE Arca FIX Gateway.

As new features become available in future versions of the FIX protocol and are implemented in the NYSE Arca FIX Gateway, NYSE Arca makes them available in all past FIX versions. As a result, any new fields introduced in FIX 4.3 and beyond that are supported by NYSE Arca can be available in FIX 4.0, 4.1, and 4.2. For instance, the DiscretionInst and DiscretionOffset fields were added in FIX 4.2, and these fields can be specified in FIX 4.0 or FIX 4.1 sessions to the ARCA FIX Host.

1.3 NYSE Arca FIX Certification

NYSE Arca offers a FIX gateway testing environment that can be used for certification and by clients to test changes made to their FIX engines. This environment supports most Arca specialized order types and is available daily from 4:00 AM EST to 8:00 PM EST. Please send an email to connectivity@nyx.com to obtain the appropriate connectivity information.

2   System Architecture

Each client sends orders to their assigned session and port on the NYSE Arca FIX Gateway. The NYSE Arca FIX Gateway then routes the order to the appropriate destination.

- The NYSE Arca FIX Gateway is designed to route orders to all destinations.
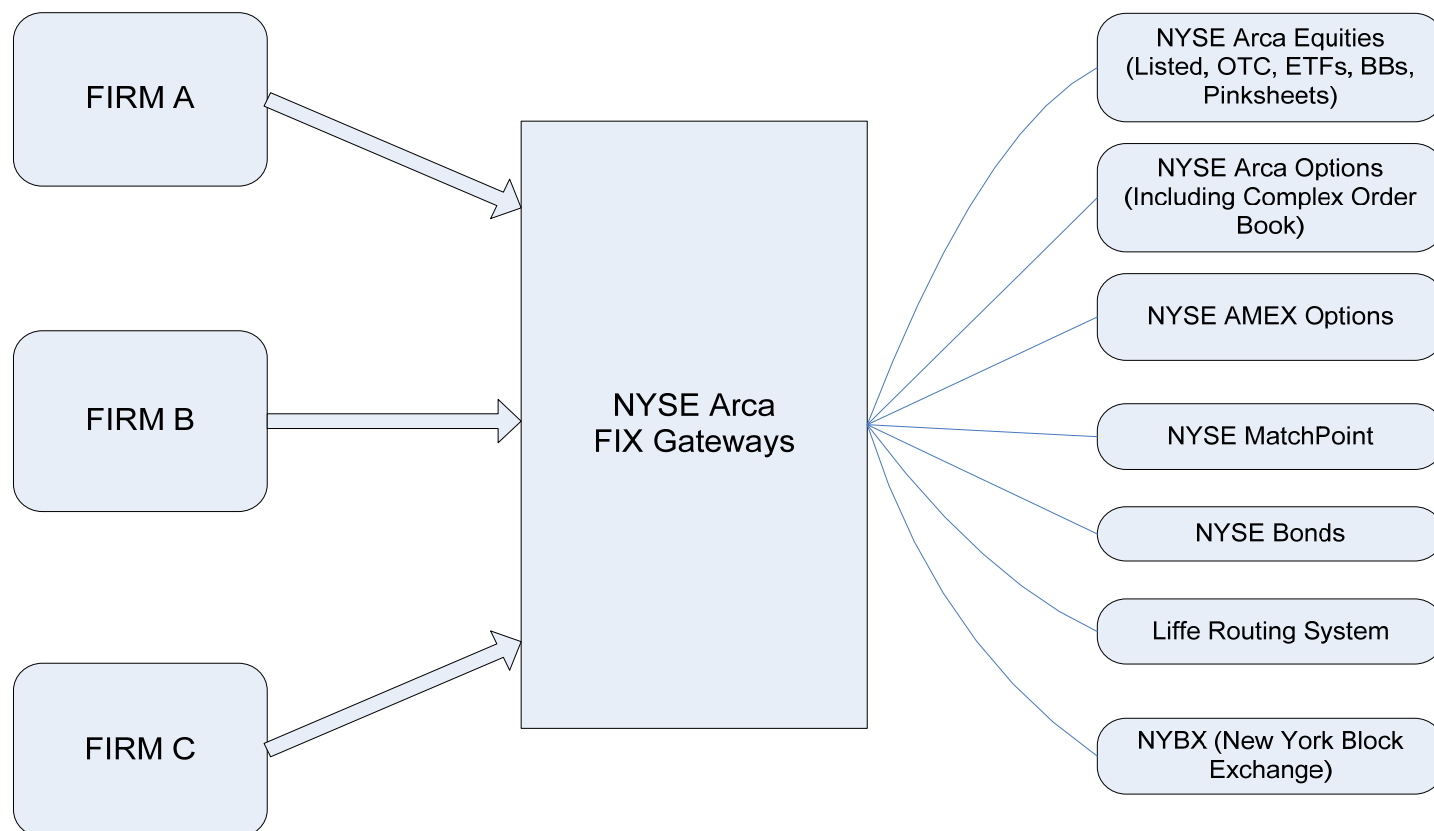
3 NYSE Arca Specific information

3.1 Decimalization

For all securities trading below $1.00, Users will be able to submit orders in price increments of up to four decimal places. Previously, orders submitted in sub-pennies were truncated or rounded. NYSE Arca will also route to away market centers in price increments of up to four decimal places.

Opening/Closing Auctions:
- Opening and Closing Auctions may occur in sub-penny increments.
- Any imbalance after the Opening Auction will be released into the market for core trading.

Pegs:
- Pegs eligible for execution in sub-penny prices will not be rejected.
- If the NBBO is quoted in a sub-penny price, and if the final price of the peg (including the offset) calculates to greater than or equal to $1.00, NYSE Arca will round or truncate to a penny based on the side of the market.
- If the NBBO is quoted in a sub-penny price, and if the final price of the leg (including the offset) calculates to under $1.00, NYSE Arca will maintain the sub-penny price on the peg.

The following order types may not utilize sub-penny prices:
- Discretion of less than $0.01.
- Offsets of any type of less than $0.01.
- If the midpoint of the NBBO calculates to 5 decimal places, the MPL and Midpoint cross orders will trade at the midpoint price truncated to 4 decimal places.

For Bulletin Board trading, NYSE Arca will accept out to the 6th decimal place. NYSE Arca will round as designated above for OTC and Listed securities if prices are sent in a smaller increment.

For Corporate Bonds trading, NYSE Arca will accept out to the 3rd decimal place. NYSE Arca will round as designated above for OTC and Listed securities if prices are sent in a smaller increment.

Clients are required to accept sub-penny values in execution reports sent by NYSE Arca. It is possible that a client can receive a price out to the 8th decimal place, or .12345678. This may occur when an order is routed out to another exchange for price improvement.

3.2 Hours of Operation

Hours of Operation for NYSE Arca Equities Exchange

Opening limit Auction – We start accepting orders for the auction at 3:30 AM

Session 1 (Opening Session) – 4:00 AM – 9:30 AM

Market Order Auction – 9:30 AM

Session 2 (Core Session) – 9:30 AM – 4:00 PM

Session 3 (Late Session) – 4:00 PM – 8:00 PM

Hours of Operation for the NYSE Arca Bulletin Board Exchange

Opening Auction – 7:30 AM-8:00 AM

Session 1 (Morning Session) – 8:00 AM – 9:30 AM

Session 2 (Core Session) – 9:30 AM – 4:00 PM

3.3   Trading Session ID

FIX 4.2 introduces specifying a list of TradingSessionID values in an order. Because TradingSessionID (336) is a repeating field, it is necessary to also send NoTradingSessions (386) to indicate the number of TradingSessionID tags that will be sent in the message. The NYSE Arca FIX Gateway supports these fields in FIX 4.0 and 4.1. Firms have several options in identifying the TimeInForce parameters, it is highly recommended that firms using a combination of TradingSessionID values to specify the sessions for which participation is desired.

Orders may be entered at any time after 3:30 AM.

Session 1 (TradingSessionID value "P1") orders participate in:

- Opening Auction
- Session 1 (Opening Session)
- Limit Order Auction
- Expire at 9:30 AM

Session 2 (TradingSessionID value "P2") orders participate in:

- Market Order Auction
- Session 2 (Core Session)
- Expire at 4:00 PM

Session 3 (TradingSessionID value "P3") orders participate in:

- Session 3 (Late Session) Listed and OTC Equities only (No BBs or Pinks)
- Expire at 8:00 PM

New Requirement to those firms who use session tags on orders, as of 8/8/2008: Both NoTradingSessions (386) and TradingSessionID (336) tag(s) will need to be accurately (and in unison) specified on the order. Tag 336 (repeating or not depending upon how many trading sessions your specifying in Tag 386) should immediately follow Tag 386, else the order will reject with the message: "Tag 336 (TradingSessionID) contains incorrect group count 1 for message type D . Expected count to be 0"

Examples of this new requirement and how they need to be specified in a FIX Order Message:

386=1 | 336=P1 (Early Session)
386=1 | 336=P2 (Core Session)
386=1 | 336=P3 (Late Session)
386=2 | 336=P1 | 336=P2 (Early and Core Sessions)
386=2 | 336=P2 | 336=P3 (Core and Late Sessions)
386=3 | 336=P1 | 336=P2 | 336=P3 (All three trading sessions)

TradingSessionID may be combined with a DAY order to provide accurate control of order execution. Combinations of TradingSessionID values may be used. For example, a DAY order might be specified with TradingSessionID values of "P1" "P2" and "P3".
On the Bulletin Board Exchange you must specify P1 and P2 in order to trade in the morning trading session. These orders will always stay open in the core session unless cancelled by the client.

DAY orders with no TradingSessionID qualifiers or other factors such as EffectiveTime default to being valid for Sessions 1 and 2 if placed between 3:30 AM and 4:00 PM, or will be rejected in the afterhours session.

3.4 Extended Hours

Extended hour trading was not well defined in the FIX specification prior to FIX 4.2. As a temporary solution, NYSE Arca introduced the concept of a "Day+" order, which spans all trading sessions. Day+ orders must be represented in one of two ways:

- Specify a TimeInForce of DAY (59=0) with NoTradingSessions(386)=3 and repeating TradingSessionID(336) values of "P1" "P2" and "P3" (386=3, 336=P1, 336=P2, 336-P3) .

- Specify a TimeInForce of GTD (59=6) and set an ExpireTime (Tag 126). This should only be used when an order is not set to expire at the end of a trading session. When an order is set to be expired at the end of a trading session, the TradingSessionID fields should **always** be used. Note that ExpireTime is formatted in UTC (formerly GMT). As a result, 8:00 PM Eastern Time will be represented as midnight of the following calendar day (20080801-00:00:00). This link will help you determine which time zone you should send: <http://www.dxing.com/utcgmt.htm>.

NYSE Arca Exchange supports EffectiveTime, which enables customers to stage orders for execution at a later time. This feature is particularly useful for submitting orders between 7:30 and 9:30 AM, which will be eligible for execution at the 9:30 AM open. Alternately, firms may wish to submit DAY orders between 3:30 and 9:30 AM with a NoTradingSessions (386) =1 and a TradingSessionID (336) value of "P2".

3.5 Multi Day orders (GTCs and GTDs)

Platforms this applies to:

- Equities
- Options
- Bonds

To send multi day orders clients must send the following on their order messages:

- Good Till Cancel: TimeInForce (Tag 59) = 1 (GTC).
- Good Till Date: TimeInForce (Tag 59) = 6 (GTD) (Same day GTDs only).
- The ClOrdID (Tag 11) must begin with the date! **No exceptions**. The format of the ClOrdID must start with YYYYMMDD. Example: 11=20080623-XXXXXXX or 11=20080623XXXXXXX.
- GTCs **must** have session tags and must not have Tag 9733, **No exceptions.** *If you do not include session tags in your GTC order or send Tag 9733 (Proactive If Locked) on the order, the order will expire at 9:30am the following day and not be active in any sessions.*
- GTDs using session tags will have their intended expire time overridden.

Note: If you receive a reject after sending a GTC or GTD Order with "58 = GTCs not allowed on this connection", then you need to contact the Client Connectivity Team to have your FIX session enabled for GTCs and GTDs.

Under certain circumstances NYSE Arca will make adjustments to price and quantity if there are corporate actions on multi day orders. If you do not want NYSE ARCA to make the adjustments, you may request that we cancel your orders if they are subject to corporate actions. Please call the NYSE Arca Trade Support number at (888) 513-9873 to request this. Please have the following information handy:

1.   ClOrdID(s) of the GTC or GTD Order(s)
2.   SenderCompID(s) of the FIX session(s) that the order(s) were routed to NYSE Arca on.

3.6 NYSE Arca Defined FIX Fields

The following FIX fields have been added or created due to customer demand. They are used to assist customers in trade reconciliation and also for billing purposes.

LastMkt (Tag 30)

The FIX LastMkt field will be specified on execution reports containing trades.

Values for this field:

- P – NYSE Arca Equities
- BB- Bulletin Board
- N – Corporate Bonds
- MP – MatchPoint
- PO – NYSE Arca Options

The client may need this field for back office clearing and reporting purposes.

ExecBroker Field (Tag 76)

The FIX ExecBroker field can be specified on execution reports containing trades for equities. This will contain the ETPID (The NYSE ARCA Equity Trading Permit Identifier) of the customer submitting the order for execution. This is a configurable setting that is turned on at the request of the customer (ExecBroker only appears on executions done on the exchange). This is not available for Bulletin Board, Options, or Bonds trading.

Liquidity Indicator (Tag 9730)

The Liquidity indicator is a proprietary FIX field sent on execution reports by ARCA Exchange for OTC, Listed, and Bulletin Boards trades to indicate what effect an order has had on the liquidity of the book. Client's rates are determined by whether an order adds or removes liquidity from the book. The LiquidityIndicator is FIX Tag 9730 and is registered on the fixprotocol.org website.

The values that clients can expect to receive in this field are:

Executions on NYSE Arca

A = Liquidity Adding
B = Liquidity Adding while the order was not displayed
R = Liquidity Reducing
O = Liquidity Neutral – Orders executed in an auction

Routed Orders

X = Routed to another venue
F = Routed to NYSE where the order was liquidity adding at NYSE[*]
N = Routed to NYSE where the order was liquidity taking at NYSE
C = Routed to NYSE where the order participated in the opening or re-opening[*]

*Utilized when orders are routed to NYSE as day orders instead of Immediate or Cancel (IOC) Orders. The PO+ Order is an example of an order that may be routed as a Day Order.

This is a configurable setting that is turned on at the request of the customer. You must submit a request to have this field sent. Please email connectivity@nyx.com to request this on your sessions.

ArcaEX ID (Tag 9731)

This proprietary tag (9731) is populated by a numeric ID that is generated by the Equities (Listed and OTC) Exchanges. Both sides of the trade have the same id. It is used by the client to uniquely identify executions and it is included in the end of day RIO clearing file. This is not available for Bulletin Board trading. You must submit a request to have this field sent. Please email connectivity@nyx.com to request this on your sessions.

Attributed Quote Indicator (Tag 9732)

This proprietary tag (9732) is set by the client to Y or N. The customer will set it to Y if they want their ETPID distributed through the ArcaBook quote feed instead of the standard ARCHIP.

Proactive If Locked Indicator (Tag 9733)
This proprietary tag (9733) is set by the client to Y on a Limit order for OTC names to indicate that an order should route outbound if Arca is locked by an away marketplace. A client can also request this to be enabled by default on a FIX session, where all OTC Limit orders will by default be appended with 9733=Y.

3.7   Trade Bust and Trade Correct Messaging

If or when the NYSE Arca Trade Desk changes or busts a trade, "Trade Break" or "Trade Correction" execution report messages can be sent outbound to the customer via FIX. **This is a per FIX session configurable option**. These messages will be defined in FIX with ExecTransType (20) =1 (Cancel) or 2 (Correct).

To request enabling this on a FIX session, please send an e-mail to connectivity@nyx.com with the name of the Firm, FIX session that you wish this enabled on and contact person.

4   NYSE Arca Equities Information

4.1   Equities Symbology

Orders for instruments with suffixes (different classes of stock, preferred stock, etc.) can be sent in one of two ways:

- Symbol and Suffix notation (i.e. 55=VIA 65=B, 55=AA 65=PR and 55=IBM 65=PRA)

- Comstock notation (i.e. "VIA.B" "AA-" and "IBM-A")

The FIX field for symbol suffixes is SymbolSfx (65). On all execution reports, symbols will be reported in Symbol and Suffix notation.

Symbology Reference for NYSE Arca Equities

Security Categorization	Comstock	Symbol/Sfx (Tag 65)
Preferred	-	PR
Preferred Class "A"	-A	PRA
Class "A"	.A	A
Warrants	+	WS
Warrants Class "A"	+A	WSA
Preferred "A" when issued	-A#	PRAWI
Rights	.R	RT
Units	.U	U
When issued	#	WI
Preferred when issued	-#	PRWI
Class "A" When issued	.A#	AWI
Test symbol	.TEST	TEST

4.2   Discretionary Orders

Discretionary orders have both a displayed price and a discretionary price. For example, a limit order to buy with a displayed price of 50 and a discretionary price of 50 ¼ is represented as:

Price = 50
DiscretionInst (388) = 0
DiscretionOffset (389) = 0.25

Note that DiscretionOffset is signed, and is always added to the displayed price to produce the discretionary price. As a result, when selling, the DiscretionOffset is negative. For example, a limit order to sell with a displayed price of 50 and a discretionary price of 49 ¾ is represented as:

Price = 50
DiscretionInst (388) = 0
DiscretionOffset (389) = -0.25

4.3   Pegged Orders

A variety of Pegged orders are currently offered on the Equities exchanges, specifying OrdType = Pegged (P) with an ExecInst (18) of P will indicate a Market Peg where an order to buy is pegged to the offer and an order to sell is pegged to the bid. An ExecInst (18) of R will indicate a Primary Peg where an order to buy is pegged to the bid and an order to sell is pegged to the offer. On a Market Peg, the price of the order must be pegged to an offset from the bid or the offer (this is optional for the Primary Peg). This is accomplished through the FIX 4.1 field PegDifference (211). On a Primary Peg, when pegging to the offer

(selling) you must specify a positive value in PegDifference (211) and when pegging to the bid (buying) you must specify a negative value in PegDifference (211). On a Market Peg, when pegging to the offer (buying) you must specify a negative value in PegDifference (211) and when pegging to the bid (selling) you must specify a positive value in PegDifference (211). A limit price may be set on a pegged order to prevent the order from following the NBBO past a certain price. This is done using the Price (44) field. Pegged orders can also be combined with DiscretionInst (388) and DiscretionOffset (389) to specify a hidden price range as well as MaxFloor (111) to indicate hidden volume.

	OrdType(40)	ExecInst(18)	Buy	Sell	PegDifference(211)
Primary	P	R	Peg to Bid	Peg to Offer	Optional: - buy / + sell
Market	P	P	Peg to Offer	Peg to Bid	Required: - buy / + sell

4.4   Crossing Orders

A Crossing order is represented as a single FIX order with Side = Cross (8) or Cross Short (9). For example, a broker wants to cross 1000 shares of stock at a price of 50. This is sent as a Limit order with Side = Cross. On the Listed and OTC Exchanges, Cross orders can also be combined with TimeInForce (59) =3 for IOC, ExecInst (18) =M for Midpoint Cross, or ExecInst (18) =6 for Post no preference. Cross orders can behave in a number of ways. Please note that any Cross with a TimeInForce (59) =3 will never interact with the book and a Cross with ExecInst (18) =6 and TimeInForce (59) =5 will Cross and Post on the book.

- The Exchange allows the broker to cross the shares. In this case, the Execution Report would show a trade with Side = Cross, LastShares = 1000, and LastPx = 50. No shares are traded with the Exchange; the broker is allowed to cross those 1000 shares internally at the price of 50.
- The Exchange trades one side of the cross, for the entirety of the volume. For instance, the broker may receive two Execution Reports, one with Side = Buy, LastShares = 400, LastPx = 49.875, and one with Side = Buy, LastShares = 600, LastPx = 50. In this case, the broker bought all 1000 shares from the Exchange. The order is considered filled, even though the broker may need to make a sale for 1000 shares in the account of the party wishing to be on the selling side of the cross. The remainder of the Cross can be posted to the book by specifying ExecInst (18) =6 and TimeInForce (59) =5.
- The Exchange trades part of one side of the cross, and allows the broker to cross the remainder of the shares. For instance, the broker may receive two Execution Reports, one with Side = Buy, LastShares = 400, LastPx = 49.875, and one with Side = Cross, LastShares = 600, LastPx = 50. In this case, the broker bought 400 shares from the Exchange, and is allowed to cross 600 shares internally at a price of 50. The order is considered filled, even though the broker may need to make a sale for 400 shares in the account of the party wishing to be on the selling side of the cross. The remainder of the Cross can be posted to the book by specifying ExecInst (18) =6 and TimeInForce (59) =5.

Due to the dual-sided nature of the above Cross orders, an extension is being made to Rule80A to indicate differences in capacity between the buying and selling side of the Cross order.

Buy Side	Sell Side	Rule80A Indicator
Agency	Agency	**A** or **F**
Principal	Principal	**P** or **E**
Agency	Principal	**J** or **X**
Principal	Agency	**K** or **H**

4.5   Portfolio Crossing Service

The Portfolio Crossing Service (PCS) would allow for the execution and reporting of entire portfolios (baskets) of stock with the ArcaEx trading system without interaction with the book or with other PCS orders.

PCS Portfolios must be comprised of at least 15 symbols and have a total market value of at least $1,000,000. The PCS system will not proactively enforce this rule but PCX surveillance will verify by the use T+1 reports that these rules are being adhered to.

Order Entry

In order to use PCS, ETPID holders will input individual PNP Cross Orders with "PCS" in the DeliverToCompID (128) to NYSE Arca. Each PCS Cross must have a basket order number identifier – ClOrdLinkID (583) tying it to the other orders in the basket. The order will otherwise be marked as a regular PNP Cross Order with all fields filled in. (see the order types section at the end of this document for the PNP cross order fields)

Trading

- ETPID holders may enter PCS orders at anytime during the trading day.

- When the PCS Process receives a PCS Cross Order it will hold the order. At 8:01, PCS will execute all PCS Crosses. PCS Crosses do not interact with any other orders including other PCS Crosses.

- PCS orders may be cancelled at any time before 8:00 PM ET. PCS will not support the bundled cancel replace functionality but a new order may be entered by the ETP.

·   Summary of PCS FIX fields

Side (54) = 8 (cross) and 9 (cross short)

ClOrdLinkID (583) = a client assigned id that will uniquely identify each order as being part of a basket. There is a 5 character limitation on this value. The ClOrdLinkID must begin with a two character value denoting the type portfolio being crossed as described below:

- AT – Agency Trading

- CF – Customer Facilitation

- EP – Exchange for Physicals

- IA – Index Arbitrage

- AE –Arbitrage of Exchange Traded Funds

- LE – Liquidation of Error Account Position

- QA – Quantitative or Statistical Arbitrage

- PT – Proprietary Trading

- RM – Risk Modification/Hedging

DeliverToCompID (128) = PCS

ExecInst (18) = 6 (PNP)

4.6 Auction Orders (NYSE Arca Primary + All ETF Listings Only)

NYSE Arca offers both early and late auctions for **NYSE Arca Primary Listings and All ETF Listings only**. The schedule for these auctions is listed below.

- **Early Limit Order Auction – 4:00 AM EST**
- **Opening Market & Limit Order Auction – 9:30 AM EST**
- **Closing Market & Limit Order Auction – 4:00 PM EST**

Please note that there will be a freeze one minute before each auction. Orders cannot be cancelled during this time, and new orders that increase the imbalance will be rejected.

Opening Auctions

To place an order in the early auctions specify TimeInForce (59) =2 (at the opening) and the accompanying session tags depending on if it's a Market or Limit On Open order. Please see below *"Special Notes for Opening Auctions"*.

Special Notes for Opening Auctions

Please be aware that the following needs to be adhered to when sending orders to the Opening Market and Limit Order Auction (No exceptions!):

- Market on Open:

    Orders must be submitted before 9:29am and the FIX New Order Single (35=D) Message **MUST** contain the following Tags in order to be Opening Market Order Auction:

    OrdType (40) = 1 (Market)
    TimeInForce (59) = 2
    NoTradingSessions (386) =1
    TradingSessionID (336) =P2

- Limit on Open:

    Orders must be submitted before 9:29am and the FIX New Order Single (35=D) Message **MUST** contain the following Tags in order to be Opening Limit Order Auction:

    OrdType (40) = 2 (Limit)
    TimeInForce (59) = 2
    NoTradingSessions (386) =3
    TradingSessionID (336) =P1
    TradingSessionID (336) =P2
    TradingSessionID (336) =P3

For the Opening Auction Orders, people come up with the same question when seeing how we have the FIX tags coded for both Market and Limit On Open order types.

Here's a Fast FAQ to answer some of those questions:

1. What if I send a Market on Open after 9:30am?

    The order will be rejected with "Invalid trading session for Auction-Only"

2. What if I send a Limit on Open after 9:30am?

    The order will be accepted, and carry over to the next auction.

3. What if I send an On Open Order on a Non-Arca Primary Issue?

   The order will be rejected with "No ATO (At the Open)/MOA (Market Opening Auction) for non-primary" which means you cannot send an Auction order for a Non-Arca Primary symbol.

4. What if I send a Market on Open without the proper session tags?

   The order will be rejected.

5. What if I send a Limit on Open without the proper session tags?

   The order will be rejected.

<u>**Closing Auctions**</u>

To place an order in the late auctions (valid only for NYSE Arca primary symbols and all non-primary ETFs) specify OrdType (40) =5 (Market on close) or OrdType (40) =B (Limit on close). Using these tags will indicate that an order is to participate ONLY in the appropriate auction and expire if not filled. Any straight limit order placed before the limit order auctions will participate and stay live if not executed. Any straight market order placed before the early market order auction will participate and stay live if not executed. Market orders are not valid after the late market order auction.

4.7   Tracking Orders

The Tracking Limit order executes against orders that are about to route out of the ARCA book when the leaves quantity is less than or equal to the size of the tracking limit order. If the leaves size of the contra order is greater than the size of the Tracking Limit order then the Tracking limit order will not be executed.

For example, if a tracking order was entered for 300 shares and the leaves quantity of a contra order was 301, then the order would be routed and not interact with the tracking order.

Tracking Limit orders will execute only if the price of the Tracking Limit order is equal to or better than the price of the away markets that we are about to route to and will execute at the price of the NBBO. Tracking Limit orders are blind so a quote will not be posted. Once a Tracking limit order has been partially filled, the balance of the order will be cancelled.

4.8   Post No Preference Blind (PNP B) Order

If the price of the PNP B Order is at or through a protected quote, the PNP+ will go blind and will be placed on the book at the price of the contra quote. Marketable Contra Orders will execute first against the PNP B then the rest of the book. When the PBBO moves away from the price of the PNP B but the prices continue to overlap; the PNP B will remain blind but adjust its price to the PBBO. PNP B Orders will be ranked in time priority regardless of the price of the order when they are blind.

4.9   Self Trade Prevention Information

As a part of the new technology release scheduled for July 10, 2009, pending SEC filing, four Self-Trade Prevention (STP) modifiers will be made available to NYSE Arca users. The STP modifiers will allow firms to prevent two orders with the same ETP ID from executing against each other. ETP Holders may elect to add the STP modifiers to orders at the ETP ID level.

STP Cancel Newest (STPN)
An incoming order marked with the STPN modifier will not execute against opposite side resting interest marked with any of the STP modifiers from the same ETP ID. The incoming order marked with the STPN modifier will be cancelled back to the originating ETP ID. The resting order, which otherwise would have interacted with the incoming order by the same ETP ID, will remain on the NYSE Arca Book.

STP Cancel Oldest (STPO)

An incoming order marked with the STPO modifier will not execute against opposite side resting interest marked with any of the STP modifiers from the same ETP ID. The resting order, which otherwise would have interacted with the incoming order by the same ETP ID, will be cancelled back to the originating ETP ID. The incoming order marked with the STPO modifier will remain on the NYSE Arca Book.

STP Decrement and Cancel (STPD)

An incoming order marked with the STPD modifier will not execute against opposite side resting interest marked with any of the STP modifiers from the same ETP ID. If both orders are equivalent in size, both orders will be cancelled back to the originating ETP IDs. If the orders are not equivalent in size, the equivalent size will be cancelled back to the originating ETP IDs and the larger order will be decremented by the size of the smaller order with the balance remaining on the NYSE Arca Book.

STP Cancel Both (STPC)

An incoming order marked with the STPC modifier will not execute against opposite side resting interest marked with any of the STP modifiers from the same ETP ID. The entire size of both orders will be cancelled back to originating ETP ID.

General Notes

- STP modifiers are intended to prevent interaction between the same ETP ID.
- STP modifiers must be present on both the buy and the sell order in order to prevent a trade from occurring and to effect a cancel instruction.
- An incoming STP order cannot cancel through resting orders that have price and/or time priority.
- When an order with an STP modifier is entered it will first interact with all available interest in accordance with the Order Ranking and Display process pursuant to Exchange Rule 7.36.
- If there is a remaining balance on the order after trading with all orders with higher priority, it may then interact with an opposite side STP order in accordance with the rules established above.
- In situations where there are multiple STP orders resting in the NYSE Arca Book, an incoming STP order will only interact with the first resting STP order that it encounters.
- Incoming STP orders that are priced through the price of a resting STP order may cancel the resting order as long as no other non-STP orders have priority. Additionally, orders marked with one of the STP modifiers will not be prevented from interacting during any Auction process as defined by Rule 7.35.

4.10 Market Making via FIX (Equities Only)

Q Orders and Oddlot Dealers

ETP Holders that are registered as Market Makers for a given security may, through arrangement with NYSE Arca, use FIX to post quotations to make markets. ETP Holders post their quotes via Q Orders, and trades occur against them.

A FIX Market Maker that also wishes to be an Odd-Lot Dealer in a particular symbol must establish two independent FIX sessions to NYSE ARCA. One session is used solely for the Market Maker to send Q orders and receive trades against those Q Orders. The other session is a one-way flow of unsolicited execution reports that are the results of odd lot and Cleanup Order executions.

A Q Order in FIX is represented by the non-standard use of "q" (lower-case Q) as the OrdType (40).

Clients will be required to specify the trader name for the Market Maker in the SenderSubID (50)

Clients may also post auto-refreshing quotes* by specifying MaxFloor (111) =display/fill size in conjunction with DiscretionInst (388) =0 and DiscretionOffset (389) =delta.

Example:

A Market Maker enters a buy "Q" order at 25 with an OrderQty (38) = 2000 MaxFloor (111) =500 and DiscretionOffset=.-05 the order will post 500 shares, if 500 shares are filled the order will refresh at the same quantity but at a price of 24.95. This will continue until the entire quantity on the order is filled.

DiscretionOffset must be negative for buys and positive for sells.

NYSE Arca System Generated Two Sided quote orders (Auto "q" Orders)

In order to help our Market Maker clients maintain their two sided quotes on ArcaEx we have developed Two Sided quote functionality. This functionality is designed to enter two sided markets on behalf of registered Market Maker without the market maker having to enter their markets manually. Customers need to contact their NYSE Arca Sales reps with the market parameters that they want set for the stocks that they are registered to make markets in. These parameters define when and where in relation to the market the two sided quote orders should be entered.

Each morning when NYSE Arca enters the two sided quote orders (two sided quotes are always ordtype=q) for the market maker an ack will be delivered down the session defined by the customer. Customers will use the information to interact with the system generated orders (enter cancels/replaces and receive fills/outs). Because the orders are generated by the NYSE Arca matching engine, we will need to assign ClOrdIDs to the orders. We will follow the below pattern for ClOrdIDs on these orders. Please be sure that you do not use this pattern for any other orders that are sent to NYSE Arca as it will cause duplicate ClOrdID rejects.

ClOrdID = SYMBOL (+ Suffix if there is one)-Bid/Ask, e.g. "CNBC-Ask"

If there is more than 1 bid or ask quote in a particular symbol, then the ClOrdID will be in the following format.

<Symbol>[.SymbolSuffix]-Bid-(Sequential #)
<Symbol>[.SymbolSuffix]-Ask-(Sequential #)

Example: Symbol without Suffix
Initial Bid quote in GM   ClOrdID = GM-Bid
Second Bid Quote in GM   ClOrdID = GM-Bid-1
Third Bid Quote in GM   ClOrdID = GM-Bid-2

Initial Ask quote in GM   ClOrdID = GM-Ask
Second Ask Quote in GM   ClOrdID = GM-Ask-1
Third Ask Quote in GM   ClOrdID = GM-Ask-2

Example: Symbol with Suffix
Initial Bid quote in M.TEST   ClOrdID = M.TEST-Bid
Second Bid Quote in M.TEST   ClOrdID = M.TEST-Bid-1
Third Bid Quote in M.TEST   ClOrdID = M.TEST-Bid-2

Initial Ask quote in M.TEST   ClOrdID = M.TEST-Ask
Second Ask Quote in M.TEST   ClOrdID = M.TEST-Ask-1
Third Ask Quote in M.TEST   ClOrdID = M.TEST-Ask-2

During the trading day, if these systems generated two sided quote orders are filled or canceled for any reason NYSE Arca will not resubmit the two sided quotes, clients must resubmit them manually.

● Please note that the auto-refresh capabilities are not yet available in production. Clients can test the functionality on the Arca certification website.

Passive Liquidity Orders (PL)

The PL Order is a non-displayed order that takes priority ahead of the NYSE Arca display book if the price of the PL Order is at least one penny better than the best NYSE Arca displayed price. At a price, the PL Order loses priority to all displayed interest.

In issues where NYSE Arca is the primary listings market and there is a Lead Market Maker, the Passive Liquidity Order will be available to the Lead Market Maker only; provided, however, that a buy (sell) Passive Liquidity Order in such instance shall execute against an incoming sell (buy) marketable order

only if one of the following conditions are met: (a) the NYSE Arca Book is at the national best bid (offer) and the Lead Market Maker has a displayed bid (offer) equal to the NYSE Arca Marketplace best bid (offer) with a quoted size at least as large as the total size of the incoming marketable sell (buy) order against which the Passive Liquidity Order would trade; or (b) the NYSE Arca Book is at the national best bid (offer) and the Lead Market Maker has a displayed bid (offer) $0.01 below (above) the NYSE Arca Marketplace best bid (offer) with a quoted size at least twice as large as the total size of the incoming marketable sell (buy) order against which the Passive Liquidity Order would trade; or (c) where the NYSE Arca Book is not at the national best bid (offer) AND the price of the Passive Liquidity Order is at least $0.01 higher (lower) than the NYSE Arca Book best bid (offer) AND the incoming marketable order is not designated as an "inter-market sweep" order per Regulation NMS. A Passive Liquidity Order shall not execute if it is priced below other orders in the NYSE Arca Book or if the NYSE Arca Book is at the national best bid (offer) and the Lead Market Maker does not have a displayed order within $0.01 of the NYSE Arca Marketplace best bid (offer).

Midpoint Passive Liquidity (MPL) Order

As in the Passive liquidity order, MPLs are not displayed. MPLs will be executable at the midpoint of the NBBO down to 3 decimal places if necessary when the spread is an odd number. They do not receive price improvement. They will generally interact with all order types including contra MPLs but excluding Cross Orders, Directed Orders and Non-Displayed orders in certain circumstances. When the market is locked, MPLs will trade at the locked price and when the market is crossed, eligible MPLs will wait for the market to uncross (but not necessarily unlock) before becoming eligible to trade again. MPL Orders will be ranked in time priority for the purposes of execution as long as the midpoint is within the limit range of the order. MPL orders will have a minimum entry size of 100 shares and can have an optional Minimum Execution Size (MES) condition, it's not required though.

NOTE: If you do not want to interact with Midpoint Liquidity orders, send Tag 9416=0 on your New Order Single (35=D) Message. This is only available when NOT sending an MPL order.

4.11 NYSE Arca Rule 80A Processing

Listed orders must contain the Rule80A field.

Orders sent to ArcaEx that contain the following capacity flags in the "Rule80A" FIX field will be eligible for routing to the NYSE for execution via DOT if the 80(a) curbs are not in place. Since "D" and "M" flagged orders will never be routed to the NYSE via DOT when 80(a) curbs are in place, Buy-or Sell+ indicators on these orders will be ignored.

D = Program Trade, Index Arbitrage, Member as Principal.

M = Program Trade, Index Arbitrage, member as Agent for Unaffiliated Member.

Although orders that contain "D" or "M" capacity flags will be rejected by the ArcaEx's DOT service provider when 80(a) curbs are in place on the NYSE, ArcaEx will continue to process these orders – routing to NYSE through ITS or routing to other markets.

Orders sent to ArcaEx that contain the following capacity flags in the "Rule80A" FIX field will always be eligible for routing to the NYSE for execution via any DOT provider.

C = Program Trade, Non-Index Arbitrage, Member as Agent for Unaffiliated Member.

N = Program Trade, Non-Index Arbitrage, Member as Agent for Unaffiliated Member.

All the above capacity flags (D, M, C and N) should only be used by ETPID Holders that are also NYSE member firms and plan on reporting these transactions on the Daily Program Trade Report.

Capacity Flags NOT Routed to the NYSE

ArcaEx will not route orders that contain the following capacity flags in the "Rule80A" FIX field to the NYSE for execution via DOT. Instead, orders that contain these capacity flags will be routed to the NYSE or other listed markets via ITS or through other appropriate routing linkages.

J = Program Trade, Index Arbitrage, Individual Investor.

U = Program Trade, Index Arbitrage, Other Agency.

K = Program Trade, Non-Index Arbitrage, Individual Investor.

Y = Program Trade, Non-Index Arbitrage, Other Agency.

5   NYSE Arca Options Information

5.1   Hours of Operation

Hours of Operation for NYSE Arca Options Exchange

 Core Session – 3:30 AM – 4:00 PM

5.2   NYSE Arca Options Symbology

NYSE Arca Options supports two styles of symbology for entering Options orders.

OCC Style – up to 6 characters
Symbol (55) = MSQ
MaturityMonthYear (200) = 200510
PutOrCall (201) = 1
StrikePrice (202) = 22.5

OCC Explicit – up to 6 characters **(Available in Test)**
Symbol (55) = MSFT
MaturityMonthYear (200) = 200906
PutOrCall (201) = 1
StrikePrice (202) = 20
MaturityDay (205) = 20

5.3   NYSE Arca Options - OSI Symbology Testing

As of 6/15/2009, Explicit symbology testing will be available in our Arca Options test environment which will require separate connectivity from the ordinary test platform. A new session can be requested at anytime from Connectivity@nyx.com.

For an outright order, you must enter FIX Tags 55, 200, 201, 202 and 205 to identify the series in explicit format. If the number of shares the option series represents is not 100, then you must add FIX Tag 231 to your message also.

For more information on the upcoming OCC OSI changes, please see the following links:

http://www.optionsclearing.com/initiatives/symbology

http://www.optionsclearing.com/initiatives/symbology/osi_consolidation_plan.pdf

5.4   Options Specific FIX Tag Information

In addition to requirements for the standard FIX message header, the following fields are used by the application layer for a New Order – Single message for Options.

Tag	Field	Description	Req.	Values
55	Symbol	OCC Explicit Underlying Symbol	Y	OCC Explicit Underlying Symbol
77	OpenClose	Indicates status of client position in the option.	Y	O=Open, C=Close
167	SecurityType	Identifies type of instrument.	Y	OPT= Options
200	MaturityMonth	Indicates Maturity Month	Y	YYYYMM
201	PutOrCall	Indicates Put or Call	Y	0=Put, 1=Call

202	StrikePrice	Indicates Strike Price	Y	0 – 99999999.9999
204	Customer/Firm/ Broker/MarketMaker	Indicates Client role in order	Y	0=Customer 1=Firm 2=Broker, 3=Marketmaker
205	MaturityDay	Indicates Maturity Day for series	Y	DD
231	ContractMultiplier	Indicates the ratio or multiply factor to convert from contracts to shares (e.g. 1.0, 100, 1000, etc).	Y ©	Numerical Value (Required only if number of shares in options series is not equal to 100)

Optional Tags needed on certain Option orders regardless of Symbology Style:

Tag	Field	Description	Req.	Values
1	Account	If this field is present, we copy the information into execution messages referring to this order. This field can be used for clearing information.	N	Agreed upon clearing value
440	ClearingAccount	Indicates OCC number of the clearing firm for CMTA.	N	≤ 4 characters (Used only if firm supports CMTA)
526	Optional Data	Customer Defined Identifier used for clearing purposes.	N	Up to 16 Characters – Alpha Numeric

5.5   Specific FIX Tag Information for Market Maker Orders

In addition to the required tags in section 5.3, option orders that are entered in a market maker (204=3) capacity must have a valid MarketMaker ID (MMID) in the SenderSubID field. If you are a local market maker you must enter your OX MMID in Tag 50. If you are entering the order as an away market maker you must enter MM-XXX (where XXX = the away MMID) in Tag 50.

Tag	Field	Description	Req.	Values
50	SenderSubID	Local or Away MMID. If Local Market Maker 50 = MMID If Away Market Maker 50 = MM-(MMID of away Market Maker)	Y	Customer defined. For Market Makers this value will be agreed up on between ARCA and client.
204	Customer/Firm/ Broker/MarketMaker	Indicates Client role in order	Y	3=Marketmaker

FIX Market Making quoting is not available for Options. For Options Market Making please refer to our latest Market Maker Direct Spec:

http://www.nyse.com/pdfs/MM_Direct_Specification_for_Options.pdf

5.6   Fast Cancel/Replace – Options Only

Fast cancel replace functionality is available on Options PNP orders only. One can change the volume and/or price only. All other fields will be ignored. Unlike standard cancel replace messages on our platform you will receive one execution report (MsgType=8) indicating that the order is replaced. You will not receive a pending cancel replace message.

To send a fast cancel replace you must include the ExtendedExecInst (Custom Tag 9416) = 1 in your cancel replace message. Unlike traditional cancel replaces where the ClOrdID changes each time you modify an order, the fast cancel replace maintains the ClOrdID of the first order that was entered, therefore you must send the ClOrdID of the first order in the order chain in the OrigClOrdID (Tag 41). The OrderID (Tag 37) of the original order must also be included.

*Please keep in mind, you must still send a unique ClOrdID (Tag 11) along with each Fast Cancel Replace, but the order will not be Replaced on that ClOrdID.

This cancel replace logic is faster because all the fields in the replace message do not need to be parsed. Our matching engine will look at price and volume only and update the original order record.

Fast Cancel Replace is available for Option Orders only. Not available for Equities yet.

Sample Fast Cancel Replace Message:

Order
8=FIX.4.1|9=174|35=D|49=FIXT2|56=ARCA|34=54|57=ARCA|97=N|52=20071101-22:42:38|11=123456|54=1|38=1000|55=AA|40=2|44=1.20|18=6|59=0|47=A|21=1|202=50|200=200712|201=0|77=O|386=1|336=P2|167=OPT|10=032|

Acknowledgement
8=FIX.4.1|9=251|35=8|50=ARCA|34=56|49=ARCA|56=FIXT2|52=20071101-22:42:41|55=AA|37=600000013|11=123456|17=600002685|20=0|39=0|150=0|54=1|38=1000|40=2|44=1.2|59=0|31=0|32=0|14=0|6=0.000000|151=1000|60=20071101-22:42:40|58=New order|77=O|167=OPT|201=0|200=200712|202=50|10=101|

Fast Cancel Replace
8=FIX.4.1|9=194|35=G|49=FIXT2|56=ARCA|34=55|57=ARCA|52=20071101-22:43:22|**37=600000013**|**11=123457**|**41=123456**|54=1|38=1000|55=AA|40=2|44=1.20|21=1|47=A|59=0|**18=6**|202=50|200=200712|201=0|336=P2|386=1|**9416=1**|167=OPT|10=167|

Replaced – Fast
8=FIX.4.1|9=267|35=8|50=ARCA|34=57|49=ARCA|56=FIXT2|52=20071101-22:43:24|55=AA|**37=600000013**|**11=123456**|**41=123456**|17=600002686|20=0|39=5|150=5|54=1|38=1000|40=2|44=1.2|59=0|31=0|32=0|14=0|6=0.000000|151=1000|60=20071101-22:43:24|**58=Replaced – Fast**|77=O|167=OPT|201=0|200=200712|202=50|10=010|

5.7   OCC "Optional Data"

Any orders entered through the FIX protocol for which firms want information passed to clearing and back to them via the Options Clearing Corporation (OCC) Digital Data Service (DDS) must place that information in FIX Tag1. In this case, up to 13 characters of information from FIX Tag 1 will be transferred to the optional data field of the clearing record to be passed on to OCC.

The only exception to this is in the case of orders for "away market makers" (orders submitted via FIX for market makers who are not OTP holders of NYSE Arca Options). Such orders entered using the FIX protocol, are designated by the use of FIX Tag50, in which firms must place the value "MM-" followed by the trading symbol (up to four characters) of the off-floor market maker. In this case, the exchange utilizes that information for billing purposes and for proper submission to the OCC by placing that

value in the optional data field on the clearing record. If, in addition to designating an order for an away market maker through the placement of "MM-xxxx" in Tag 50 of the inbound record, a firm also includes data in Tag 1, whatever amount of that data that will fit will be appended to the "MM-xxxx" string in optional data on the clearing record and will be passed on to OCC. Orders for local market makers are designated by placing the local market maker symbol (e.g., "J40B") in FIX Tag 50. In this case, that value is *not* moved to the optional data field on the clearing record, leaving it completely free for whatever data may have been entered by the firm into FIX Tag 1.

Below are examples of the proper use of FIX Tag 50 to designate orders either for local or away market makers:

"Away" market makers:	FIX Tag 50 = "**MM-xxxx**" (where "xxxx" = the off-floor market maker acronym. In this case, the value of *MM-xxxx* is moved into the optional data field on the clearing record to assure proper clearance at OCC as well as to have the proper NYSE Arca fee applied.
"Local" market makers:	FIX Tag 50 = "xxxx" (where "xxxx" = the NYSE Arca local market maker acronym. In this case, the "xxxx" value is *not* placed in the optional data field of the clearing record. In this case the trade is made to look like any other trade done by a local market maker and appropriate NYSE Arca fees are applied.

Please note that the use of FIX Tag 1 for either local or away market makers is optional – not required – and should only be used to convey information for the introducing firm. In the case of orders for away market makers, whatever amount of data that will fit in the remaining space of the optional data field will be appended to the "MM-xxxx" string (e.g., MM-xxxx123456). In the case of local market maker orders, 13 characters of data from FIX Tag 1 will be placed in the optional data field of the clearing record.

6   NYSE Bonds Information

6.1   Introduction

The NYSE Bonds trading platform provides a more efficient and transparent way to trade a variety of Fixed Income products. The platform incorporates the design of the current NYSE Arca all-electronic trading system. This system provides investors with the ability to readily obtain transparent pricing and trading information. In addition to a broad selection of Corporate Bonds (including convertibles) and Structured Note Products, the NYSE Bond platform is also being expanded to include trading of Government Treasury products, including U.S. Treasury Bonds, Notes and Bills (Coming Soon).

6.2   Hours of Operation

Hours of Operation for NYSE Bonds

Session 1 (Early Session) – 4:00 AM – 9:30 AM

Session 2 (Core Session) – 9:30 AM – 4:00 PM

Session 3 (Late Session) – 4:00 PM – 8:00 PM

6.3   Bonds Symbology

Symbology for NYSE Bonds relies on the 9 Character CUSIP SecurityID (Tag 48) of the bond along with the IDSource Tag (22) identifying CUSIP as the source to read off of.

Tag 55 is not required on Bond orders via FIX. However, NYSE will return 55 = N/A on all Execution Reports regardless if any information was sent originally in the Bonds FIX New Order Single, Cancel, or Cancel/Replace message.

Please note: RIC or ISIN SecurityIDs are not allowed for NYSE Bond orders.

6.4   NYSE Bonds Specific FIX Tag Information

In addition to requirements for the standard FIX message header, the following fields are used by the application layer for a New Order – Single message for Bonds.

Tag	Field	Description	Req.	Values
167	SecurityType	Identifies type of instrument.	Y	OPT= Options CORP = Corporate Bonds TBOND = Treasury Bond TBILL = Treasury Bill TNOTE = Treasury Note
48	SecurityID	CUSIP Identifier	Y	CUSIP Identifier
22	IDSource	Indicates whether a CUSIP will be used.	Y	1= CUSIP
47	Rule80A	Indicates capacity on order	Y	A = Agency P = Principal
423	PriceType	Specified for Bonds orders. Indicates percentage of Par.	N	1= percentage of Par 4 = Discount – percentage points below par (Used for TBILL only)

6.5 Ex-Clearing Bonds FIX Information

Certain bonds issued by firms on the market do not always clear DTCC (Depository Trust & Clearing Corporation – http://www.dtcc.com/) and clearing for these bonds have to be handled directly with the firm traded with (Firm to Firm). These bonds are known as "Ex-Clearing" bonds

In the case of an "Ex-Clearing" bond trade, NYSE will return certain tags in the Execution Report of the Partial Fill or Fill to help the Buyer or Seller identify the counterparty (ContraParty) that they traded with in order for the 2 firms to clear the trade on their own.

The following FIX Tags are sent back on a Partial Fill or Fill Execution Report on an Ex-Clearing Bond:

| 375 | ContraBroker | Contains the ContraBroker on the execution | C | Will contain the NYSE Bonds ETPID of the contra |
| 382 | NoContraBrokers | Indicates the number of contras on a fill | C | If this tag is present in an execution report the recipient must clear directly with the contra party in Tag 375 (ContraBroker) |

6.6 Treasuries Decimalization (Not available yet)

Here is a fast summary of the decimalization you will see in Tag 44 on treasuries:

Treasury Bonds/Notes
TBOND/TNOTE: 0.0078125 or $1/128^{th}$ increment. **(7 decimals)**
167 = TBOND/TNOTE & 423 = 1

Treasury Bills
TBILL: yield pricing, 0.005 increment **(3 decimals)**
167 = TBILL and 423 = 4

Corporate Bonds
CORP Bonds: **2 decimals with increment of 0.01**
167 = CORP and 423 = 1

7   Session Protocol

This section discusses issues pertaining to the FIX Session Protocol, which is responsible for providing reliable, ordered transport of FIX Application messages.

All messages sent by your firm must have one SenderCompID and TargetCompID that is agreed upon in advance with NYSE Arca, and a TargetSubID of "ARCA".

Only the following FIX Session MsgTypes may be sent to the NYSE Arca FIX Gateway:

- Sequence Reset
- Logon
- Logout
- Heartbeat
- Test Request
- Resend Request
- Reject

7.1   Sequencing and Reconnecting

ARCA resets inbound and outbound numbers to 1 at midnight Eastern Time, which could lead to problems if your firm remains connected at midnight. Since FIX 4.0 does not support 24-hour connections well, your firm is required to log out before midnight, and connect again some time after midnight. We do not implement FIX 4.1 24-hour connections via the ResetSeqNumFlag field. In the event of a network or FIX gateway host failure during the day NYSE Arca does provide backup sessions under the same SenderCompID on alternative FIX gateways at customer request. Please note that these backup sessions are totally independent and will need to be connected to with inbound and outbound sequence numbers equal to 1. These sessions will not check orders sent as PossDupFlag=Y against orders sent previously on other Fix sessions with the same SenderCompID. These orders will be processed normally.

NYSE ARCA staff will not modify the incoming and outgoing sequence numbers of your live FIX sessions. If you are using FIX version 4.0 and need to reconnect, they can assist you with providing the sequence number the exchange is expecting you to login with. In the event that you are using FIX 4.1 or 4.2, and need to reset your sequence numbers, set ResetSeqNumFlag (tag 141) to Y.

Please use caution when forcing a sequence number change as sequence mismatch scenarios typically indicate a serious problem. Coordination with members of the NYSE ARCA Connectivity group is always recommended.

7.2   Logon

The logon message must be the first message you send after establishing a TCP connection on the port agreed upon with ARCA. EncryptMethod must be 0 – None, or 5 – PGP/DES-MD5, as agreed upon with ARCA. Your firm must wait for a Logon from ARCA before sending other messages and beginning gap fill operations.

If your firm disconnects during the trading day and reconnects again, the logon you will receive in reply may have a sequence number greater than expected. It is critical that your firm detects this condition and issues a Resend Request to retrieve any missed Executions.

Your firm must specify a heartbeat interval in the Logon message, which the NYSE Arca FIX Gateway will use to determine if the connection is active. The heartbeat information is documented in the Heartbeat and Test Request section.

7.3   Logout

It is your firm's responsibility to log out at the end of each day before midnight Eastern Time. You must verify, **prior to logout**, that there are no live or pending orders, otherwise your firm may miss trade reports.

The party initiating the logout must be the party that breaks the TCP connection to ARCA. This requirement allows for both sides to issue a Resend Request should the logout or its reply arrive with a sequence gap. If you receive a logout with a sequence gap, as per the protocol specification, issue a Resend Request and then your own logout.

7.4   Heartbeat and Test Request

The ARCA Host will use the heartbeat interval specified by the client in the Logon message to determine if the client is alive and the networks connecting your firm to NYSE Arca are functional. A value of 0 will disable this check, and the ARCA Host will not send test requests nor break the connection if the client becomes idle. We recommend a heartbeat interval of 30 seconds. A value too small will waste bandwidth, and a value too large will defeat the purpose of the heartbeat. After HeartBtInt + 2 seconds of inactivity, the ARCA Host will send a Test Request to determine if the firm is still active. After 2 * HeartBtInt + 4 seconds of inactivity, the ARCA Host will send a logout and immediately drop the connection. ARCA expects that your firm will use a similar method to determine if the ARCA Host is active.

7.5   Resend Request

If your firm receives a Resend Request with a sequence gap, it is critical that you resend the appropriate messages first before sending your own Resend Request.

The FIX protocol specification defines two methods to recover from gaps in messages. One method, should your firm receive messages 1-10, then 15, would be to request 11-14 and then process 15. We recommend against this method because it can cause certain race conditions that increase recovery time. Instead, we recommend that your firm discard message 15, and request messages 11-999999. ARCA will resend all messages with sequence numbers greater than or equal to 11. Note that this circumstance refers to the general case; the FIX protocol specification outlines more specific recovery behavior for certain out of sequence Administrative messages.

7.6   Reject

We recommend that your firm use the Reject message as sparingly as possible. As per the FIX specification, any message your firm rejects will not be resent. Your firm should keep a record of which messages the FIX Host rejects, and never resend them.

We will send a reject (Msgtype=3) in the event that a customer has sent a properly formatted message, but a data field (price for example) is not populated with a proper value.

7.7   Sequence Reset

It is required that a Sequence Reset – Gap Fill occurs in sequence. For instance, if resending 10-15, and 11-14 are Administrative messages other than Reject, the client should resend 10, then 11 should be a Sequence Reset – Gap Fill, with a NewSeqNum of 15, and then resend 15. As per the specification, all messages in answer to a Resend Request must be flagged Poss Dupe. We interpret this part of the specification to mean that the Sequence Reset – Gap Fill itself must be flagged Poss Dupe as well. This requirement is implied in FIX 4.0 and is made explicit in FIX 4.1.

A Sequence Reset – Gap Fill is the preferred method for handling errors. NYSE Arca will never send a Sequence Reset – Reset automatically. It is only sent by manual intervention, possibly to stop an endless loop of Resend Requests and resends, and we recommend that your firm do the same. We make no attempt to recover skipped messages when we receive a Sequence Reset – Reset, which is advantageous to breaking out of an infinite resend loop.

8   FIX Application Protocol

This section describes some of the FIX Application messages. It is not a complete reference and should be used in conjunction with the FIX protocol specification. Below is a quick legend to the Message tables that follow:

Tag	Field	Description	Platform	Req.	Values
Tag #	*Field Name*	*Field Description*	*E = Equities* *O = Options* *B = Bonds*	*Y = Required* *Y © = Required Conditionally* *N = Not Required* *C = Conditional*	*Valid Values for Field*

8.1   New Order – Single

In addition to requirements for the standard FIX message header, only the following fields are used by the application layer for a New Order – Single message. Any other fields specified in the message are ignored.

Tag	Field	Description	Platform	Req.	Values
	Standard Header		E, O, B	*Y*	*MsgType = D*
1	Account	If this field is present, we copy the information into execution messages referring to this order. This field can be used for clearing information.	E, O, B	N	Agreed upon clearing value
11	ClOrdID	This field contains the ID assigned to the order by the firm. This value must be <= 30 characters. It is critical that this ID is unique for all orders sent today. The FIX 4.0 protocol does not specify what to do if this ID is duplicated. We will ignore the order in FIX 4.0 if duplication occurs. In FIX 4.1 and 4.2, we send an Execution Report with ExecType, OrdStatus = Rejected, and OrdRejReason = Duplicate Order (6).	E, O, B	Y	Customer Defined <=30 characters
18	ExecInst	Used to specify values for different order types	E, O	N	1=Not held (Now orders only) 5=Held (Equities) 6=PNP R=Primary Peg (Equities) P=Market Peg (Equities) M= MPL (Midpoint Passive Liquidity, Equities) G= AON (Options) **9:45/3:45 Only** 7 = Primary until 9:45 then move to NYSE Arca 8 = NYSE Arca until 3:45 then move to primary 9 = Primary until 9:45am ET, then move to NYSE Arca – AND- NYSE Arca until 3:45pm

Tag	Field	Description	Platform	Req.	Values
					ET, then move to the primary.
22	IDSource	Indicates whether a CUSIP will be used.	B	Y	1= CUSIP
38	OrderQty	Indicates share quantity on order	E, O, B	Y	1-999,999
40	OrdType	Indicates order type	E, O, B	Y	1=Market 2=Limit 3=Stop (Options) 4=Stop Limit (Options) 5=MOC 7=Inside Limit B=LOC P=Pegged q=market maker (Equities)
44	Price	Indicates price on order in decimals. For Bonds indicates percentage of par.	E, O, B	Y	.01-99999.99 (Limit order only)
47	Rule80A	Indicates capacity on order	E	Y	A/F=Agency/Agency P/E=Principal/Principal J/X=Agency/Principal K/H=Principal/Agency (see section 4.10 for more detail) (Required on listed orders and crosses)
48	SecurityID	CUSIP Identifier	B	Y	CUSIP Identifier
50	SenderSubID	This field, if present, will be copied into the TargetSubID field of all messages referring to the order. Your firm must not embed dates, time stamps, or order IDs in this field, as doing so will make aggregation of orders for troubleshooting purposes impossible.	E, O	Y	Customer defined. For Market Makers this value will be agreed up on between ARCA and client. *For Options orders that are entered in a market maker (204=3) capacity you must enter a valid market maker ID MMID in this field. If you are a local market maker you must enter your OX MMID. If you are entering the order as an away market maker you must enter MM-XXX (where XXX = the away MMID).
52	SendingTime	This value must be within 60 seconds of the current time, or we will reject the order.	E, O, B	Y	Time in UTC format. YYYYMMDD-HH:MM:SS
54	Side	Only Buy, Sell, Sell Short, and in some cases, Cross and Cross Short	E, O, B	Y	1=Buy 2=Sell 5=Sell Short 8=Cross 9=Cross Short
55	Symbol	This field must contain a valid symbol in upper case lettering.	E, O	Y	Valid Symbol or Options Root Symbol

Tag	Field	Description	Platform	Req.	Values
57	TargetSubID	This field is required. The value must be "ARCA" for production. All messages referring to the order will have the SenderSubID set to this value.	E, O, B	Y	ARCA
59	TimeInForce	If a value is not present in this field, the default is Day.	E, O, B	N	0 = Day 1 = GTC 2 = At the Opening 3 = IOC 4 = FOK 5 = GTX (BB Only) 6 = GTD 7 = On Close (Optional for PO+ Only if 40=5 or 40=B is not used)
65	SymbolSfx	This field must contain a valid symbol in upper case lettering.	E	N	Valid Suffix value
76	ExecBroker	Set to POO on Primary Open Orders or PO+ for Primary Plus Orders.	E	N	PSO = Primary Sweep PSOS = Primary Sweep + Ship POO = Primary On Open PO+ = Primary Plus PO+S = Primary Plus Ship
77	OpenClose	Indicates status of client position in the option.	O	Y	O=Open, C=Close
97	PossResend	An order sent with PossResend set is checked to see if it matches an existing order with the same ClOrdID. If not, it is treated as a new order. If it is a duplicate, we will ignore the message if the order is on file.	E, O, B	N	Y
99	StopPx	Set to dictate stop price on stop orders(Options Only)	O	N	.01-99,9999
110	MinQty	Set to indicate quantity for minimum eligible fill on discretion orders	E, O, B	N	>100
111	MaxFloor	Used for reserve orders (see section 6.9 for more detail)	E, O	N	>100
114	LocateReqd	Indicates if ARCA is responsible for locating the stock for a sell short order	E	N	Y=Yes N=No
115	OnBehalfOfCompID	This field normally is ignored, although can be used for clearing information.	E, O, B	N	Agreed upon clearing value
126	ExpireTime	This field contains the date and time when an order expires. This field should only be specified when TimeInForce = GTD.	E, O, B	N	Time in UTC format. YYYYMMDD-HH:MM:SS **NOTE: The seconds component of this field is ignored.**

Tag	Field	Description	Platform	Req.	Values
167	SecurityType	Identifies type of instrument.	O, B	Y	OPT= Options CORP = Corporate Bonds TBOND = Treasury Bond TBILL = Treasury Bill TNOTE = Treasury Note
168	EffectiveTime	This field contains the date and time when the order becomes effective for trading. Orders must become effective on the same trading day they are placed, and while the Exit Vehicle is open for business.	E, O, B	N	Time in UTC format. YYYYMMDD-HH:MM:SS **NOTE: The seconds component of this field is ignored.**
200	MaturityMonth	Indicates Maturity Month	O	Y	YYYYMM
201	PutOrCall	Indicates Put or Call	O	Y	0=Put 1=Call
202	StrikePrice	Indicates Strike Price	O	Y	0 – 99999999.9999
204	Customer/Firm/ Broker/MarketMaker	Indicates Client role in order	O	Y	0=Customer 1=Firm 2=Broker, 3=Marketmaker* *see SenderSubID field in New Order-Single table
205	MaturityDay	Indicates Maturity Day for series with more than one expiration date in a month.	O	Y	DD
211	PegDifference	Refer to pegged orders section 4	E	N	-9999.99-9999.99
231	ContractMultiplier	Indicates the ratio or multiply factor to convert from contracts to shares (e.g. 1.0, 100, 1000, etc).	O	N	Numerical Value **(Required If number of shares in options series is not equal to 100)**
336	TradingSessionID **(NOTE: REPEATING GROUP!)**	Indicates trading session order is designated for.	E, O, B	N	P1=Pre Open P2=Core P3=Post Market
386	NoTradingSessions	The number of instances of TradingSessionID values following.	E, O, B	N	1-3 (Must come before 336 Tag(s)
388	DiscretionInst	Refer to discretionary orders section 3.1.6	E	N	0
389	DiscretionOffset	Refer to discretionary orders section	E	N	-9999.99-9999.99
423	PriceType	Specified for Bonds orders. Indicates percentage of Par.	B	N	1= percentage of Par 4 = Discount – percentage points below par (Used for TBILL only)
440	ClearingAccount	Indicates OCC number of the clearing firm for CMTA.	O	N	≤ 4 characters
526	Optional Data	Customer Defined Identifier used for clearing purposes.	O	N	Up to 16 Characters – Alpha Numeric

Tag	Field	Description	Platform	Req.	Values
7928	NoSelfTrade	If used will prevent the order from trading against another order from the same ETPID	E	N	N = Cancel Newest O = Cancel Oldest C = Cancel Both D = Decrement
8020	Display Range	Used for Random Reserve orders to indicate the display range	E	N	0-999,999
8021	Passive Discretion	Set to indicate that a discretionary order should not route away from NYSE Arca.	E	N	0
9416	ExtendedExecInst	Used for the following: To indicate no interaction with Midpoint Passive Liquidity (MPL) Orders. To indicate a Fast Cxl/Replace is being used (Options). To indicate no interaction with the IOI Dark Pool quotes (Equities).	E, O	N	0 = No interaction with MPL Orders. (Equities) 1 = Fast Cancel replace (Options Only) – **Required** 2 = Opt out of interaction with IOI Dark Pool Quotes (Equities Only) A = Add Liquidity Only W = Wait Order (Options Only)
9417	ExtendedPNP	Used to indicate if the order is PNP Blind	E, O	N	B = PNP Blind **(Required for PNP Blind)** L = PNP Light (Options Only)
9732	Attributed Quote	Set to Y if to indicate that ETPID distributed through the ARCABook quote feed instead of the standard ARCHIP.	E	N	Y
9733	Proactive If Locked	Set to Y on a Limit order for Listed and OTC names to indicate that an order should route outbound if Arca is locked by an away marketplace.	E	N	Y
	Standard Footer		E, O, B	*Y*	

8.2   Order Cancel Request

In addition to requirements for the standard FIX message header, only the following fields are used by the application layer for an Order Cancel Request. Any other fields specified in the message are ignored.

Tag	Field	Description	Platform	Req.	Values
	Standard Header		E, O, B	*Y*	*MsgType = F*
11	ClOrdID	This field contains the ID assigned to the change by your firm. This value must be <= 49 characters. It is critical that this ID is unique for all orders and changes sent today, as well as any orders or changes that may be active from previous days. If this value is duplicated; we will send a Cancel Reject.	E, O, B	Y	User specified up to 30 characters
18	ExecInst	This value must match the original order.	E, O	Y	1=not held 5=held 6=PNP G=AON R=Primary Peg P=Market Peg M= MPL
22	IDSource	This value must match the original order.	B	Y	1= CUSIP
37	OrderID	If present, the value must exactly match the OrderID NYSE Arca assigns to the order.	E, O, B	N	Numerical up to 9 characters (Equities*/Bonds) *Will change to 20 characters for NYSE Arca Equities when UTP goes live* Numerical up to 20 characters(Options)
38	OrderQty	This value must match the original order.	E, O, B	Y	1-999,999
40	OrdType	This value must match the original order.	E, O, B	Y	1=Market 2=Limit 5=MOC (Market On Close) 7=Inside Limit B=LOC (Limit on Close) P=Pegged q=market maker
41	OrigClOrdID	This value must match the ClOrdID of the order or replaced order being cancelled. This value is the ClOrdID of the most current successful change. If the order was not changed/replaced, then this	E, O, B	Y	User specified up to 30 characters

Tag	Field	Description	Platform	Req.	Values
		will be the ClOrdID of the original order.			
44	Price	This value must match the original order.	E, O, B	Y	.01-9999.99
47	Rule80A	This value must match the original order.	E	Y	A/F=Agency/Agency P/E=Principal/Principal J/X=Agency/Principal K/H=Principal/Agency
48	SecurityID	This value must match the original order.	B	Y	CUSIP Identifier
52	SendingTime	This value must be within 60 seconds of the current time, or we will reject the order.	E, O, B	Y	Time specified in UTC time. YYYYMMDD-HH-MM-SS
54	Side	This value must match the original order.	E, O, B	Y	1=Buy 2=Sell 5=Sell Short 8=Cross 9=Cross Short
55	Symbol	This value must match the original order.	E, O	Y	Valid Symbol or OCC Options Series Symbol
59	TimeInForce	This value must match the original order.	E, O, B	Y	0=Day 1=GTC 2=At the Opening 3=IOC 6=GTD 7 = On Close (Optional for PO+ Only if 40=5 or 40=B is not used)
65	SymbolSfx	This value must match the original order.	E, O, B	Y	Valid Suffix value
76	ExecBroker	Used on ETPID Bulk Cancel Only.	E	N	ETPID of connections you wish to Bulk Cancel your orders for.
97	PossResend	A change request sent with PossResend set is checked to see if it matches an existing order with the same ClOrdID.	E, O, B	N	Y
99	StopPx	This value must match the original order.	O	Y ©	.01-99,999 (Required if specified on the original order)
111	MaxFloor	This value must match the original order.	B	Y ©	>100 (Required if specified on the original order)
126	ExpireTime	This value must match the original order.	E, O	Y	Time specified in UTC time. YYYYMMDD-HH-MM-SS
167	SecurityType	This must match the value of the original order.	O, B	Y	OPT= Options CORP = Corporate Bonds TBOND = Treasury Bond

Tag	Field	Description	Platform	Req.	Values
					TBILL = Treasury Bill
					TNOTE = Treasury Note
168	EffectiveTime	This value must match the original order.	E, O, B	Y	Time specified in UTC time. YYYYMMDD-HH-MM-SS
200	MaturityMonth	This must match the value of the original order.	O	Y	YYYYMM
201	PutOrCall	This must match the value of the original order.	O	Y	0=Put, 1=Call
202	StrikePrice	This must match the value of the original order.	O	Y	0 – 99999999.9999
205	MaturityDay	This must match the value on the original order.	O	Y	DD
211	PegDifference	This value must match the original order.	E	Y ©	-9,999.99-9,999.99 (Required if specified on the original order)
388	DiscretionInst	This value must match the original order.	E	Y ©	0 (Required if specified on the original order)
389	DiscretionOffset	This value must match the original order.	E	Y ©	-9,999.99-9,999.99 (Required if specified on the original order)
423	PriceType	This must match the value of the original order.	B	Y ©	1= percentage of Par 4 = Discount (On Ttreasury Bills – TBILL only)
440	ClearingAccount	This must match the value of the original order.	O	Y ©	≤ 4 characters (Required if specified on the original order)
	Standard Footer		E, O, B	*Y*	

8.3   Cancel/Replace Request

In addition to requirements for the standard FIX message header, only the following fields are used by the application layer for an Order Cancel/Replace (Change) Request. Any other fields specified in the message are ignored.

Tag	Field	Description	Platform	Req.	Values
	Standard Header		E, O, B	*Y*	*MsgType = G*
11	ClOrdID	This field contains the ID assigned to the change by your firm. This value must be <= 49 characters. It is critical that this ID is unique for all orders and changes sent today, as well as any orders or changes that may be active from previous days. If this value is duplicated; we will send a Cancel Reject.	E, O, B	Y	User specified up to 30 characters
18	ExecInst	This value must match the original order.	E, O	Y	1=not held 5=held 6=PNP G=AON R=Primary Peg P=Market Peg M= MPL
22	IDSource	This value must match the original order.	B	Y	1= CUSIP
37	OrderID	If present, the value must exactly match the OrderID ARCA assigns to the order.	E, O, B	N	Numerical up to 9 characters (Equities*/Bonds) *Will change to 20 characters for NYSE Arca Equities when UTP goes live Numerical up to 20 characters (Options) (Required on fast cancel replaces – Options)
38	OrderQty	This value can be changed	E, O, B	Y	1-999,999
40	OrdType	This value can be changed	E, O, B	Y	1=Market 2=Limit 5=MOC (Market On Close) 7=Inside Limit B=LOC (Limit on Close) P=Pegged q=market maker
41	OrigClOrdID	This value must match the ClOrdID of the order being changed. Note in the case of multiple changes that. This value is the ClOrdID of the most current successful change.	E, O, B	Y	User specified up to 30 characters

Tag	Field	Description	Platform	Req.	Values
		*if you are using the fast cancel message you must send the ClOrdID of the first order in the chain in this field.			
44	Price	This value can be changed	E, O, B	Y	.01-9999.99 (Limit order only)
47	Rule80A	This value must match the original order.	E	Y	A/F=Agency/Agency P/E=Principal/Principal J/X=Agency/Principal K/H=Principal/Agency
48	SecurityID	This value must match the original order.	E	Y	CUSIP Identifier
52	SendingTime	This value must be within 60 seconds of the current time, or we will reject the order.	E, O, B	Y	Time specified in UTC time. YYYYMMDD-HH-MM-SS
54	Side	This value must match the original order.	E, O, B	Y	1=Buy 2=Sell 5=Sell Short 8=Cross 9=Cross Short
55	Symbol	This value must match the original order.	E, O	Y	Valid Symbol or Options Root Symbol
59	TimeInForce	This value must match the original order.	E, O, B	Y	0=Day 1=GTC 2=At the Opening 3=IOC 6=GTD 7 = On Close (Optional for PO+ Only if 40=5 or 40=B is not used)
65	SymbolSfx	This value must match the original order.	E, O, B	Y	Valid Suffix value
97	PossResend	A change request sent with PossResend set is checked to see if it matches an existing order with the same ClOrdID.	E, O, B	N	Y
99	StopPx	This value can be changed	O	Y ©	.01-99,999 (Required if specified on the original order)
111	MaxFloor	This value must match the original order.	B	Y ©	>100 (Required if specified on the original order)
126	ExpireTime	This value can be changed	E, O	Y	Time specified in UTC time. YYYYMMDD-HH-MM-SS (Required if specified on the original order)
167	SecurityType	This must match the value of	O, B	Y	OPT= Options

Tag	Field	Description	Platform	Req.	Values
		the original order.			CORP = Corporate Bonds TBOND = Treasury Bond TBILL = Treasury Bill TNOTE = Treasury Note
168	EffectiveTime	This value can be changed	E, O, B	Y	Time specified in UTC time. YYYYMMDD-HH-MM-SS (Required if specified on the original order)
200	MaturityMonth	This must match the value of the original order.	O	Y	YYYYMM
201	PutOrCall	This must match the value of the original order.	O	Y	0=Put, 1=Call
202	StrikePrice	This must match the value of the original order.	O	Y	0 – 99999999.9999
205	MaturityDay	This must match the value on the original order.	O	Y	DD
211	PegDifference	This value can be changed	E	Y ©	-9,999.99-9,999.99 (Required if specified on the original order)
336	TradingSessionID (repeating field)	This value can be changed	E, O, B	N	1-3
386	NoTradingSessions	This value can be changed	E, O, B	N	P1,P2,P3
388	DiscretionInst	This value must match the original order.	E	Y ©	0 (Required if specified on the original order)
389	DiscretionOffset	This value can be changed	E	Y ©	-9,999.99-9,999.99 (Required if specified on the original order)
423	PriceType	This must match the value of the original order.	B	Y ©	1= percentage of Par 4 = Discount (On Ttreasury Bills – TBILL only) (Required if specified on the original order)
440	ClearingAccount	Overriding CMTA number	O	Y ©	≤ 4 characters (Required if specified on the original order)
	Standard Footer		E, O, B	*Y*	

8.4   Execution Reports

Clients can expect to receive an acknowledgement on any order placed as well as any subsequent fills in the form of an execution report or MsgType=8. In addition to requirements for the standard FIX message header, the following fields will be specified on these messages.

Tag	Field	Description	Platform	Req.	Values
	Standard Header		E, O, B	*Y*	*MsgType = 8*
1	Account	If this field is present, we copy the information into execution messages referring to this order. This field can be used for clearing information.	E, O, B	N	User specified up to 10 characters
6	AvgPx	Indicates Average Price of fills on order	E, O, B	Y	.0001-99999999.9999
11	ClOrdID	ClOrdID behavior defined in Execution Report section	E, O, B	Y	User specified up to 30 characters
14	CumQty	Indicates total quantity of fills on open order	E, O, B	Y	1-999,999
17	ExecID	Execution ID assigned by ARCA	E, O, B	Y	Numerical up to 9 characters (Equities*/Bonds) *Will change to 20 characters for NYSE Arca Equities when UTP goes live* Numerical up to 20 characters (Options)
19	ExecRefID	On trade break or trade correction only	E, O, B	Y	Contains the ExecID (Tag 17) value of the Fill that is broken or corrected.
20	ExecTransType	All execution reports	E, O, B	Y	0=New 1=Cancel (Trade Break Only) 2=Correct (Trade Correction Only)
22	IDSource	Indicates whether a CUSIP will be used.	B	Y	1= CUSIP
30	LastMkt	Designates system of execution	E, O, B	Y	P- Listed, OTC BB – Bulletin Board PO- Options N- Bonds
31	LastPx	Indicates price of fill	E, O, B	Y	.0001-99999999.9999
32	LastShares	Indicates quantity of fill	E, O, B	Y	1-999,999
37	OrderID	OrderID assigned by ARCA		Y	Numerical up to 9 characters (Equities*/Bonds) *Will change to 20 characters for NYSE Arca Equities when UTP goes live* Numerical up to 20

Tag	Field	Description	Platform	Req.	Values
					characters (Options)
38	OrderQty	Indicates share quantity on order	E, O, B	Y	Up to 999,999
39	OrdStatus	Indicates status of order (Fix 4.0) or Indicates status or message (Fix 4.1and 4.2)	E, O, B	Y	0=New 1=Partially Filled 2=Filled 3=Done For Day 4=Cancelled 5=Replaced 6=Pending/Cxl Replace 8=Rejected C = Billable Cancel (No Self Trade Only) E= Pending Cxl/Replace (4.2 only)
40	OrdType	Indicates order type of order	E, O, B	Y	1=Market 2=Limit 3=Stop 4=Stop Limit 7= Limit or Better
44	Price	Indicates price on order in decimals.	E, O, B	Y*	0-9999999.9999 (Limit order only) *Please see NYSE Bonds Section on Treasuries on special price scaling.
48	SecurityID	CUSIP Identifier	B	Y	CUSIP Identifier
50	SenderSubID	Client will receive value specified in TargetSubID on order.	E, O, B	Y	ARCA
52	SendingTime	Time sent by ARCA	E, O, B	Y	Time specified in UTC time. YYYYMMDD-HH-MM-SS
54	Side	Buy, Sell, or Sell Short	E, O, B	Y	1=Buy 2=Sell 5=Sell Short
55	Symbol	This field must contain a valid symbol in upper case lettering.	E, O	Y	OCC Option Series Underlying or Equities Ticker Symbol
57	TargetSubID	Client will receive value specified in SenderSubID on order.	E, O, B	Y ©	User Specified up to 10 characters (Required if specified on the original order)
58	Text	Gives additional information on how the New Order, Cancel, or Cancel/Replace Message was handled.	E, O, B	Y	Examples of Information Text: • New Order • Partially Filled • Filled • Expired • Cancelled • Replaced • Pending/Cxl Replace • Rejected • Self + ClOrdID (Equities STP Only)

Tag	Field	Description	Platform	Req.	Values
59	TimeInForce	If a value is not present in this field, the default is Day.	E, O, B	N	0=Day 2=At the Opening 1=GTC 3=IOC 4=FOK 6=GTD
60	TransactTime	Indicates time of transaction on ack or fill	E, O, B	Y	Time specified in UTC time. YYYYMMDD-HH-MM-SS
63	SettlmnType	Will be present in fill messages unless a bond is cleared in foreign currency	B	Y	1 = Same Day Cash 2 = T+1 3 = T+2 4 = T+3
65	SymbolSfx	This field must contain a valid symbol in upper case lettering.	E	N	Valid Suffix value (Returned if used on original order, or if Comstock symbol is used in Tag 55 on Original Order)
77	OpenClose	Indicates status of client position in the option.	O	Y	O=Open C=Close
99	Stop Price	Set to dictate stop price on stop orders	O	N	.01-99,9999
118	NetMoney	LastShares * ((Face * LastPx / 100) + DailyInterestValue)	B	C	.1-99999999..99
120	SettlCurrency	Will be present if the currency is other than USD	B	C	GBP, EUR
150	ExecType	Indicates status of order (FIX 4.1 and 4.2 only)	E, O, B	Y	0=New 1=Partially Filled 2=Filled 3=Done For Day 4=Cancelled 5=Replaced 6=Pending Cxl/Replace 8=Rejected C = Billable Cancel (No Self Trade Only) E= Pending Cxl/Replace (4.2 only)
151	LeavesQty	Indicates open shares remaining on order	E, O, B	Y	1-999,999
159	AccruedInterestAmt	LastShares * DailyInterestValue	B	Y	.1-99999999.99
167	SecurityType	Identifies type of instrument.	O, B	Y	OPT= Options CORP = Corporate Bonds TBOND = Treasury Bond TBILL = Treasury Bill TNOTE = Treasury Note
200	MaturityMonth	Indicates Maturity Month	O	Y	YYYYMM
201	PutOrCall	Indicates Put or Call	O	Y	0=Put, 1=Call
202	StrikePrice	Indicates Strike Price	O	Y	0 – 99999999.9999

Tag	Field	Description	Platform	Req.	Values
205	MaturityDay	Indicates Maturity Day for series with more than one expiration date in a month.	O	Y	DD
211	PegDifference	Refer to pegged orders section 4	E	N	-9999.99-9999.99
375	ContraBroker	Contains the ContraBroker on the execution	B	C	Will contain the etpid of the contra
381	GrossTradeAmt	CumQty * Face * AvgPx / 100	B	Y	.1-99999999.99
382	NoContraBrokers	Indicates the number of contras on a fill	B	C	If this tag is present in an execution report the recipient must clear directly with the contra party in Tag 375 (ContraBroker)
423	PriceType	Percent of Par	B	Y	1 or 4 (On Treasury Bills – TBILL only)
526	Optional Data	Customer Defined Identifier used for clearing purposes.	O	N	Returned from order
669	LastParPx	Last price expressed in percent-of-par	B	Y	0.000 – 9999999.999
9416	ExtendedExecInst	Returned if used on original order message	E, O	Y (C)	0 = For not interacting with MPL Orders (Equities) 1 = fast cancel replace (Options) 2 = IOI Dark Pool Opt Out (Equities) (Required if specified on the original order)
9417	ExtendedPNP	Returned if used on original order	E	Y (C)	B = PNP Blind (Required if specified on the original order)
	Standard Footer		E, O, B	*Y*	

8.5   Auto Cancel on Disconnect Feature

At the client's request, a FIX session can be configured to automatically cancel all live or orders when your firm disconnects. Please note that this feature does not guarantee that all outstanding orders will be successfully canceled. It is possible that trades may happen near the time your firm disconnects, and such trades will not be reported to you. Likewise, a cancel request may fail due to system problems at NYSE Arca, and orders may remain live and subject to execution.

This feature is intended to help your firm in emergency situations. **Firms must not rely upon this automatic cancellation as a normal business practice or to prevent liability of execution. This feature is also not a substitute for contacting the applicable trade desks to verify that all orders are indeed canceled and that the firm has received all trades.**

8.6   Bulk Cancel message

If you want to bulk cancel your orders without disconnecting your FIX connection(s) we offer a bulk cancel message. The bulk cancel message is MsgType = F with the OrderID (37) field set to -999. We offer the following bulk cancel options:

- Cancel all live orders – If you send a bulk cancel message without symbol and side NYSE Arca will cancel all open orders on our Equities Exchange platform (Listed or OTC).

- Cancel all orders on a side of the market – If you want to cancel just buy orders you can set the side on the cancel message to buy (side=1). NYSE Arca will cancel all open buy orders our Equities Exchange platform (Listed or OTC).

- Cancel all orders for a particular symbol – If you want to cancel all orders for a particular symbol they you can add the symbol to the bulk cancel message.

When NYSE Arca receives a bulk message it will deliver a bulk cancel ack message followed by out messages for each of the orders that are canceled. If your orders have been routed to other exchange destinations we will ack them separately as it may take longer to receive the out messages from the away destinations.

8.7   Bulk Cancel by ETPID

If you want to bulk cancel your orders across an entire ETPID (Equity Trade Permit ID) without disconnecting your FIX connection(s) we offer this new type bulk cancel message. The bulk cancel by ETPID message is **MsgType = F with the OrderID (37) field set to -888 and your 5 Character ETPID in Tag 76 (ExecBroker).**

When NYSE Arca receives a bulk cancel by ETPID it will deliver a bulk cancel ack message followed by out messages for each of the orders that are canceled across all the sessions that trade under the ETPID set in Tag 76. If your orders have been routed to other exchange destinations we will ack them separately as it may take longer to receive the out messages from the away destinations.

This bulk cancel type is good for those of you that have many open orders on our book at the same time across many sessions. This type of bulk cancel message is extremely helpful in gateway outage situations.

8.8   NYSE Arca Order Types (Equities, Options, & Bonds)

Order Type	Fix tags	Description	Exchange Platform	Available Sessions
Market Order	OrdType (40)=1 (market)	An order to buy or sell that is to be executed at the best price obtainable.	- Equities - BB - Options - Bonds	- market auction - core
Limit Order	OrdType (40) = 2 (limit)	An order to buy or sell at a specified price or better. A marketable limit order is a limit order to buy/sell at or above/below the consolidated best offer/bid for the security	- Equities - BB - Options - Bonds	- all sessions
PNP (post no preference)	OrdType (40) = 2 ExecInst (18) = 6	A limit order to buy or sell that is to be executed in whole or in part on ArcaEx. The portion not executed is posted in the ArcaEx Book without routing any portion of the order to another market center. PNP orders in both listed and OTC stocks that would lock or cross the NBBO are cancelled.	- Equities - BB -Options	- all sessions
IOC (immediate Or Cancel)	OrdType (40) = 2 TimeInForce (59) = 3	A limit order that is to be executed in whole or in part as soon as such order is received. The portion not so executed is to be treated as cancelled. IOC's only execute on ArcaEx and do not route	- Equities - BB - Options	- all sessions
Inside Limit	OrdType (40) = 7	Marketable Inside Limit Orders will be matched within the ArcaEx Book at the best obtainable price or routed to the market participants at the NBBO. Any residual volume will not be routed to the next price level until all quotes at the current best bid or offer are exhausted. Non-marketable Inside Limit Orders will posted in the NYSE Arca Book at the limit price. Inside limit orders are available from 8:00 am to 8:00 pm ET	- Equities	- all sessions
Reserve Order	OrdType (40) = 2 (limit) MaxFloor (111) = (show size)	A reserve replenishes the displayed order size as executions are received, up to the total order quantity; away markets are routed at their quoted size or larger (if applicable) when hitting the bid or taking liquidity.	- Equities - Options - BB - Bonds	- all sessions

Reserve and Random	OrdType (40)= 2 MaxFloor (111)=display qty 8020=disp range (for Random reserve orders only)	• User defines the original display quantity and a random reserve value which will be used to determine the show quantity within a defined range each time it is replenished. (For example, a display quantity of 2000 shares and a random reserve of value of 200 will randomly display orders at 1800, 1900, 2000, 2100 or 2200 shares.) • Setting the random reserve value to zero will send random orders within 20% of the original display quantity. • Market Participants are preferenced for the quoted size when hitting the bid or taking the offer. • Orders preferenced to ARCA, at sizes greater than the displayed size, will be matched against the entire reserve quantity.	- Equities - Options	- all sessions
Passive Liquidity (PL) ***For NYSE Arca Primary Listings, this order type is available to Lead Market Makers only***	OrdType (40) = 7 ExecInst (18) = 5	A Passive Liquidity order (PL) is an order that is never displayed externally. It's ranked behind display and reserve orders and ahead of all other orders. For NYSE Arca primary listings, LMMs must have a displayed Q order meeting certain requirements for a PL Order to be eligible to execute. These display requirements are outlined in NYSE Arca Rule 7.31(h)(4) and section 3.15 (FIX Market Making) of this document. Please note that Q Orders only will be considered when evaluating whether an LMM is meeting the display requirement for execution of a PL Order; regular displayed limit orders will not be considered for this purpose.	- Equities	- core
Midpoint Passive Liquidity (MPL) Order	OrdType (40) = 2 ExecInst (18) = M OrdQty (38) = 100 (Min.) MinQty (110) = the minimum qty desired on each fill.(not required)	MPLs will have a minimum entry size of 100 shares and will not be displayed. MPL Orders will be valid for any session but do not participate in any auctions. MPL Orders may also be entered with a Minimum Execution Size condition, though this is not required. MPL orders always execute at the midpoint and do not receive price improvement. If you do not want your orders to interact with MidPoint Passive Liquidity orders send Tag 9416=0 on your new order message (only available for non-MPL).	-Equities	-All sessions

NOW order	OrdType (40) = 2 TimeInForce (59) = 3 ExecInst (18) = 1	A limited price order that is executed in whole or in part that will be routed to one or more NOW recipients (those venues that respond immediately with a fill or a cancel) for immediate execution if the order cannot be executed on ArcaEx. Orders are immediately canceled if not executed at the quoted price or better. Customers may use the NOW Order for accessing IOI undisplayed liquidity venues.	- Equities - Options	- all sessions
ISO Intermarket Sweep Order (available under RegNMS)	**ISO PNP order** OrdType (40) = 2 ExecInst (18) = f 6 **ISO IOC order** OrdType (40) = 2 ExecInst (18) = f 6 TimeInForce (59) = 3	<u>ISO Modifier</u> – Under Reg NMS, clients may send ARCA an instruction to trade only with the ARCA book and ignore all away market quotes (including Protected Quotes). This is known as the Intermarket Sweep Order (ISO) o ISO IOC – Sweep the ARCA Book to the price, cancel any remaining balance, and ignore all external quotes. o ISO PNP – Sweep the ARCA Book to the price, Post any remaining balance, and ignore all external quotes. o ISO IOC Cross – Sweep the ARCA Book to the price, Cross any remaining balance, and ignore all external quotes o ISO IOC Cross and Post – Sweep the ARCA Book to the price, Cross any remaining balance, Post the take out amount, and ignore all external quotes **ISO Orders will interact with all resting orders except Tracking Orders.** **ISO Orders are never routed out.**	- Equities	All sessions
ISO Intermarket Sweep Order (Options)	OrdType (40) = 2 ExecInst (18) = f TimeInForce (59) = 3	These orders execute against the fully displayed size of any Protected Bid or Offer (each exchange's best bid and best offer, or "BBO"). ISOs allow a large trade to fill against quotes priced worse than the NBBO while simultaneously meeting the requirement to sweep the top of the book at all eligible protected markets. A broker can sweep and then fill the remainder of an order, so long as simultaneous "ISO Orders" are sent out to trade against the protected quotes on away markets. **ISO Orders will interact with all resting orders except Tracking Orders.** **ISO Orders are never routed out.**	- NYSE Arca Options	- Core

NYSE Arca Primary Sweep Order	**Non-Routable PSO** ExecBroker (76) = PSO TimeInForce (59) = 0 (day) NoTradingSessions (386)=1 TradingSessionID (336) =P2 **Routable PSO Order** ExecBroker (76) = PSOS TimeInForce (59) = 0 (day) NoTradingSessions (386)=1 TradingSessionID (336) =P2	The 'Primary Sweep Order' sweeps the NYSE Arca Book and routes any remaining balance to the primary listing market (NYSE, NASDAQ or AMEX). • Can be Market or Limit order • Should be marketable. Non-marketable orders will function as limit orders. Orders can be entered beginning at 3:30 a.m. ET until the end of core trading. • When orders are routed to an away market, the order will retain its qualifier • When routed, the PSO is designated as non-routable and IOC by the primary market or Do Not Ship (DNS) For limit orders Only, when PSOS is used in ExecBroker, the order will not be sent with the DNS (Do Not Ship) Instruction on NYSE Listed Symbols. The order will be eligible for routing away at the NYSE.	-Equities	- core
Cross order	OrdType (40) = 2 Side (54) = 8 (cross) 9 (cross short) ExecInst (18) = M (Midpoint cross), 6 (PNP), f 6 (ISO) TimeInForce (59) = 3 (for IOC cross) 5 (Cross and Post) * for ISO PNP Cross send ExecInst = f 6 * for ISO IOC Cross send TimeInForce = 3 * for ISO Cross and post send ExecInst = f 5	A Cross Order is a two-sided order with both a buy and sell component combined that trades at a stated price for a stated size specified by the user. Cross Orders must satisfy better prices displayed in the ArcaEx Book or in the market before matching the remaining shares as a cross. Cross Orders are available from 8:00 am to 8:00 pm ET ISO Crosses • ISO IOC Cross – Sweep the ARCA Book to the price, Cross any remaining balance, and ignore all external quotes • ISO IOC Cross and Post – Sweep the ARCA Book to the price, Cross any remaining balance, Post the take out amount, and ignore all external quotes If the Cross Order is sent during the Early Trading Session (P1), only TimeInForce = 0 or 3 is required. If the Cross Order is sent during the Core Trading Session (P2), TimeInForce = 0 or 3 and NoOfTradingSessions (386) must equal to 1 and TradingSessionID (336) must equal to P2.	- Equities	- all sessions
Discretion Limit	OrdType (40) = 2 DiscretionInst (388) = 0 DiscretionOffset (389) = offset from displayed price. Positive for buy, negative for sell.	An order that is displayed at your specified price, not your discretionary price, along with a share quantity minimum requirement for routing discretionary prices outside the ArcaEx Book. When a bid or offer appears on an away market at or above your share quantity minimum, your order	- Equities	- all sessions

	MinQty (110) = share qty accepted to fill order	will be routed to that market participant at their quoted price using SmartBook logic. NBBO price protection does not apply to these orders.		
Discretionary Order	OrdType (40) = 2 DiscretionInst (388) = 0 DiscretionOffset (389) = offset from displayed price. Positive for buy, negative for sell.	An order with two — price components a display price and a discretionary price — that is displayed at your specified price, not your discretionary price. When a bid or offer appears at or within your discretionary price range, your order will be matched on ArcaEx or proactively routed externally at the quoted price.	-Equities	- all sessions
Passive Discretion	OrdType (40) = 2 DiscretionInst (388) = 0 DiscretionOffset (389) = offset from displayed price. Positive for buy, negative for sell custom field 8021 = 0	The order is displayed at your specified price (not your discretionary price) and is not eligible to route. When a bid or offer appears in the ArcaEx Book at or within your discretionary price range, it will be executed against the book even if the book order is outside the NBBO. A discretionary price can be used in combination with a reserve order. Please note, all listed securities are executed within the NBBO.	- Equities	- all sessions
Market Peg	OrdType (40) = P ExecInst (18) = P (market peg) PegDifference (211) = offset to market (required)	An order with a price that will track the national best bid or offer. Pegged orders may also make use of offsets from the same side bid/offer or offsets from the contra side (peg buy offset from offer). The order is displayed in the ArcaEx Book	- Equities	- core
Primary Peg	OrdType (40) = P ExecInst (18) = R (primary peg) PegDifference (211) = offset to market (not required)	An order with a price that will track the national best bid or offer. Pegged orders may also make use of offsets from the same side bid/offer or offsets from the contra side (peg buy offset from offer). The order is displayed in the ArcaEx Book	- Equities	- core
Tracking Order	OrdType (40) = 2 ExecInst (18) = d	An order that executes against outbound orders with a leaves quantity less than or equal to the size of the tracking limit order.	- Equities - Options	- core
*Market On Open (MOO)	OrdType (40) = 1 (Market) Timeinforce (59) = 2 NoTradingSessions(386)=1 TradingSessionID (336) =P2	Market On Open orders are orders that are executable only within an auction on **NYSE Arca Primaries and all non-primary ETFs ONLY***. If the order is not executed in the auction, the balance is cancelled.	-NYSE Arca Primaries and all Non-Primary ETFs	- early auction
*Limit On Open (LOO)	OrdType (40) =2 (Limit) TimeInForce (59) = 2 NoTradingSessions(386)=3 TradingSessionID (336) =P1 TradingSessionID (336) =P2 TradingSessionID (336) =P3	Limit On Open orders are orders that are executable only within an auction on ***NYSE Arca Primaries and all non-primary ETFs ONLY***. The Limit On Open Order is executable only during the <u>next</u> Auction following order entry (including Halt and IPO). If	-NYSE Arca Primaries and all Non-Primary ETFs	- early auction

		the order is not executed in the auction, the balance is cancelled.		
Limit on Close (LOC)	OrdType (40) = B	A limit price order that is to be executed only during the closing auction. ***NYSE Arca Primaries and all non-primary ETFs ONLY***	-NYSE Arca Primaries and all Non-Primary ETFs	- late auction
Market On Close (MOC)	OrdType (40) = 5	A market order that is to be executed only during the closing auction. ***NYSE Arca Primaries and all non-primary ETFs ONLY***	-NYSE Arca Primaries and all Non-Primary ETFs	- late auction
Primary On Open order (POO order)	OrdType (40) = 1 ExecBroker (76) = POO	A market order sent before the open that does not interact with the Arca Book. This order is sent to the primary exchange that the security is traded on.	- Equities	- core
Primary Open + order (PO+ order)	**PO+** OrdType (40) = 1 or 2 ExecBroker (76) = PO+ **PO+ MOC** OrdType (40) = 5 ExecBroker (76) = PO+ **PO+ LOC** OrdType (40) = B ExecBroker (76) = PO+	A market or limit order that is different from the original Primary On Open (POO) order type in that it will route to the primary market all day; ignoring the time of the first print and the 10am EST end time that applies to the original POO. The primary markets are identified as NYSE (N), Amex (A), and NASDAQ (Q). Clients will populate ExecBroker = PO+ to take advantage of this functionality. PO+ MOC/LOC will be routed to the primary exchange as an on close order. **Note:** All NASDAQ (Q) PO+ Orders will be routed to NASDAQ as Immediate Or Cancel (IOC).	- Equities	- core
Primary Open + Ship Order (PO+S order)	OrdType (40) = 1 or 2 ExecBroker (76) = PO+S	A limit order that will route to the primary market all day (Same as PO+), but will not be sent with the DNS (Do Not Ship) Instruction on NYSE Listed Symbols. The order will be eligible for routing away at the NYSE. This order type is only for NYSE and NYSE Amex Listed symbols.	- Equities	- core

Add Liquidity Only (ALO)	OrdType (40) = 2 ExecInst (18) = 6 ExtendedExecInst (9416)= A	The ALO Order is a limit order that is posted to the NYSE Arca book in order to add liquidity. The ALO Order is designed to assist traders in controlling their trading costs. By providing rather than removing liquidity, traders can limit or reduce take fees. The ALO order will be Day only, and may not be designated as IOC (Immediate or Cancel), Good Till Cancel (GTC) or Good Till Date (GTD). ALO Orders will be rejected where, at the time of entry: - The ALO is marketable - The ALO will lock or cross the market - The ALO order would interact with un-displayed orders on NYSE Arca	-Equities -Options	- all sessions
9:45am/3:45pm Order Types	OrdType (40) = 2 TimeInForce (59) = 0 ExecInst (18) = 7, 8, or 9	**9:45am ET Designation** – An indicator on a Day Limit order only instructing that upon receipt the order be sent directly to the primary until 9:45am ET. If the order is received after 9:45 ET, the designator is ignored and the order stays on NYSE Arca. Any unexecuted orders entered with the "9:45" designator are cancelled on the primary at 9:45am ET and returned to NYSE Arca for the remainder of the day. **3:45 pm ET Designation** – An indicator on a Day Limit order instructing that the order be cancelled on NYSE Arca at 3:45pm ET and placed as a day order on the Primary market. ExecInst = 7 – Primary until 9:45 then move to NYSE Arca ExecInst = 8 – NYSE Arca until 3:45 then move to primary ExecInst = 9 – Primary until 9:45am ET, then move to NYSE Arca –AND– NYSE Arca until 3:45pm ET, then move to the primary. **Orders other than straight Day/Limit with ExecInst of 7, 8, or 9 will be rejected.**	Equities	- Core
PCS	Side (54) = 8 (cross), 9 (cross short) ClOrdLinkID (583) = a client assigned id that will uniquely identify each order as being	Execution and reporting of entire portfolios (baskets) of stock with the ArcaEx trading system without interaction with the book or with other PCS orders. When the PCS Process receives a PCS Cross Order it will hold	-Equities	- all sessions

	part of a basket. DeliverToCompID (128) = PCS ExecInst (18) = 6 (PNP)	the order. At 8:01 PM EST, PCS will execute all PCS Crosses. PCS Crosses do not interact with any other orders including other PCS Crosses. PCS orders may be cancelled at any time before 8:00 PM ET. PCS will not support the bundled cancel replace functionality but a new order may be entered by the ETP.		
Fill Or Kill	TimeInForce(59)=4 (FOK)	Order that will only fill if the entire order quantity can be matched immediately. If not the order will be cancelled back to the client.	-Equities -Options	- core
All or None	ExecInst(18)=G	Order that will only fill if the entire order quantity can be matched.	-Options	- core
Wait Order	OrdType (40) = 2 ExecInst (18) = 6 ExtendedExecInst (9416)= W	A "WAIT" order is a limit options order that is held for one second before being processed for potential display/execution/routing per any other execution instructions or qualifiers as indicated by the order sending firm. Once released for processing, the WAIT order will behave according to the parameters indicated by the order sending firm.	-Options	- core
Good Till Cancel	TimeInForce(59) = 1 (GTC) ClOrdID(11)=yyyymmdd and customer defined value	Order that will stay live until cancelled by the client. Clients must also specify a ClordID(11) with the date the order is submitted in yyyymmdd format at the beginning of the value. Any corporate action on the underlying security will result in an unsolicited cancel back to the client.	-Equities -Options -Bonds	- core
Good Till Date	TimeInForce(59)=6(GTD) ClOrdID(11)=yyyymmdd + customer defined value	The ClOrdID needs to contain the date. The ClOrdID must start with YYYYMMDD (for Multi-Day GTDs that expire on future days the hour and minute portion of the expiretime will be ignored and the GTD will expire at the end of the core session). Note: the functionality of same day GTDs does not change	-Equities -Options -Bonds	-core

Post No Preference Blind (PNP B) Order	OrdType (40) = 2 ExecInst (18) = 6 ExtendedPNP (9417) = B	Marketable Contra Orders will first execute against the PNP B Orders, then the rest of the book. PNP B Orders will be ranked in time priority regardless of the price of the order when they are blind. When the PBBO moves away from the price of the PNP B but the prices continue to overlap; the PNP B will remain blind but adjust its price to the PBBO. When the PBBO moves away from the price of the PNP B and there is no longer price overlap, the PNP lights up and becomes a regular limit order including standing its ground. **Note: Fast Cancel/Replace is not available on Options PNP Blind Orders until further notice.**	-Equities -Options	-All sessions
PNP Light Only Order	OrdType (40) = 2 ExecInst (18) = 6 ExtendedPNP (9417) = L	PNP LO orders are limit orders that do not route to away markets. Marketable incoming PNP LO orders will trade against any displayed interest and post remaining shares to the NYSE Arca book. PNP LO orders that lock or cross the National Best Bid and Offer (NBBO) will cancel back to the order sending firm. Incoming PNP LO orders will also cancel back to the order sending firm under the following conditions: If incoming PNP LO order is marketable against any non-displayed interest present in the NYSE Arca book, including resting PNP Blind (PNP B) orders and hidden portions of reserve orders. Once posted and disseminated, the PNP LO order will stand its ground, i.e. it will not route or cancel if locked/crossed by an away BBO.	-Options	-core
Market Maker Order Types	The below order types are only for registered Market makers or firms that have agreements with market makers,	If the below order types are entered by non-market makers or firms that don't have an agreement with a market maker they will be rejected		
"q" order market maker quote order	OrdType (40) = q	ArcaEx rules require registered market makers to maintain two – sided quotes in all symbols that they are registered to make markets in. The q order is used to enter the two sided market. A buy and sell order must be entered.	- Equities	- core
carry over q orders	ArcaEx system generated	In order for Market Makers to maintain their two sided quotes ArcaEx can submit q	- Equities	- core

"g" order *market maker guarantee order* **(Currently Unavailable)**	*OrdType (40) = 2 (limit), P (pegged)* *DeliverToCompID = DOP* **cancel replace messages are not accepted on g orders*	*"g" orders are non-displayed orders that entered into ArcaEx's directed order process. These orders will fill against incoming directed orders sent by order sending firms that have an arrangement with the market maker*	*- OTCBB* *- Listed*	*- core*
Directed order **(Currently Unavailable)**	*OrdType (40) = 1, 2, or 7 (inside limit)* *ExecInst (18) = 6 (PNP)* *DeliverToCompID (128) = ETPID of market maker*	*These orders are designed to interact only with guarantee orders that are entered by Market makers. Firms that enter directed orders can specify the ETP ID of the market maker that they would like to deliver their directed order to in the DeliverToCompID field. They can do this over any of their sessions. If an order sending firm chooses not to send the ID of the market maker in the DeliverToCompID field they will require a dedicated directed order FIX session for their directed orders.*	*- Equities*	*- core*

58

9   NYSE Arca Complex Orders

9.1   Introduction

Clients can send complex orders of up to 5 legs to NYSE Arca for execution and can include 1 equity leg. These orders will be specified in one FIX message containing multiple legs.

The Complex Order is sent as a MsgType(35)=AB. ***Please note that if MsgType(35)=AC is sent, it will be rejected.*** The "parent" section of the Complex Order will be identified with Side(54)=B(as defined) and contain NoLegs(555) to specify the number of legs in the order. The "parent" section will also contain Price(44) with the value equal to the net price of the spread and OrderQty(38) will contain the multiplier used to calculate the quantity on each leg. The qty for the leg will be calculated as LegRatioQty(623) X OrderQty(38) = the Leg quantity. Each individual leg of the Complex Order should begin with LegSymbol(600) and should also include LegCFICode(608), LegSecurityType(609), LegMaturityMonthYear(610), LegStrikePrice(612), LegSide(624), LegRatioQty(623), LegPositionEffect(564), and LegRefID(654).

Fills for Complex Orders will only take place when at least a partial of each leg can be satisfied. It is not possible to receive fills for only certain legs of a Complex Order and not others. Leg ratios will be preserved when partial executions occur. Clients will receive execution reports for each individual leg of a complex order for fills. Each fill messages will reference the ClOrdID(11) of the order in addition to the LegRefID(654) of the individual leg.

For complex orders, clients may specify option orders on one to 5 legs and orders for common stock on up to one leg. The total number of legs cannot exceed 5. There can only be one equity leg in a complex order and the common stock leg of the complex order will be treated differently. LegCFICode(608) will be populated with ES (Equity common shares) and the following tags are not required: LegCFICode(608), LegMaturityMonthYear(610), LegStrikePrice(612) and LegPositionEffect(564). Clients may also send LegSide(624)=5(sell short) for these legs.

Notes for With-Stock Complex Orders:

- We will accept up to 4 decimal places for with-stock orders. This means truncating off on the 5th decimal place if an order is sent with more than 4 decimals in the price field.
- With stock Delta Neutral orders must be entered with a minimum delta of 13.
  - Further, Delta Neutral orders that have a low delta and low volume may not always be eligible for reverse pricing. The total number of contracts x the delta must equal 100 to ensure reverse pricing is possible in all scenarios. For example, for delta neutral orders with a delta of 13, the minimum number of contracts that will always be eligible for reverse pricing is 8.
  - The Matching Engine will not allow a price to be disseminated that is not eligible for reverse pricing. The best price that is eligible will be disseminated via Arca Book. This best price will update whenever the BBO's refresh.
- Complex orders with options only will be rounded to 2 decimals by the ME.
- The Options Matching Engines will round up to the nearest penny (2 decimal places) for credits and round down (on the absolute value after ignoring the sign) to the nearest penny for debits in complex only options.

9.2   Latest Informational Updates

NYSE Arca options is pleased to announce that we are expanding Complex Order Book functionality to include Buy Writes, Delta Neutral Single Leg Option orders, Married Puts and Reversal Conversions. The addition of single leg options with stock orders represents the next phase of the Complex Order Book pilot program rollout. These strategies will be available in all option symbols traded on NYSE Arca.

Effective **Monday March 30**, all single leg options with stock strategies and reversal conversions are eligible for trading in the Complex Order Matching Engine.

About Option with Stock Order Functionality on NYSE Arca:
- Single leg option with stock orders can be priced in penny increments.
- Reversal conversion orders can be priced in penny increments.
- Marketable option/stock orders will trade immediately, with no auction or delay in processing.
- ArcaBook subscriptions will be available for the complex order book.
    - Top of Book Messages
    - New Instrument Messages
- In order to identify and organize complex instruments and orders, NYSE Arca will disseminate Complex FAST symbols via ArcaBook.
- The ArcaBook specification for complex orders can be found at http://www.nyse.com/pdfs/ArcaBook_Complex_Order_Specs.pdf

Important Reminder

In order to send complex orders containing an equity leg, an OTP Holder must also be an NYSE Arca ETP (Equity Trading Permit) Holder, as well as a FINRA (Financial Industry Regulatory Authority) member. An ETP is a prerequisite for participating on the NYSE Arca Equities platform, and FINRA membership is required for purposes of reporting transactions to the FINRA/NYSE TRF (Trade Reporting Facility).

9.3 NYSE Arca Complex Orders - OSI Symbology Testing

As of 6/15/2009, Explicit symbology testing will be available in our Arca Complex test environment which will require separate connectivity from the ordinary test platform. A new session can be requested at anytime from Connectivity@nyx.com.

For a complex order, you must enter 600, 608, 611 and 612 for each leg to identify the series in explicit format. If the number of shares the option series represents is not 100, you must add tag 614 to the message also.

For more information on the upcoming OCC OSI changes, please see the following links:

http://www.optionsclearing.com/initiatives/symbology

http://www.optionsclearing.com/initiatives/symbology/osi_consolidation_plan.pdf

9.4 General Information

1. All legs, within a complex order, can be priced in penny increments.
2. Complex orders will be represented on a Net Price basis expressed in up to 2 decimal places (for delta neutral orders).
3. Complex orders will be accepted only, no complex quotes.
4. No multi-issue baskets, restricted to one underlying for all option legs and equity leg
5. Up to 5 legs per order
    - No more than 1 leg can be an equity leg.
6. Any Legal Ratio (of user-defined leg volumes) will be accepted.
7. Current electronic complex rules state that Legal Ratio cannot be greater than 1:3, 3:1.
8. Delta Neutral orders will be accepted. Delta should be entered in Tag 623 for the Equity Leg (leg ratio qty) as an integer value (no decimals).
    - For "delta-neutral" option with stock orders (user defined), the ratio is 8:1 options to stock, i.e. a 13 delta "floor".
9. Order types accepted are: Limit

- o For limit orders, the price will be expressed on net debit/credit basis for the sum of all legs.
10. Cancel/Replace will not be supported at this time. Clients will have to send a cancel request followed by a new order.
    - o GTC is not accepted at this time for Complex.
    - o AON/FOK is not accepted at this time for Complex.
11. TIF periods accepted are: Day (59=0), IOC (59=3).
12. Order-to-Order trading and order-to-screen (simple) market legs will be the execution mechanisms for complex orders.
13. All Complex order transactions must occur on or within the OX (derived) BBO markets.
    - o Complex order transactions that occur on the NYSE Arca (derived) BBO markets will trade vs. the legs prior to trading vs any contra complex order interest resting in the complex order book.
14. Halting a Symbol
    - o Any complex order containing at least one leg in an underlying security that halts will also halt trading.
15. The ClOrdID for complex orders must be limited to 25 characters.
16. Multi-legged (complex) orders are disseminated via "notification" to the ArcaBook Options Data Feed.
    - o Notifications are changes to the Top of Complex Order Book (COB).
    - o Failed execution attempt due to BBO violation results in rebroadcast of Top of Book.
    - o Cancellation of complex order at top of book will result in rebroadcast of Top of Book message.
17. There will be a segregated ArcaBook feed for complex markets
    - o Top of Book messages
    - o New Instrument Messages
    - o New Order Messages
18. Complex orders that interact with the leg markets will always be considered incoming orders.
    - o Complex orders will always receive price improvement, if available, from the screen market legs, i.e. where the net debit/credit price on the complex is more aggressive than the simple market, trade at the simple market displayed net debit/credit price.
    - o Complex orders trading vs. the screen market legs will always be considered "liquidity removing" and screen market legs considered "liquidity adding".

9.5   Complex Order Instruments

Complex order symbols will use the explicit data fields to identify the complex instrument. For each leg, the symbol field will be the OCC code. FAST symbols will be used for internal processing as well as for dissemination to Arca Book. FAST symbols will be sent to order sender on order ack via FIX.

Customer FIX Gateway

The NYSE Arca FIX Gateway will route complex orders (up to 5 legs, including up to 1 equity leg) to the electronic platform instead of EOC.

1. Incoming order messages will be received via FIX connections using standard FIX format.

2. For complex orders including an equity leg, prices will be expressed on a per share basis.

For Example:

    a. Buy 100 shares at 81.00
    b. Sell 1 option at 1.00
    c. Net Price: 80.00 debit

    d. To submit the spread the client should send and order with the overall QTY as tag 38=1, the Price as tag 44=80.00 – an $80 debit 1x. Note: the actual dollar amount of the debit is 8,000.00, but for spread Pricing/submission to NYSE Arca the $80.00 notation is used.

e. To trade the spread more times, the same Price and ratios are used, but the QTY in tag 38 is changed. To do the spread 2x, clients should send 38=2, while the Ratios and Price would be the same.

NOTE: For reference sake, the Price in tag 44 is the same as before (80.00), but the actual dollar amount of the debit would double to $16,000.00.

3. NYSE Arca will disseminate FAST symbols and a related key to active complex strategies, but will not allow complex orders received by NYSE Arca using our FAST symbols.
    a. Clients can not use FAST symbols for new incoming orders, because each leg must include open/close close indicators.
        i. LegPositionEffect values should be O and C for open and close
4. The acknowledgement on the complex instrument (head ack) will return the FAST instrument.
5. Reporting leg fills via FIX
    a. For a 3-leg instrument, NYSE Arca will send three execution reports, one for each leg fill. Each has the LegRefID from its corresponding leg but aside from that it looks the same as other fills on simple orders and the fills on legs will be sent with the value of 2 in the 442 (MultiLegReportingType)
        i. One ClOrdID will tie all fills together.
    b. For orders including an equity leg, fill reports for both options and equity legs sent to the client will come from the NYSE Arca Options platform, upon its receipt of a consolidated FillReport from the equities platform.
        i. The leg report to the clients will include LegRefID.
        ii. One ClOrdID will tie all legs together.
6. Ratio on FIX
    a. If a client wants to trade a buywrite selling 5 calls and buying 500 shares of stock, they would send 5 buywrites on a 1:100 ratio.
        i. It will be the client's responsibility to indicate if the option to stock ratio is something other than 1:100.
        ii. Example: if there was a 3/2 stock split, the client would be required to send 5 buywrites on a 1:150 ratio.

    b. If a client wants to buy 5 of one option leg and sell 10 of another option leg, they must send:
        i. OrderQty = 5
        LegRatioQty = 1 (first leg)
        LegRatioQty = 2 (second leg)

- Reporting Messaging for Complex Orders via FIX
    1. Ack
        a. Report per leg

    2. Reject
        a. 1 Parent message

    3. Pending Cxl –
        a. 1 Parent message

    4. Canceled
        a. Report per leg

    5. Fill
        a. Report per leg

6. Cancel reject
   a. 1 Parent message

Canceling a Complex Order:
Customers must specify one of the option leg instruments or the FAST instrument id of the complex order in the cancel message along with the value of MLEG in the 167(SecurityType).

9.6   Core Trading

- Incoming complex orders will first check for execution opportunities vs. contra complex orders within the complex order book.
- Executable Complex Orders – No auction or delay in processing.
- Ratio of complex order legs must be preserved.
- Incoming complex orders that trade vs. resting complex orders in the book will receive price improvement.
- Incoming complex orders that trade vs. screen markets will receive price improvement.
- Any screen market legs that trade vs. a complex order will trade in strict price/time.
  - No LMM % guarantee.
  - No customer priority.

9.7   FIX Order and Trade Dissemination

Execution Report
Complex order executions are reported as individual FIX Execution Reports, per leg. Firms receive the Standard Execution Report from NYSE Arca (OX) if they use the FIX Order Entry connection.
An Order Entry connection receives orders from a firm's order routing system. The orders are automatically executed and the reports are returned to the firm.
The Execution Report message:
- Confirms the receipt or rejection of an order
- Confirms the changes to an existing order
- Provides order status information
- Provides fill information on working orders
- Provides information on trade busts and adjustments
  - Trade busts or adjustments are performed independently of the order.
  - Busting a trade does not recreate an order or add the quantity to an open order.
  - Trades are adjusted by sending a bust, followed by a new trade.
- Adjusting a trade does **not** affect the open quantity of an order.

Order Cancel Reject
The Order Cancel Reject message is used when an Order Cancel Request or Order Cancel/Replace Request cannot be honored.
Message requests that change the price or quantity of an order are only performed when an outstanding quantity exists. Filled orders cannot be changed.

Reasons for rejecting a Cancel Order Request:
- Order was not found.
- Order does not exist because it was already filled.
- Cancel can't be routed to the target system for a technical reason.

Order Reject
The Order Reject message is used when an order does not contain valid data and cannot be processed or when an order can't be routed to the target system for a technical reason.
Cancel/Replace
Because order senders lose all priority with any modifications, participants will send cancel and replace separately. Cancel/replace messages are not supported at this time.

9.8   Trade Reporting

Trade Reporting to OPRA
Complex trades will be reported as individual trades and marked as spread transactions.
- OPRA will not support dissemination of Complex order BBO markets
- Trades in complex products must be disseminated to OPRA as trade reports in their leg components marked as "spread" trades

NYSE Arca Solutions to Data Mitigation Issue
For dark series (due to data mitigation) NYSE Arca will light up the single market legs when NYSE Arca receives a complex order that includes the individual components.

9.9   Post Trade Processing

Drop Copies
Drop copies of individual leg trade reports for complex orders will be supported. Drop copies for both equity and option legs will come from the NYSE Arca Options platform (OX). You can receive the drop copies via FIX though your current Drop Copy FIX session, or you may request a new one. For your Drop Copy session request, please e-mail Connectivity@nyx.com or call our support line at (888) 689-7739 Option 1.

Post Trade Adjustments
Post trade allocation of complex orders is supported. Leg ratios must be preserved.

Trade Reporting to OCC
Individual legs of complex orders will be reported to OCC.

IPOPs
All clearing of complex order trades will occur via their individual leg components.
Equity leg will clear via equities clearing, not via iPOPs.

ArcaVision User Interfaces
All complex trade data will be reported in ArcaVision as both the complete strategy as identified by the Arca "FAST" symbol, trade quantity, and net trade price; and as the individual leg trade reports (each leg must include the FAST symbol identification).

9.10 FIX Application Protocol for Complex Orders

This section describes the FIX Application messages used in sending and receiving messages. We only support FIX 4.0, 4.1 and 4.2 at the session level. For Complex Orders, we retrofitted the AB Message type that is defined in FIX 4.3 to be used in FIX 4.0, 4.1 and 4.2 rather than invent a new message type.

Complex Order – Multi-Leg

In addition to requirements for the standard FIX message header, the following fields are used by the application layer for a New Order Single (Multi Leg):

Tag	Field	Description	Req.	Values
	Standard Header		*Y*	*MsgType = AB*
1	Account	Account identifier	N	Optional field.
11	ClOrdID	Unique identifier of the order, which is assigned by the client.	Y	This value has a maximum of 25 characters. **Note**: Firms must specify a ClOrdID value for the entire multi-leg order in tag 11.
18	ExecInst	Used to specify values for different order types	N	6 = PNP (Used on PNP Light Only Order) M = PNP Complex Plus
38	OrderQty	Quantity ordered	Y	Number of times the spread is available.
40	OrdType	Type of order	Y	2 = Limit
44	Price	The net price of the spread.	N	Debit (Explicit negative value) is Willing To Pay -0.00 Credit (Implicit positive value) is Wants Cash Back 0.00
50	SenderSubID	Assigned value used to identify specific message originator	N	Assigned value that identifies the message originator.
54	Side	Side of order	Y	B = "As Defined" (for use with MultiLeg instruments)
59	TimeInForce	Specifies how long the order remains in effect. Absence of this field is interpreted as DAY.	N	The valid values are: 0 – Day 1 – GTC (Good Till Cancel) 3 – IOC (Immediate or Cancel
167	Security Type	Indicates type of security.	Y	**MLEG – Multi-Leg**
204	CustomerOrFirm	Used for options when delivering the order to an execution system to specify if the order is for a customer, firm, or Market Maker placing the order itself.	Y	0 = Customer 1 = Firm 2 = Broker/Dealer 3 = MarketMaker
440	ClearingAccount	Used for CMTA Information	N	≤ 4 characters CMTA Clearing Firm Value

Tag	Field	Description	Req.	Values
555	NoLegs	Number of InstrumentLeg repeating group instances.	Y	2, 3, 4, and 5 depending on the number of legs in the complex order.
	Component block **<InstrumentLeg>**		Y	
564	LegPositionEffect	PositionEffect for leg of a multileg See PositionEffect (77) field for description	Option legs only	Option legs only. The valid values are: O – Open C – Close
600	LegSymbol	Multileg instrument's individual security's Symbol. See Symbol (55) field for description	Y	For option leg, this is the OCC trading symbol. For Equity leg, this is the Underlying Symbol
608	LegCFICode	Individual security CFI code for the multi-leg instrument.	Y	For Options: OC – Option-Call [OPT] OP – Option – Put [OPT] ES – Equity Common Shares [ES]
610	LegMaturityMonthYear	Multileg instrument's individual security's MaturityMonthYear.	Y	Option legs only. Expiration month and year in the YYYYMM format.
611	LegMaturityDate	Multileg instrument's individual security's Day.	N*	Option legs only. Expiration Date in the YYYYMMDD format. Once the exchange moves to Explicit, this tag will be required.
612	LegStrikePrice	Multileg instrument's individual security's StrikePrice.	Y	Option legs only. Strike price for an option. The valid values are: 0 – 99999999.9999 (the number of decimal places might vary and is limited to 2, which means rounding down on the 3rd decimal place).
614	LegContractMultiplier	Multileg instrument's individual security's ContractMultiplier.	Y©	Numerical Value (Required only on options legs if number of shares in options series is not equal to 100)
623	LegRatioQty	The ratio of quantity for this individual leg relative to the entire multi-leg security.	Y	Integer value (no decimals)
624	LegSide	The side of this individual leg (multileg security).	Y	The valid values are: 1 – Buy 2 – Sell 5 – Sell Short (Equity Leg Only)
654	LegRefID	Unique indicator for a specific leg.	Y	Unique customer assigned value for each leg.
</InstrumentLeg>				
9417	ExtendedPNP	Used in FIX message prior to leg definitions to designate PNP Light	N	L = PNP Light Only
	Standard Trailer		*Y*	

FIX Cancel Request

In addition to requirements for the standard FIX message header, the following fields are used by the application layer for a Cancel Request:

Tag	Field	Description	Req.	Values
	Standard Header		*Y*	*MsgType = F*
11	ClOrdID	Unique identifier of the cancel request, which is assigned by institution.	Y	Unique identifier of the cancel request, which is assigned by the institution. Can be the Parent ClOrdID or ClOrdID of any **option** leg.
38	OrderQty		Y	Quantity from Order Message
41	OrigClOrdID	Unique identifier of the cancel request, which is assigned by institution.	Y	ClOrdID of the order that needs to be canceled. This is **not** the initial order of the day.
54	Side	Must match side of original order	Y	Must match side of original order. (B is the only valid value)
55	Symbol	This value must match the original order.	Y	Valid OCC Root or Explicit Symbol or FAST Instrument.
167	SecurityType	Must match side of original order.	Y	**MLEG – Multi-leg (If the cancel Request is on the FAST Symbol)** **OPT – Option (If the cancel request is on a leg)**
200	MaturityMonth	This must match the value of the original order.	Y	YYYYMM
201	PutOrCall	This must match the value of the original order.	Y	0=Put, 1=Call
202	StrikePrice	This must match the value of the original order.	Y	0 – 99999999.9999
205	MaturityDay	This must match the value on the original order.	Y	DD
	Standard Trailer		*Y*	

Please Note: A Cancel on any leg of a complex order will result in all the legs of the order being canceled.

FIX Execution Report

In addition to requirements for the standard FIX message header, the following fields are returned by the application layer for an Execution Report Message:

Tag	Field	Description	Req.	Values
	Standard Header		*Y*	*MsgType = 8*
11	ClOrdID	Unique identifier of the order.	Y	Unique identifier of the order. This value uses the ID from the original order.
14	CumQty	Total number of filled options.	Y	Valid values are 0 – 1000000000 6 AvgPx Y Average price that is calculated based on the fills of the order. Valid values are 0 – 99999999.9999 The number of decimal places can vary and is not limited to four.
17	ExecID	Must be unique to the matching engine the execution originates from.	Y	Numerical up to 20 characters
19	ExecRefID	Reference identifier used with Trade Cancel and Trade Correct execution types.	N	This field contains the ExecID value.
20	ExecTransType	Identifies the trade type.	Y	The valid values are: 0 – New 1 – Cancel 2 – Correct
31	LastPx	Price of the last fill.	Y	The valid values are: 0 – 99999999.9999 (the number of decimal places might vary and is not limited to four).
32	LastShares	Quantity of bought/sold contracts on the last fill.	Y	The valid values are: 0 – 1000000000
37	OrderID		Y	Numerical up to 20 characters
38	OrderQty		Y	Returned from Order
39	OrdStatus	Current status of the order.	Y	The valid values are: 0 – New 1 – Partially filled 2 – Filled 4 – Canceled 6 – Pending Cancel 8 – Rejected E – Pending Cxl/ Replace(for FIX v4.2)
40	OrdType		Y	Returned from Order
44	Price		N	Returned from Order
54	Side		Y	Returned from Order
55	Symbol		Y	OCC option symbol for a series that is specified on the order.
59	TimeInForce		N	Returned from Order
60	TransactTime		N	Date and time of execution/order creation (expressed in GMT). The

Tag	Field	Description	Req.	Values
				format is: *YYYYMMDD* and *HHMMSS.*
77	OpenClose		Y	Returned from Order
150	ExecType	Describes the order execution.	Y	The valid values are: 0 – New 1 – Partially filled 2 – Filled 4 – Canceled 6 – Pending Cancel 8 – Rejected E – Pending Cancel Replace(for FIX v4.2)
151	LeavesQty	Number of options that are open for further execution.	Y	Valid values are 0 – 1000000000 If OrdStatus is Canceled or Rejected (no longer active), then LeavesQty = 0. Otherwise, LeavesQty = OrderQty – CumQty
200	MaturityMonthYear	Month and Year of the maturity (used for standardized futures and options).	Y	Expiration month and year in the *yyyymm* format, as specified on the order.
201	PutOrCall	Indicates whether an Option is for a put or call.	Y	Returned from Order
202	StrikePrice	Strike Price for an Option.	Y	As specified on the order. Valid values are: 0 – 99999999.9999 (the number of decimal places might vary and is not limited to four).
204	CustomerOrFirm		Y	Returned from Order
442	MultilegReportingType	Used to indicate what an Execution Report represents (e.g. used with multi-leg securities, such as option strategies, spreads, etc.).	Y	Indicates the type of Execution Report. For example, option strategy, spreads and so on. The valid values are: 2 – Individual leg of a multi-leg security 3 – Multi-leg security
654	LegRefID	Unique indicator for a specific leg.	Y	As specified on the order.
	Standard Trailer		*Y*	

FIX Cancel Reject Message

In addition to requirements for the standard FIX message header, the following fields returned by the application layer for a Cancel Reject Message:

Tag	Field	Description	Req.	Values
	Standard Header		*Y*	*MsgType = 9*
11	ClOrdID	Unique identifier of the cancel request, which is assigned by institution.	Y	Unique identifier of the cancel request, which is assigned by institution.
39	OrdStatus	This value is applied after the Cancel Reject function is completed.	Y	Valid values: 8 = Rejected
41	OrigCIOrdID	Unique identifier of the cancel request, which is assigned by institution.	Y	ClOrdID of the order that cannot be canceled. This value does **not** apply to the initial order of the day.
58	Text		Y	Reason for rejecting the Cancel Order Request.
102	CxlRejReason	Code to identify reason for cancel rejection.	N	Valid values: 0 = Too late to cancel 1 = Unknown order
434	CxlRejResponseTo	Identifies the type of request that a Cancel Reject is in response to.	Y	The valid values are: 1 – Order Cancel Request
	Standard Trailer		**Y**	

9.11 Accepted Order Types for Complex Orders

Order Type	Fix tags	Description	Exchange Platform	Available Sessions
Limit Order	OrdType (40) = 2 (limit)	An order to buy or sell at a specified price or better. A marketable limit order is a limit order to buy/sell at or above/below the consolidated best offer/bid for the security For limit orders, the price will be expressed on net debit/credit basis for the sum of all legs.	Complex Orders	- Core
PNP Light Only Order	OrdType (40) = 2 ExecInst (18) = 6 ExtendedPNP (9417) = L	PNP LO orders are limit orders that do not route to away markets. Marketable incoming PNP LO orders will trade against any displayed interest and post remaining shares to the NYSE Arca book. PNP LO orders that lock or cross the National Best Bid and Offer (NBBO) will cancel back to the	Complex Orders	-core

		order sending firm. Incoming PNP LO orders will also cancel back to the order sending firm under the following conditions: If incoming PNP LO order is marketable against any non-displayed interest present in the NYSE Arca book, including resting PNP Blind (PNP B) orders and hidden portions of reserve orders. Once posted and disseminated, the PNP LO order will stand its ground, i.e. it will not route or cancel if locked/crossed by an away BBO.		
PNP+ Complex Order	OrdType (40) = 2 ExecInst (18) = M	PNP+ Complex orders are designed to provide the sender price improvement over the leg markets at the time of execution. Upon receipt, our matching engine will validate the price of a PNP+ Complex order against the leg markets and if the order is marketable against these leg markets or would post to the book at a price less than one MPV (minimum price variation) away from all of the leg markets, the order will price back one MPV from the derived (net price) BBO and post to the complex order book. PNP+ Complex orders will track the screen markets to both better and worse prices, always maintaining a one MPV buffer. • If leg markets improve so a resting PNP+ Complex order is marketable against the legs, the PNP+ Complex order will price back one MPV and repost. • If the leg markets worsen, the PNP+ Complex order will repost at the more aggressive price, up/down to the net debit or credit price of the order, always remaining one MVP distance from the leg markets. • If an incoming marketable contra side PNP+Complex order is received, it will immediately trade against the posted order, as long as the execution price is at least 1 MPV away from either side of the complex BBO.	Complex Orders	-core

10 NYSE Amex Options

10.1 Introduction

The NYSE Arca FIX Customer Gateway can be used to route orders to NYSE AMEX Options, the newly acquired Options subsidiary of NYSE Euronext. Any NYSE Arca Options Exchange customer who is also an NYSE AMEX Options member may use their NYSE Arca FIX connections to access NYSE AMEX Options.

10.2 NYSE Amex Options Symbology

NYSE Amex Options supports two styles of symbology for entering Options orders.

OCC Style – up to 6 characters   OCC Explicit – up to 6 characters **(Not available yet)**
Symbol (55) = MSQ   Symbol (55) = MSFT
MaturityMonthYear (200) = 200510   MaturityMonthYear (200) = 200906
PutOrCall (201) = 1   PutOrCall (201) = 1
StrikePrice (202) = 22.5   StrikePrice (202) = 20
                                    MaturityDay (205) = 20

10.3 NYSE Amex Options - OSI Symbology Testing

As of July 2009, Explicit symbology testing will be available in our Amex Options test environment. This symbology testing will require two to three days advance notice to Connectivity@nyx.com from any firm that wishes to test. This way the proper arrangements are made and our Amex test Matching Engine is converted to Explicit Symbology for the requesting firm.

For an outright order, you must enter FIX Tags 55, 200, 201, 202 and 205 to identify the series in explicit format. If the number of shares the option series represents is not 100, then you must add FIX Tag 231 to your message also.

For more information on the upcoming OCC OSI changes, please see the following links:

http://www.optionsclearing.com/initiatives/symbology

http://www.optionsclearing.com/initiatives/symbology/osi_consolidation_plan.pdf

10.4 NYSE AMEX Hours of Operation

Hours of Operation for NYSE AMEX Options Routing

Core Session – 9:30 AM – 4:00 PM

10.5 NYSE AMEX Options Specific FIX Tag Information

In addition to requirements for the standard FIX message header, the following fields are used by the application layer for a New Order – Single message for Options.

Tag	Field	Description	Req.	Values
55	Symbol	OCC Underlying or OCC Explicit Underlying Symbol	Y	OCC Underlying or OCC Explicit Underlying Symbol
77	OpenClose	Indicates status of client position in the option.	Y	O=Open C=Close
167	SecurityType	Identifies type of instrument.	Y	OPT= Options
200	MaturityMonth	Indicates Maturity Month	Y	YYYYMM
201	PutOrCall	Indicates Put or Call	Y	0=Put, 1=Call
202	StrikePrice	Indicates Strike Price	Y	0 – 99999999.9999
204	Customer/Firm/ Broker/MarketMaker	Indicates Client role in order	Y	0=Customer 1=Firm 2=Broker, 3=Marketmaker
205	MaturityDay	Indicates Maturity Day for series	Y	DD
207	SecurityExchange	MIC code of the exchange	Y	XASE
231	ContractMultiplier	Indicates the ratio or multiply factor to convert from contracts to shares (e.g. 1.0, 100, 1000, etc).	Y ©	Numerical Value (Required only if number of shares in options series is not equal to 100)

Optional Tags needed on certain Option orders regardless of Symbology Style:

Tag	Field	Description	Req.	Values
277	TradeCondition	Space-delimited list of conditions describing a trade	N	1
440	ClearingAccount	Indicates OCC number of the clearing firm for CMTA.	N	≤ 4 characters (Only if firm supports CMTA)
526	Optional Data	Customer Defined Identifier used for clearing purposes.	N	Up to 16 Characters – Alpha Numeric
752	StrategyIndicator	Strategy Indicator	N	2 = Multi Leg Order *(Floor Cross Only)*
*1003	*TradeID*	*The unique ID assigned to the trade entity*	*N*	*Up to 9 characters* *(Floor Cross Only)*

*7929	CAPStrategyIndicator	Qualifier for CAP strategy	N	Y = Yes N = No **(Floor Cross Only)**
9416	ExtendedExecInst	Extended Execution Instruction	N	C = Clear customer volume from book **(Floor Cross Only)**
9417	ExtendedPNP	Used for PNP Blind	N	B = PNP Blind

10.6 Specific FIX Tag Information for NYSE AMEX Market Maker Orders

In addition to the required tags in section 10.3, option orders that are entered in a market maker (204=3) capacity must have a valid MarketMaker ID (MMID) in the SenderSubID field. If you are a local market maker you must enter your OX MMID in Tag 50. If you are entering the order as an away market maker you must enter MM-XXX (where XXX = the away MMID) in Tag 50.

<u>Tag</u>	<u>Field</u>	<u>Description</u>	<u>Req.</u>	<u>Values</u>
50	SenderSubID	Local or Away MMID. If Local Market Maker 50 = MMID If Away Market Maker 50 = MM-(MMID of away Market Maker)	Y	Customer defined. For Market Makers this value will be agreed up on between NYSE AMEX and client.
204	Customer/Firm/ Broker/MarketMaker	Indicates Client role in order	Y	3 = Marketmaker

10.7 Multi-Day Orders (GTCs)

To send multi day orders clients must send the following on their order messages:

- TimeInForce = 1 (GTC)
- The ClOrdID needs to contain the date. The ClOrdID must start with YYYYMMDD.

10.8 NYSE AMEX Defined Fields

The following FIX fields have been added or created due to customer demand. They are used to assist customers in trade reconciliation and also for billing purposes.

LastMkt (Tag 30)
The FIX LastMkt field will be specified on execution reports containing trades.

Values for this field:
- AO – NYSE AMEX Options

The client may need this field for back office clearing and reporting purposes.

Liquidity Indicator (Tag 9730)

The Liquidity indicator is a proprietary FIX field sent on execution reports by NYSE AMEX for option trades to indicate what effect an order has had on the liquidity of the book. Client's rates are determined by whether an order adds or removes liquidity from the book. The LiquidityIndicator is FIX Tag 9730 and is registered on the fixprotocol.org website.

The values that clients can expect to receive in this field are:

Executions on NYSE AMEX Options

A = Liquidity Adding
R = Liquidity Reducing
O = Liquidity Neutral – Orders executed in an auction

Routed Orders

X = Routed to another venue

This is a configurable setting that is turned on at the request of the customer. You must submit a request to have this field sent. Please email connectivity@nyx.com to request this on your sessions.

10.9 NYSE AMEX FIX Application Protocol

New Order – Single (NYSE AMEX Options)

In addition to requirements for the standard FIX message header, the following fields are used by the application layer for a NYSE AMEX Options New Order – Single message.

Tag	Field	Description	Req.	Values
	Standard Header		*Y*	*MsgType = D*
1	Account	If this field is present, we copy the information into execution messages referring to this order. This field can be used for clearing information.	N	Agreed upon clearing value
11	ClOrdID	This field contains the ID assigned to the order by the firm. This value must be <= 30 characters. It is critical that this ID is unique for all orders sent today. The FIX 4.0 protocol does not specify what to do if this ID is duplicated. We will ignore the order in FIX 4.0 if duplication occurs. In FIX 4.1 and 4.2, we send an Execution Report with ExecType, OrdStatus = Rejected, and OrdRejReason = Duplicate Order (6).	Y	Customer Defined <=30 characters
18	ExecInst	Used to specify values for different order types	N	1=Hot Held (NOW Only) 6=PNP G=AON M=Complex PNP Plus d=Tracking Order
38	OrderQty	Indicates share quantity on order	Y	1-999,999
40	OrdType	Indicates order type of order	Y	1=Market 2=Limit 3=Stop 4=Stop Limit R=Floor Cross
44	Price	Indicates price on order in decimals.	Y	.01-99999.99
50	SenderSubID	This field, if present, will be copied into the TargetSubID field of all messages referring to the order. Your firm must not embed dates, time stamps, or order IDs in this field, as doing so will make aggregation of orders for troubleshooting purposes impossible.	Y	Customer defined. For Market Makers this value will be agreed up on between NYSE AMEX and client. *For Options orders that are entered in a market maker (204=3) capacity you must enter a valid market maker ID MMID in this field. If you are a local market maker you must enter your OX MMID. If you are entering the order as an away market maker you must enter MM-XXX (where XXX =

				the away MMID).
52	SendingTime	This value must be within 60 seconds of the current time, or we will reject the order.	Y	Time in UTC format. YYYYMMDD-HH:MM:SS
54	Side	Side of the Order	Y	1=Buy 2=Sell
55	Symbol	This field must contain a valid symbol in upper case lettering.	Y	Valid OCC Root Symbol
57	TargetSubID	This field is required. The value must be "ARCA" for production. All messages referring to the order will have the SenderSubID set to this value.	Y	ARCA
59	TimeInForce	If a value is not present in this field, the default is Day.	N	0 = Day 1 = GTC 2 = At the Opening 3 = IOC 4 = FOK
65	SymbolSfx	This field must contain a valid symbol in upper case lettering.	N	Valid Suffix value
77	OpenClose	Indicates status of client position in the option.	Y	O=Open C=Close
97	PossResend	An order sent with PossResend set is checked to see if it matches an existing order with the same ClOrdID. If not, it is treated as a new order. If it is a duplicate, the FIX specification states that we should send back an Execution status message. We currently do not support status messages yet, so we will ignore the message if the order is on file.	N	Y
99	StopPx	Set to dictate stop price on stop orders (Options Only)	N	.01-99,9999
110	MinQty	Set to indicate quantity for minimum eligible fill on discretion orders	N	>100
111	MaxFloor	Used for reserve orders	N	>100
115	OnBehalfOfCompID	This field normally is ignored, although can be used for clearing information.	N	Agreed upon clearing value
128	DeliverToCompID	MMID of Directed Order Contra	N	Used for directed orders and Floor Cross (40=R) TNTs only. Will contain MMID of contra party the sender is directing their order to.
167	SecurityType	Identifies type of instrument.	Y	OPT= Options
200	MaturityMonth	Indicates Maturity Month	Y	YYYYMM
201	PutOrCall	Indicates Put or Call	Y	0=Put

				1=Call
202	StrikePrice	Indicates Strike Price	Y	0 – 99999999.9999
204	Customer/Firm/ Broker/MarketMaker	Indicates Client role in order	Y	0=Customer 1=Firm 2=Broker 3=Marketmaker* *see SenderSubID field in New Order-Single table
205	MaturityDay	Indicates Maturity Day for series with more than one expiration date in a month.	Y	DD
207	SecurityExchange	MIC code of the exchange	Y	XASE = NYSE Amex Options Exchange
277	TradeCondition	Space-delimited list of conditions describing a trade	N	1
336	TradingSessionID	Refer to section 3.1.2 for more details.	N	P2=Core
386	NoTradingSessions	The number of instances of TradingSessionID values following.	N	1
440	ClearingAccount	Indicates OCC number of the clearing firm for CMTA.	N	≤ 4 characters (Used if firm supports CMTA)
526	Optional Data	Customer Defined Identifier used for clearing purposes.	N	Up to 16 Characters – Alpha Numeric
752	StrategyIndicator	Strategy Indicator (Floor Cross Only)	N	2 = Multi Leg Order
1003	TradeID	The ID assigned to the trade entity (Floor Cross Only)	N	Up to 9 characters Originator of the trade + Contra ID (Example: 1003=T41+J69P) (Required on TNT Notification and TNT Response)
7929	CAPStrategyIndicator	Qualifier for CAP strategy (Floor Cross Only)	N	Y = Yes N = No
9416	ExtendedExecInst	Extended Execution Instruction (Floor Cross Only)	N	C = Clear customer volume from book (Used on IOC orders) (Floor Cross Only) W = Wait Order (Options Only)
9417	ExtendedPNP	Used to indicate if the order is PNP Blind	N	B = PNP Blind (Required for PNP Blind)
	Standard Trailer		Y	

Execution Report (NYSE AMEX Options)

In addition to the standard FIX message header, the following fields are returned on a NYSE AMEX Execution Report message.

Tag	Field	Description	Req.	Values
	Standard Header		Y	*MsgType = 8*
1	Account	If this field is present, we copy the information into execution messages referring to this order. This field can be used for clearing information.	N	User specified up to 10 characters
6	AvgPx	Indicates Average Price of fills on order	Y	.0001-99999999.9999
11	ClOrdID	ClOrdID behavior defined in Execution Report section	Y	User specified up to 30 characters
14	CumQty	Indicates total quantity of fills on open order	Y	1-999,999
17	ExecID	Execution ID assigned by NYSE AMEX	Y	Numerical up to 20 characters
19	ExecRefID	On trade break or trade correction only	N	Contains the ExecID (Tag 17) value of the Fill that is broken or corrected. Numerical up to 20 characters.
20	ExecTransType	All execution reports	Y	0=New 1=Cancel (Trade Break Only) 2=Correct (Trade Correction Only)
30	LastMkt	Designates system of execution	Y	AO – AMEX Options
31	LastPx	Indicates price of fill	Y	.0001-99999999.9999
32	LastShares	Indicates quantity of fill	Y	1-999,999
37	OrderID	OrderId assigned by NYSE AMEX	Y	Numerical up to 20 characters
38	OrderQty	Indicates share quantity on order	Y	Up to 999,999
39	OrdStatus	Indicates status of order (Fix 4.0) or Indicates status or message (Fix 4.1and 4.2)	Y	0=New 1=Partially Filled 2=Filled 3=Done For Day 4=Cancelled 5=Replaced 6=Pending/Cxl Replace 8=Rejected E= Pending Cxl/Replace (4.2 only)
40	OrdType	Indicates order type of order	Y	1=Market 2=Limit 3=Stop 4=Stop Limit R=Floor Cross
44	Price	Indicates price on order in decimals	Y	0-9999999.9999
50	SenderSubID	Client will receive value specified in TargetSubID on order.	Y	ARCA

52	SendingTime	Time sent by NYSE AMEX	Y	Time specified in UTC time. YYYYMMDD-HH-MM-SS
54	Side	Only Buy or Sell	Y	1=Buy 2=Sell
55	Symbol	This field must contain a valid symbol in upper case lettering.	Y	Root Options Symbol
57	TargetSubID	Client will receive value specified in SenderSubID on order.	Y	User Specified up to 10 characters (Required if specified on the original order)
58	Text	Additional description of message	Y	0=New Order 1=Partially Filled 2=Filled 3=Done For Day 4=Cancelled 5=Replaced 6=Pending/Cxl Replace 8=Rejected
59	TimeInForce	If a value is not present in this field, the default is Day.	N	0=Day 1=GTC 2=At the Opening 3=IOC 4=FOK
60	TransactTime	Indicates time of transaction on ack or fill	Y	Time specified in UTC time. YYYYMMDD-HH-MM-SS
77	OpenClose	Indicates status of client position in the option.	Y	O=Open C=Close
99	Stop Price	Set to dictate stop price on stop orders	N	.01-99,9999
150	ExecType	Indicates status of order (FIX 4.1 and 4.2 only)	Y	0=New 1=Partially Filled 2=Filled 3=Done For Day 4=Cancelled 5=Replaced 6=Pending Cxl/Replace 8=Rejected E= Pending Cxl/Replace (4.2 only)
151	LeavesQty	Indicates open shares remaining on order	Y	1-999,999
167	SecurityType	Identifies type of instrument.	Y	OPT= Options
200	MaturityMonth	Indicates Maturity Month	Y	YYYYMM
201	PutOrCall	Indicates Put or Call	Y	0=Put 1=Call
202	StrikePrice	Indicates Strike Price	Y	0 – 99999999.9999
205	MaturityDay	Indicates Maturity Day for series with more than one expiration date in a month.	Y	DD
1003	TradeID	The ID assigned to the trade entity	Y	Up to 9 characters Originator of the trade + Contra ID (i.e T41+J69P) (Floor Cross Only)
	Standard Trailer		*Y*	

Order Cancel/Replace Request (NYSE AMEX Options)

In addition to requirements for the standard FIX message header, the following fields are used by the application layer for a NYSE AMEX Order Cancel/Replace Request.

Tag	Field	Description	Req.	Values
	Standard Header		**Y**	**MsgType = G**
11	ClOrdID	This field contains the ID assigned to the change by your firm. This value must be <= 49 characters. It is critical that this ID is unique for all orders and changes sent today, as well as any orders or changes that may be active from previous days. If this value is duplicated; we will send a Cancel Reject.	Y	User specified up to 30 characters (Will be ignored on fast cancel replaces as the ClOrdID on fast cancel replace messages is maintained throughout the chain)
18	ExecInst	This value must match the original order.	Y	1=Hot Held (NOW Only) 6=PNP G=AON d=Tracking Order
37	OrderID	If present, the value must exactly match the OrderID NYSE AMEX assigns to the order.	Y(C)	Numerical up to 20 characters (Required on fast cancel replaces)
38	OrderQty	This value can be changed	Y	1-999,999
40	OrdType	This value can be changed	Y	1=Market 2=Limit 3=Stop 4=Stop Limit R=Floor Cross
41	OrigClOrdID	This value must match the ClOrdID of the order being changed. Note in the case of multiple changes that. This value is the ClOrdID of the most current successful change. *if you are using the fast cancel message you must send the clordid of the first order in the chain in this field.	Y	User specified up to 30 characters
44	Price	This value can be changed	Y	.01-9999.99
52	SendingTime	This value must be within 60 seconds of the current time, or we will reject the order.	Y	Time specified in UTC time. Yyyymmdd-HH-MM-SS
54	Side	This value must match the original order.	Y	1=Buy 2=Sell 5=Sell Short

55	Symbol	This value must match the original order.	Y	Valid Symbol or Options Root Symbol
59	TimeInForce	This value can be changed.	Y (C)	0=Day 1=GTC 2=At the Opening 3=IOC 4=FOK (Required if specified on the original order)
65	SymbolSfx	This value must match the original order.	Y	Valid Suffix value
97	PossResend	A change request sent with PossResend set is checked to see if it matches an existing order with the same ClOrdID.	N	Y
99	StopPx	This value can be changed	Y (C)	.01-99,999
111	MaxFloor	This value can be changed	Y (C)	>100 (Required if specified on the original order)
167	SecurityType	This must match the value of the original order.	Y	OPT=Option
200	MaturityMonth	This must match the value of the original order.	Y	YYYYMM
201	PutOrCall	This must match the value of the original order.	Y	0=Put, 1=Call
202	StrikePrice	This must match the value of the original order.	Y	0 – 99999999.9999
205	MaturityDay	This must match the value on the original order.	Y	DD
207	SecurityExchange	MIC code of the exchange	Y	XASE
336	TradingSessionID (repeating field)	This value cannot be changed if used	N	P2 (Core hours only)
386	NoTradingSessions	This value cannot be changed if used	N	1
423	PriceType	This must match the value of the original order.	Y (C)	1= percentage of Par (Required if specified on the original order)
440	ClearingAccount	Overriding CMTA number	Y(C)	≤ 4 characters (Required only and if specified on original order or is being changed)
9416	ExtendedExecInst	To indicate a Fast Cxl/Replace is being used.	Y(C)	1 = Fast Cancel Replace (Required on Fast Cancel Replace)
	Standard Trailer		*Y*	

Order Cancel Request (NYSE AMEX Options)

In addition to requirements for the standard FIX message header, the following fields are used by the application layer for a NYSE AMEX Order Cancel Request.

Tag	Field	Description	Req.	Values
	Standard Header		*Y*	*MsgType = F*
11	ClOrdID	This field contains the ID assigned to the change by your firm. This value must be <= 49 characters. It is critical that this ID is unique for all orders and changes sent today, as well as any orders or changes that may be active from previous days. If this value is duplicated; we will send a Cancel Reject.	Y	User specified up to 30 characters
18	ExecInst	This value must match the original order.	Y(C)	1=Hot Held (NOW Only) 6=PNP G=AON d=Tracking Order (Required if specified on the original order)
37	OrderID	If present, the value must exactly match the OrderID NYSE AMEX assigns to the order.	N	Numerical up to 20 characters
38	OrderQty	This value must match the original order.	Y	1-999,999
40	OrdType	This value must match the original order.	Y	1=Market 2=Limit 3=Stop 4=Stop Limit R=Floor Cross
41	OrigClOrdID	This value must match the ClOrdID of the order or replaced order being cancelled. This value is the ClOrdID of the most current successful change. If the order was not changed/replaced, then this will be the ClOrdID of the original order.	Y	User specified up to 30 characters
44	Price	This value must match the original order.	Y	.01-9999.99
52	SendingTime	This value must be within 60 seconds of the current time, or we will reject the order.	Y	Time specified in UTC time. Yyyymmdd-HH-MM-SS
54	Side	This value must match the original order.	Y	1=Buy 2=Sell

55	Symbol	This value must match the original order.	Y	Valid Symbol or Options Root Symbol
59	TimeInForce	This value must match the original order.	Y(C)	0=Day 1=GTC 2=At the Opening 3=IOC (Required if specified on the original order)
65	SymbolSfx	This value must match the original order.	Y	Valid Suffix value
97	PossResend	A change request sent with PossResend set is checked to see if it matches an existing order with the same ClOrdID.	N	Y
99	StopPx	This value must match the original order.	Y(C)	.01-99,999 (Required if specified on the original order)
111	MaxFloor	This value must match the original order.	Y(C)	>100 (Required if specified on the original order)
167	SecurityType	This must match the value of the original order.	Y	OPT=Option Trade
200	MaturityMonth	This must match the value of the original order.	Y	YYYYMM
201	PutOrCall	This must match the value of the original order.	Y	0=Put, 1=Call
202	StrikePrice	This must match the value of the original order.	Y	0 – 99999999.9999
205	MaturityDay	This must match the value on the original order.	Y	DD
207	SecurityExchange	MIC code of the exchange	Y	XASE (NYSE AMEX)
423	PriceType	This must match the value of the original order.	Y(C)	1= percentage of Par (Required if specified on the original order)
440	ClearingAccount	This must match the value of the original order.	Y(C)	≤ 4 characters (Required if specified on the original order)
	Standard Trailer		*Y*	

Order Cancel Reject (NYSE AMEX Options)

In addition to requirements for the standard FIX message header, the following fields are returned by the application layer on a NYSE AMEX Order Cancel Reject Message.

Tag	Field	Description	Req.	Values
	Standard Header		*Y*	*MsgType = 9*
11	ClOrdID	Unique identifier of the cancel request, which is assigned by institution.	Y	Unique identifier of the cancel request, which is assigned by institution.
39	OrdStatus	This value is applied after the Cancel Reject function is completed.	Y	Valid values: 8 = Rejected
41	OrigCIOrdID	Unique identifier of the cancel request, which is assigned by institution.	Y	ClOrdID of the order that cannot be canceled. This value does **not** apply to the initial order of the day.
58	Text		Y	Reason for rejecting the Cancel Request.
102	CxlRejReason	Code to identify reason for cancel rejection.	N	Valid values: 0 = Too late to cancel 1 = Unknown order
434	CxlRejResponseTo	Identifies the type of request that a Cancel Reject is in response to.	Y	The valid values are: 1 – Order Cancel Request
	Standard Trailer		*Y*	

10.10   Floor Cross (40=R) TNT Specification Information

Introduction

The new NYSE AMEX Options Exchange will provide a high-speed electronic trading environment along with the ability to conduct crowd trading on the floor. Amex Market Makers will be encouraged to participate in trading in a variety of ways:

- MMs will be able to quote into the automated market electronically;
- MMs will be able to send order flow into the automated market electronically;
- MMs will be able to participate in or initiate open outcry trades in the crowd with electronic affirmation and trade delivery process.

This document describes the API that supports the reporting floor cross trades and affirming their involvement in such trades. Other interface spe cifications describe how market makers interface with the electronic system to submit quotations, orders, and receive drop copies of executions.

The plan is to use a simple FIX version 4.2 message set to communicate floor cross information between the exchange's system and market makers. Besides standard session logon messages, the interface will include 2 application messages to be used as follows:

1) FIX execution report:
   a. Used to report a Floor Cross or Open Outcry trade to the exchange's system;
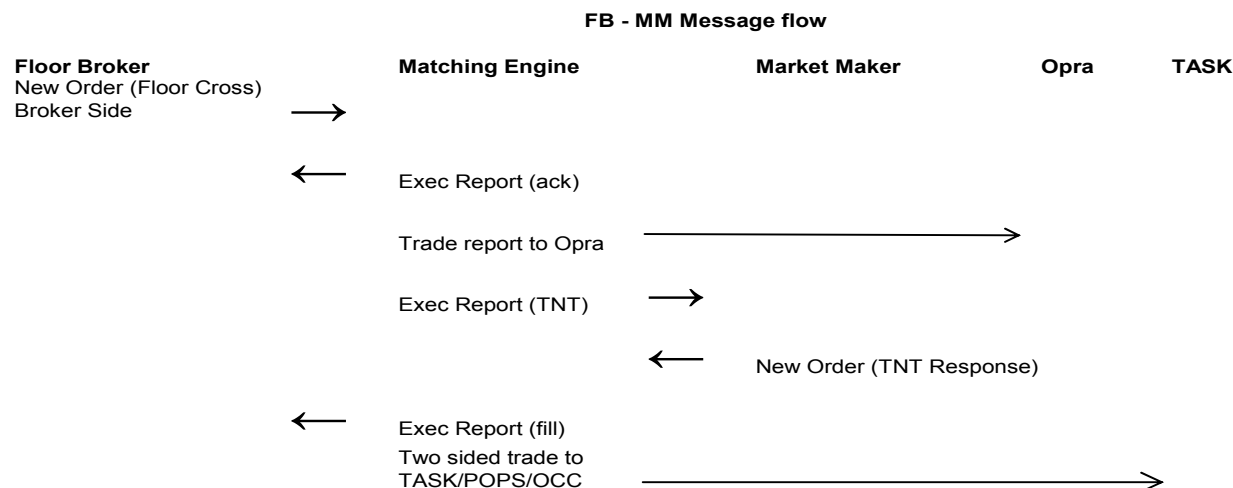   b. Used by exchange to acknowledge receipt of a Floor Cross or Open Outcry trade;

   c. Used by the exchange to deliver a Trade Notification (TNT) to the market maker's system to be affirmed.

2) FIX new order single: used by Market Makers to send a TNT Response to affirm participation in a trade that was sent via a TNT.

Market makers will be involved in trades with Floor Brokers counterparties as well as trade where other Market Makers are the counterparty. The processing flow for each scenario is described in the following sections.

When a Market Maker trades with a Floor Broker:

1) Broker initiates entry, regardless of side.
2) Broker sends broker side of trade to exchange system as floor cross identifying contra side MM ID.
3) Exchange system sends ack back to broker to confirm receipt of broker side.
4) Exchange system will send message to OPRA immediately upon receipt of broker side of floor cross.
5) Exchange system recognizes that this is a FB-MM trade and sends FIX exec report TNT to MM or MM's clearing firm.
6) MM is expected to send FIX new order message to Exchange system to affirm TNT including the trade ID that was sent on TNT.
7) Exchange system will send data to clearing only message <u>after</u> MM response received. This will initiate downstream processes to send data to POPS and OCC.
8) If MM does not respond, this constitutes a DK on the trades and it will not settle. No explicit non-affirm message,
9) Exchange system will send FIX exec report fill message to broker.
10) Trading Official will have ability to manually affirm MM side of trade and record that affirmation was done manually. When this happens, Exchange system will send one FIX exec report trade confirm message to broker.
11) Trading Official will also have ability to bust trade.

Diagram:

FB - MM Message flow

Floor Broker	Matching Engine	Market Maker	Opra	TASK

New Order (Floor Cross) Broker Side   ⟶

⟵   Exec Report (ack)

Trade report to Opra   ⟶

Exec Report (TNT)   ⟶

⟵   New Order (TNT Response)

⟵   Exec Report (fill)
Two sided trade to TASK/POPS/OCC   ⟶

When a Market Maker trades with another Market maker:

1) Sell side MM sends FIX exec report floor cross to Exchange system will have ID of contra side MM with trade ID. Exchange system sends exec report ack back to sell side MM to confirm receipt of floor cross order.
2) Exchange system will send message to OPRA immediately upon receipt of sell MM side of floor cross.
3) Exchange system recognizes that this is a MM-MM trade and sends FIX exec report TNT to buy side MM or MM's clearing firm.
4) Buy side MM is expected to send FIX New Order floor cross message to Exchange system in response to TNT FIX exec report including trade ID that was sent on TNT.

5) Exchange system will send one FIX exec report fill message to sell side MM, no report to buy side.
6) If buy side MM FIX floor cross side not received within N seconds of sell side, Exchange system will generate an alert. Trading Official will then follow up with market makers.
7) Trading Official will have ability to manually affirm buy MM's side of trade and record that affirmation was done manually. When this happens, exchange system will send FIX exec report fill messages to sell side MM only.
8) Trading Official will have ability to bust trade. No FIX exec reports sent. Trade will be manually busted in clearing system as well.

Diagram:

MM - MM Message flow						
Market Maker (seller)		Matching Engine		Market Maker (Buyer)	Opra	TASK
New Order (Floor Cross) Sell Side	⟶					
	⟵	Exec Report (ack)				
		Trade report to Opra	⟶			
		Exec Report (TNT)	⟶			
			⟵	New Order (TNT Response)		
	⟵	Exec Report (fill)				
		Two sided trade to TASK/POPS/OCC	⟶			
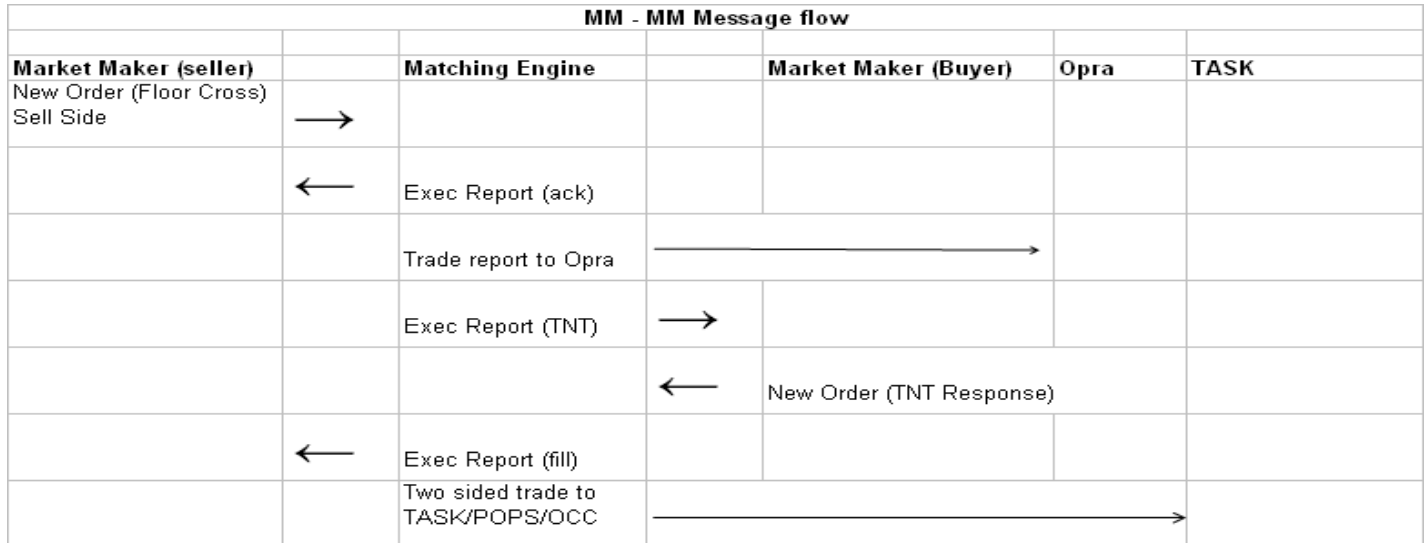
9) Notes on Market Maker connectivity to Exchange system:

   a. All MM's trading open outcry must have FIX connection into Exchange system via the FIX floor trading gateway.
   b. A dedicated FIX gateway will be available for all MM connections.
   c. The Market maker Direct quoting API will not be used for this type of messaging.

10) FIX message types used to support TNT functionality

   a. FIX execution report (see Page 79)

      i. Use Tag 40 (OrderType) populated with value = R to represent floor cross trade coming from convergex

      ii. Use Tag 128 (DeliverToCompID) with value = MMID to send TNT to appropriate Market Maker.

   b. Market Maker TNT response – New Order Single (see page 75)

      i. Use Tag 1003 populated with value = Trade ID (Tag 1003) from execution report

      ii. Use Tag 128 to identify OTPID of the ContraParty (the MM traded with).

      iii. Tag 40 OrdType should be R.

      iv. Tag 54 Side should be same as the TNT message.

10.11   NYSE AMEX Options Order Types

Order Type	Fix tags	Description	Exchange Platform	Available Sessions
Market Order	OrdType (40)=1 (market)	An order to buy or sell that is to be executed at the best price obtainable.	NYSE AMEX Options	Core
Limit Order	OrdType (40) = 2 (limit)	An order to buy or sell at a specified price or better. A marketable limit order is a limit order to buy/sell at or above/below the consolidated best offer/bid for the security	NYSE AMEX Options	Core
IOC (immediate Or Cancel)	OrdType (40) = 2 TimeInForce (59) = 3	A limit order that is to be executed in whole or in part as soon as such order is received. The portion not so executed is to be treated as cancelled. IOC's only execute on NYSE AMEX and do not route.	NYSE AMEX Options	Core
Reserve Order	OrdType (40) = 2 (limit) MaxFloor (111) = (show size)	A reserve replenishes the displayed order size as executions are received, up to the total order quantity; away markets are routed at their quoted size or larger (if applicable) when hitting the bid or taking liquidity.	NYSE AMEX Options	Core
NOW order	OrdType (40) = 2 TimeInForce (59) = 3 ExecInst (18) = 1	A limited price order that is executed in whole or in part that will be routed to one or more NOW recipients (those venues that respond immediately with a fill or a cancel) for immediate execution if the order cannot be executed on NYSE AMEX. Orders are immediately canceled if not executed at the quoted price or better.	NYSE AMEX Options	Core
Tracking Order	OrdType (40) = 2 ExecInst (18) = d	An order that executes against outbound orders with a leaves quantity less than or equal to the size of the tracking limit order.	NYSE AMEX Options	Core
Post No Preference Blind (PNP B) Order	OrdType (40) = 2 ExecInst (18) = 6 ExtendedPNP (9417) = B	Marketable Contra Orders will first execute against the PNP B Orders, then the rest of the book. PNP B Orders will be ranked in time priority regardless of the price of the order when they are blind. When the PBBO moves away from the price of the PNP B but the prices continue to overlap; the PNP B will remain blind but adjust its price to the PBBO. When the PBBO moves away from the price of the PNP B and there is no longer price overlap, the PNP lights up and becomes a regular limit order including standing its	NYSE AMEX Options	Core

		ground. **Note: Fast Cancel/Replace is not available on Options PNP Blind Orders until further notice.**		
ISO Intermarket Sweep Order	OrdType (40) = 2 ExecInst (18) = f TimeInForce (59) = 3	<u>ISO Modifier</u> –Clients may send NYSE Amex Options an instruction to trade only with the Amex book and ignore all away market quotes (including Protected Quotes). This is known as the Intermarket Sweep Order (ISO) o ISO – Sweep the ARCA Book to the price, cancel any remaining balance, and ignore all external quotes. **ISO Orders will interact with all resting orders except Tracking Orders. ISO Orders are never routed out.**	NYSE AMEX Options	Core
Market On Open (MOO)	OrdType (40) = 1 (Market) Timeinforce (59) = 2 NoTradingSessions(386)=1 TradingSessionID (336) =P2	Market On Open orders are orders that are executable only within the opening auction If the order is not executed in the auction, the balance is cancelled.	NYSE AMEX Options	Core
Limit On Open (LOO)	OrdType (40) =2 (Limit) TimeInForce (59) = 2 NoTradingSessions(386)=1 TradingSessionID (336) =P2	Limit On Open orders are orders that are executable only within the opening auction If the order is not executed in the auction, the balance is cancelled.	NYSE AMEX Options	Core
Fill Or Kill	TimeInForce(59)=4 (FOK)	Order that will only fill if the entire order quantity can be matched immediately. If not the order will be cancelled back to the client.	NYSE AMEX Options	Core
All or None	ExecInst(18)=G	Order that will only fill if the entire order quantity can be matched.	NYSE AMEX Options	Core
Good Till Cancel	TimeInForce(59)=1(GTC) ClOrdID(11)=yyyymmdd and value	Order that will stay live until cancelled by the client. Clients must also specify a ClOrdID (Tag 11) with the date the order is submitted in yyyymmdd format at the beginning of the value. Any corporate action on the underlying security will result in an unsolicited cancel back to the client.	NYSE AMEX Options	Core
Wait Order	OrdType (40) = 2 ExecInst (18) = 6 ExtendedExecInst (9416)= W	A "WAIT" order is a limit options order that is held for one second before being processed for potential display/execution/routing per any other execution instructions or qualifiers as indicated by the order sending firm. Once released for	NYSE AMEX Options	- core

		processing, the WAIT order will behave according to the parameters indicated by the order sending firm.		
PNP+ Complex Order	OrdType (40) = 2

ExecInst (18) = M | PNP+ Complex orders are designed to provide the sender price improvement over the leg markets at the time of execution. Upon receipt, our matching engine will validate the price of a PNP+ Complex order against the leg markets and if the order is marketable against these leg markets or would post to the book at a price less than one MPV (minimum price variation) away from all of the leg markets, the order will price back one MPV from the derived (net price) BBO and post to the complex order book.
PNP+ Complex orders will track the screen markets to both better and worse prices, always maintaining a one MPV buffer.
• If leg markets improve so a resting PNP+ Complex order is marketable against the legs, the PNP+ Complex order will price back one MPV and repost.
• If the leg markets worsen, the PNP+ Complex order will repost at the more aggressive price, up/down to the net debit or credit price of the order, always remaining one MVP distance from the leg markets.
• If an incoming marketable contra side PNP+Complex order is received, it will immediately trade against the posted order, as long as the execution price is at least 1 MPV away from either side of the complex BBO. | -NYSE Amex Options | Core |
| Directed Order | OrdType (40) = 1 or 2

DeliverToCompID (128) = MMID of market maker | Firms that enter directed orders can specify the MMID of the market maker they are targeting with their directed order in the DeliverToCompID. Directed orders are designed to give preference to the directed market maker (based on value in tag 128) so long as that market maker is quoting at the NBBO at time of order receipt. If the directed market maker is not quoting at NBBO at time of order receipt, the directed order will process as a standard limit or market order. | NYSE AMEX Options | - core |

11   NYSE Amex Complex Orders

11.1   Introduction

Clients can send complex orders of up to 5 option legs to NYSE Amex Options for execution. These orders will be specified in one FIX message containing multiple legs.

The Complex Order is sent as a MsgType(35)=AB. ***Please note that if MsgType(35)=AC is sent***, *it will be rejected.* The "parent" section of the Complex Order will be identified with Side(54)=B(as defined) and contain NoLegs(555) to specify the number of legs in the order. The "parent" section will also contain Price(44) with the value equal to the net price of the spread and OrderQty(38) will contain the multiplier used to calculate the quantity on each leg. The qty for the leg will be calculated as LegRatioQty(623) X OrderQty(38) = the Leg quantity. Each individual leg of the Complex Order should begin with LegSymbol(600) and should also include LegCFICode(608), LegSecurityType(609), LegMaturityMonthYear(610), LegStrikePrice(612), LegSide(624), LegRatioQty(623), LegPositionEffect(564), and LegRefID(654).

Fills for Complex Orders will only take place when at least a partial of each leg can be satisfied. It is not possible to receive fills for only certain legs of a Complex Order and not others. Leg ratios will be preserved when partial executions occur. Clients will receive execution reports for each individual leg of a complex order for fills. Each fill messages will reference the ClOrdID(11) of the order in addition to the LegRefID(654) of the individual leg.

For complex orders, clients may specify option orders on one to 5 legs and orders for common stock on up to one leg. The total number of legs cannot exceed 5. There can only be one equity leg in a complex order and the common stock leg of the complex order will be treated differently. LegCFICode(608) will be populated with ES (Equity common shares) and the following tags are not required: LegCFICode(608), LegMaturityMonthYear(610), LegStrikePrice(612) and LegPositionEffect(564). Clients may also send LegSide(624)=5(sell short) for these legs.

11.2   NYSE Amex Complex Orders - OSI Symbology Testing

As of 6/15/2009, Explicit symbology testing will be available in our Arca Complex test environment which will require separate connectivity from the ordinary test platform. A new session can be requested at anytime from Connectivity@nyx.com.

For a complex order, you must enter 600, 608, 611 and 612 for each leg to identify the series in explicit format. If the number of shares the option series represents is not 100, you must add tag 614 to the message also.

For more information on the upcoming OCC OSI changes, please see the following links:

http://www.optionsclearing.com/initiatives/symbology

http://www.optionsclearing.com/initiatives/symbology/osi_consolidation_plan.pdf

11.3   General Information

1. All legs, within a complex order, can be priced in penny increments.
2. Complex orders will be represented on a Net Price basis expressed in up to 2 decimal places (for delta neutral orders).
3. Complex orders will be accepted only, no complex quotes.
4. No multi-issue baskets, restricted to one underlying for all option legs.
5. Up to 5 legs per order

6. Any Legal Ratio (of user-defined leg volumes) will be accepted.
7. Current electronic complex rules state that Legal Ratio cannot be greater than 1:3, 3:1.
8. Delta Neutral orders will be accepted. Delta should be entered in Tag 623 for the Equity Leg (leg ratio qty) as an integer value (no decimals).
   o For "delta-neutral" option with stock orders (user defined), the ratio is 8:1 options to stock, i.e. a 13 delta "floor".
9. Order types accepted are: Limit
   o For limit orders, the price will be expressed on net debit/credit basis for the sum of all legs.
10. Tag 18 (ExecInst) will not be supported. Any value put in this field will be ignored and will not affect the processing of the complex order.
11. Cancel/Replace will not be supported at this time. Clients will have to send a cancel request followed by a new order.
    o GTC is not accepted at this time for Complex.
    o AON/FOK is not accepted at this time for Complex.
12. TIF periods accepted are: Day (59=0), IOC (59=3).
13. Order-to-Order trading and order-to-screen (simple) market legs will be the execution mechanisms for complex orders.
14. All Complex order transactions must occur on or within the OX (derived) BBO markets.
    o Complex order transactions that occur on the NYSE Arca (derived) BBO markets will trade vs. the legs prior to trading vs any contra complex order interest resting in the complex order book.
15. Halting a Symbol
    o Any complex order containing at least one leg in an underlying security that halts will also halt trading.
16. The ClOrdID for complex orders must be limited to 25 characters.
17. Multi-legged (complex) orders are disseminated via "notification" to the ArcaBook Options Data Feed.
    o Notifications are changes to the Top of Complex Order Book (COB).
    o Failed execution attempt due to BBO violation results in rebroadcast of Top of Book.
    o Cancellation of complex order at top of book will result in rebroadcast of Top of Book message.
18. There will be a segregated ArcaBook feed for complex markets
    o Top of Book messages
    o New Instrument Messages
    o New Order Messages
19. Complex orders that interact with the leg markets will always be considered incoming orders.
    o Complex orders will always receive price improvement, if available, from the screen market legs, i.e. where the net debit/credit price on the complex is more aggressive than the simple market, trade at the simple market displayed net debit/credit price.
    o Complex orders trading vs. the screen market legs will always be considered "liquidity removing" and screen market legs considered "liquidity adding".

11.4 Complex Order Instruments

Complex order symbols will use the explicit data fields to identify the complex instrument. For each leg, the symbol field will be the OCC code. FAST symbols will be used for internal processing as well as for dissemination to Arca Book. FAST symbols will be sent to order sender on order ack via FIX.

Customer FIX Gateway

The NYSE Arca FIX Gateway will route complex orders (up to 5 option legs) to the electronic platform instead of EOC.

7. Incoming order messages will be received via FIX connections using standard FIX format.

8. For complex orders including an equity leg, prices will be expressed on a per share basis.

For Example:

   a. Buy 100 shares at 81.00

b. Sell 1 option at 1.00
c. Net Price: 80.00 debit

d. To submit the spread the client should send and order with the overall QTY as tag 38=1, the Price as tag 44=80.00 - an $80 debit 1x. Note: the actual dollar amount of the debit is 8,000.00, but for spread Pricing/submission to NYSE Arca the $80.00 notation is used.
e. To trade the spread more times, the same Price and ratios are used, but the QTY in tag 38 is changed. To do the spread 2x, clients should send 38=2, while the Ratios and Price would be the same.

NOTE: For reference sake, the Price in tag 44 is the same as before (80.00), but the actual dollar amount of the debit would double to $16,000.00.

9. NYSE Arca will disseminate FAST symbols and a related key to active complex strategies, but will not allow complex orders received by NYSE Arca using our FAST symbols.
   a. Clients can not use FAST symbols for new incoming orders, because each leg must include open/close close indicators.
      i. LegPositionEffect values should be O and C for open and close
10. The acknowledgement on the complex instrument (head ack) will return the FAST instrument.

11. Reporting leg fills via FIX
   a. For a 3-leg instrument, NYSE Arca will send three execution reports, one for each leg fill. Each has the LegRefID from its corresponding leg but aside from that it looks the same as other fills on simple orders and the fills on legs will be sent with the value of 2 in the 442 (MultiLegReportingType)
      i. One ClOrdID will tie all fills together.
   b. For orders including an equity leg, fill reports for both options and equity legs sent to the client will come from the NYSE Arca Options platform, upon its receipt of a consolidated FillReport from the equities platform.
      i. The leg report to the clients will include LegRefID.
      ii. One ClOrdID will tie all legs together.

12. Ratio on FIX
   a. If a client wants to trade a buywrite selling 5 calls and buying 500 shares of stock, they would send 5 buywrites on a 1:100 ratio.
      i. It will be the client's responsibility to indicate if the option to stock ratio is something other than 1:100.
      ii. Example: if there was a 3/2 stock split, the client would be required to send 5 buywrites on a 1:150 ratio.

   b. If a client wants to buy 5 of one option leg and sell 10 of another option leg, they must send:
      i. OrderQty = 5
         LegRatioQty = 1 (first leg)
         LegRatioQty = 2 (second leg)

- Reporting Messaging for Complex Orders via FIX
   7. Ack
      a. Report per leg

   8. Reject
      a. 1 Parent message

   9. Pending Cxl –
      a. 1 Parent message

10. Canceled
      a. Report per leg

11. Fill
      a. Report per leg

12. Cancel reject
      a. 1 Parent message

Canceling a Complex Order:
Customers must specify one of the option leg instruments or the FAST instrument id of the complex order in the cancel message along with the value of MLEG in the 167(SecurityType).

11.5 Core Trading

- Incoming complex orders will first check for execution opportunities vs. contra complex orders within the complex order book.
- Executable Complex Orders – No auction or delay in processing.
- Ratio of complex order legs must be preserved.
- Incoming complex orders that trade vs. resting complex orders in the book will receive price improvement.
- Incoming complex orders that trade vs. screen markets will receive price improvement.
- Any screen market legs that trade vs. a complex order will trade in strict price/time.
  - No LMM % guarantee.
  - No customer priority.

11.6 FIX Order and Trade Dissemination

Execution Report
Complex order executions are reported as individual FIX Execution Reports, per leg. Firms receive the Standard Execution Report from NYSE Arca (OX) if they use the FIX Order Entry connection.
An Order Entry connection receives orders from a firm's order routing system. The orders are automatically executed and the reports are returned to the firm.
The Execution Report message:
- Confirms the receipt or rejection of an order
- Confirms the changes to an existing order
- Provides order status information
- Provides fill information on working orders
- Provides information on trade busts and adjustments
  - Trade busts or adjustments are performed independently of the order.
  - Busting a trade does not recreate an order or add the quantity to an open order.
  - Trades are adjusted by sending a bust, followed by a new trade.
- Adjusting a trade does **not** affect the open quantity of an order.

Order Cancel Reject
The Order Cancel Reject message is used when an Order Cancel Request or Order Cancel/Replace Request cannot be honored.
Message requests that change the price or quantity of an order are only performed when an outstanding quantity exists. Filled orders cannot be changed.

Reasons for rejecting a Cancel Order Request:
- Order was not found.
- Order does not exist because it was already filled.
- Cancel can't be routed to the target system for a technical reason.

Order Reject

The Order Reject message is used when an order does not contain valid data and cannot be processed or when an order can't be routed to the target system for a technical reason.

Cancel/Replace

Because order senders lose all priority with any modifications, participants will send cancel and replace separately. Cancel/replace messages are not supported at this time.

11.7   Trade Reporting

Trade Reporting to OPRA

Complex trades will be reported as individual trades and marked as spread transactions.

- OPRA will not support dissemination of Complex order BBO markets
- Trades in complex products must be disseminated to OPRA as trade reports in their leg components marked as "spread" trades

NYSE Amex Solutions to Data Mitigation Issue

For dark series (due to data mitigation) NYSE Amex will light up the single market legs when NYSE Arca receives a complex order that includes the individual components.

11.8   Post Trade Processing

Drop Copies

Drop copies of individual leg trade reports for complex orders will be supported. Drop copies for option legs will come from the NYSE Amex Options platform (OX). You can receive the drop copies via FIX though your current Drop Copy FIX session, or you may request a new one. For your Drop Copy session request, please e-mail Connectivity@nyx.com or call our support line at (888) 689-7739 Option 1.

Post Trade Adjustments

Post trade allocation of complex orders is supported. Leg ratios must be preserved.

Trade Reporting to OCC

Individual legs of complex orders will be reported to OCC.

IPOPs

All clearing of complex order trades will occur via their individual leg components.

ArcaVision User Interfaces

All complex trade data will be reported in ArcaVision as both the complete strategy as identified by the Arca "FAST" symbol, trade quantity, and net trade price; and as the individual leg trade reports (each leg must include the FAST symbol identification).

11.9 FIX Application Protocol for Amex Complex Orders

This section describes the FIX Application messages used in sending and receiving messages. We only support FIX 4.0, 4.1 and 4.2 at the session level. For Complex Orders, we retrofitted the AB Message type that is defined in FIX 4.3 to be used in FIX 4.0, 4.1 and 4.2 rather than invent a new message type.

Complex Order – Multi-Leg

In addition to requirements for the standard FIX message header, the following fields are used by the application layer for a New Order Single (Multi Leg):

Tag	Field	Description	Req.	Values
	Standard Header		*Y*	*MsgType = AB*
1	Account	Account identifier	N	Optional field.
11	ClOrdID	Unique identifier of the order, which is assigned by the client.	Y	This value has a maximum of 25 characters. **Note**: Firms must specify a ClOrdID value for the entire multi-leg order in tag 11.
18	ExecInst	Used to specify values for different order types	N	M = PNP Complex Plus
38	OrderQty	Quantity ordered	Y	Number of times the spread is available.
40	OrdType	Type of order	Y	2 = Limit
44	Price	The net price of the spread.	N	Debit (Explicit negative value) is Willing To Pay -0.00 Credit (Implicit positive value) is Wants Cash Back 0.00
50	SenderSubID	Assigned value used to identify specific message originator	N	Assigned value that identifies the message originator.
54	Side	Side of order	Y	B = "As Defined" (for use with MultiLeg instruments)
59	TimeInForce	Specifies how long the order remains in effect. Absence of this field is interpreted as DAY.	N	The valid values are: 0 – Day 1 – GTC (Good Till Cancel) 3 – IOC (Immediate or Cancel
167	Security Type	Indicates type of security.	Y	**MLEG – Multi-Leg**
204	CustomerOrFirm	Used for options when delivering the order to an execution system to specify if the order is for a customer, firm, or Market Maker placing the order itself.	Y	0 = Customer 1 = Firm 2 = Broker/Dealer 3 = MarketMaker
207	SecurityExchange	MIC code of the exchange	Y	XASE (NYSE AMEX)
440	ClearingAccount	Used for CMTA Information	N	≤ 4 characters CMTA Clearing Firm Value

Tag	Field	Description	Req.	Values
555	NoLegs	Number of InstrumentLeg repeating group instances.	Y	2, 3, 4, and 5 depending on the number of legs in the complex order.
	Component block <InstrumentLeg>		Y	
564	LegPositionEffect	PositionEffect for leg of a multileg See PositionEffect (77) field for description	Y	The valid values are: O – Open C – Close
600	LegSymbol	Multileg instrument's individual security's Symbol.	Y	For option leg, this is the OCC trading symbol.
608	LegCFICode	Individual security CFI code for the multi-leg instrument.	Y	OC – Option-Call [OPT] OP – Option - Put [OPT]
610	LegMaturityMonthYear	Multileg instrument's individual security's MaturityMonthYear.	Y	Expiration month and year in the YYYYMM format.
611	LegMaturityDate	Multileg instrument's individual security's Day.	N*	Expiration Date in the YYYMMDD format. Once the exchange moves to Explicit, this tag will be required.
612	LegStrikePrice	Multileg instrument's individual security's StrikePrice.	Y	Strike price for an option. The valid values are: 0 – 99999999.9999 (the number of decimal places might vary and is limited to 2, which means rounding down on the 3rd decimal place).
614	LegContractMultiplier	Multileg instrument's individual security's ContractMultiplier.	Y(C)	Numerical Value (Required only on options legs if number of shares in options series is not equal to 100)
623	LegRatioQty	The ratio of quantity for this individual leg relative to the entire multi-leg security.	Y	Integer value (no decimals)
624	LegSide	The side of this individual leg (multileg security).	Y	The valid values are: 1 – Buy 2 – Sell
654	LegRefID	Unique indicator for a specific leg.	Y	Unique customer assigned value for each leg.
</InstrumentLeg>				
	Standard Trailer		*Y*	

FIX Cancel Request

In addition to requirements for the standard FIX message header, the following fields are used by the application layer for a Cancel Request:

Tag	Field	Description	Req.	Values
	Standard Header		*Y*	*MsgType = F*
11	ClOrdID	Unique identifier of the cancel request, which is assigned by institution.	Y	Unique identifier of the cancel request, which is assigned by the institution. Can be the Parent ClOrdID or ClOrdID of any leg.
38	OrderQty		Y	Quantity from Order Message
41	OrigClOrdID	Unique identifier of the cancel request, which is assigned by institution.	Y	ClOrdID of the order that needs to be canceled. This is **not** the initial order of the day.
54	Side	Must match side of original order	Y	Must match side of original order. (B is the only valid value)
55	Symbol	This value must match the original order.	Y	Valid OCC Root or Explicit Symbol or FAST Instrument.
167	SecurityType	Must match side of original order.	Y	**MLEG – Multi-leg (If the cancel Request is on the FAST Symbol)** **OPT – Option (If the cancel request is on a leg)**
200	MaturityMonth	This must match the value of the original order.	Y	YYYYMM
201	PutOrCall	This must match the value of the original order.	Y	0=Put, 1=Call
202	StrikePrice	This must match the value of the original order.	Y	0 – 99999999.9999
205	MaturityDay	This must match the value on the original order.	Y	DD
207	SecurityExchange	This must match the value on the original order.	Y	XASE (NYSE AMEX)
	Standard Trailer		*Y*	

Please Note: A Cancel on any leg of a complex order will result in all the legs of the order being canceled.

FIX Execution Report

In addition to requirements for the standard FIX message header, the following fields are returned by the application layer for an Execution Report Message:

Tag	Field	Description	Req.	Values
	Standard Header		**Y**	**MsgType = 8**
11	ClOrdID	Unique identifier of the order.	Y	Unique identifier of the order. This value uses the ID from the original order.
14	CumQty	Total number of filled options.	Y	Valid values are 0 – 1000000000 6 AvgPx Y Average price that is calculated based on the fills of the order. Valid values are 0 – 99999999.9999 The number of decimal places can vary and is not limited to four.
17	ExecID	Must be unique to the matching engine the execution originates from.	Y	Numerical up to 20 characters
19	ExecRefID	Reference identifier used with Trade Cancel and Trade Correct execution types.	N	This field contains the ExecID value.
20	ExecTransType	Identifies the trade type.	Y	The valid values are: 0 – New 1 – Cancel 2 – Correct
31	LastPx	Price of the last fill.	Y	The valid values are: 0 – 99999999.9999 (the number of decimal places might vary and is not limited to four).
32	LastShares	Quantity of bought/sold contracts on the last fill.	Y	The valid values are: 0 – 1000000000
37	OrderID		Y	Numerical up to 20 characters
38	OrderQty		Y	Returned from Order
39	OrdStatus	Current status of the order.	Y	The valid values are: 0 – New 1 – Partially filled 2 – Filled 4 – Canceled 6 – Pending Cancel 8 – Rejected E – Pending Cxl/ Replace(for FIX v4.2)
40	OrdType		Y	Returned from Order
44	Price		N	Returned from Order
54	Side		Y	Returned from Order
55	Symbol		Y	OCC option symbol for a series that is specified on the order.
59	TimeInForce		N	Returned from Order
60	TransactTime		N	Date and time of execution/order creation (expressed in GMT). The

Tag	Field	Description	Req.	Values
				format is: *YYYYMMDD* and *HHMMSS.*
77	OpenClose		Y	Returned from Order
150	ExecType	Describes the order execution.	Y	The valid values are: 0 – New 1 – Partially filled 2 – Filled 4 – Canceled 6 – Pending Cancel 8 – Rejected E – Pending Cancel Replace(for FIX v4.2)
151	LeavesQty	Number of options that are open for further execution.	Y	Valid values are 0 – 1000000000 If OrdStatus is Canceled or Rejected (no longer active), then LeavesQty = 0. Otherwise, LeavesQty = OrderQty – CumQty
200	MaturityMonthYear	Month and Year of the maturity (used for standardized futures and options).	Y	Expiration month and year in the *yyyymm* format, as specified on the order.
201	PutOrCall	Indicates whether an Option is for a put or call.	Y	Returned from Order
202	StrikePrice	Strike Price for an Option.	Y	As specified on the order. Valid values are: 0 – 99999999.9999 (the number of decimal places might vary and is not limited to four).
204	CustomerOrFirm		Y	Returned from Order
207	SecurityExchange	MIC Code of Exchange	Y	Returned from Order
442	MultilegReportingType	Used to indicate what an Execution Report represents (e.g. used with multi-leg securities, such as option strategies, spreads, etc.).	Y	Indicates the type of Execution Report. For example, option strategy, spreads and so on. The valid values are: 2 – Individual leg of a multi-leg security 3 – Multi-leg security
654	LegRefID	Unique indicator for a specific leg.	Y	As specified on the order.
	Standard Trailer		*Y*	

FIX Cancel Reject Message

In addition to requirements for the standard FIX message header, the following fields returned by the application layer for a Cancel Reject Message:

Tag	Field	Description	Req.	Values
	Standard Header		*Y*	*MsgType = 9*
11	ClOrdID	Unique identifier of the cancel request, which is assigned by institution.	Y	Unique identifier of the cancel request, which is assigned by institution.
39	OrdStatus	This value is applied after the Cancel Reject function is completed.	Y	Valid values: 8 = Rejected
41	OrigCIOrdID	Unique identifier of the cancel request, which is assigned by institution.	Y	ClOrdID of the order that cannot be canceled. This value does **not** apply to the initial order of the day.
58	Text		Y	Reason for rejecting the Cancel Order Request.
102	CxlRejReason	Code to identify reason for cancel rejection.	N	Valid values: 0 = Too late to cancel 1 = Unknown order
434	CxlRejResponseTo	Identifies the type of request that a Cancel Reject is in response to.	Y	The valid values are: 1 – Order Cancel Request
	Standard Trailer		*Y*	

11.10 Accepted Order Types for Complex Orders

Order Type	Fix tags	Description	Exchange Platform	Available Sessions
Limit Order	OrdType (40) = 2 (limit)	An order to buy or sell at a specified price or better. A marketable limit order is a limit order to buy/sell at or above/below the consolidated best offer/bid for the security For limit orders, the price will be expressed on net debit/credit basis for the sum of all legs.	NYSE Amex Complex Orders	- Core
PNP+ Complex Order	OrdType (40) = 2 ExecInst (18) = M	PNP+ Complex orders are designed to provide the sender price improvement over the leg markets at the time of execution. Upon receipt, our matching engine will validate the price of a PNP+ Complex order against the leg markets and if the order is marketable against these leg markets or would post to the book at a price less than one MPV (minimum price variation) away	NYSE Amex Complex Orders	-core

| | | from all of the leg markets, the order will price back one MPV from the derived (net price) BBO and post to the complex order book.

PNP+ Complex orders will track the screen markets to both better and worse prices, always maintaining a one MPV buffer.
• If leg markets improve so a resting PNP+ Complex order is marketable against the legs, the PNP+ Complex order will price back one MPV and repost.
• If the leg markets worsen, the PNP+ Complex order will repost at the more aggressive price, up/down to the net debit or credit price of the order, always remaining one MVP distance from the leg markets.
• If an incoming marketable contra side PNP+Complex order is received, it will immediately trade against the posted order, as long as the execution price is at least 1 MPV away from either side of the complex BBO. | | |
| | | | | |

12 NYSE MatchPoint

12.1 MatchPoint Overview

MatchPoint is an electronic equity trading facility that matches aggregated orders at predetermined fixed times, at prices that are derived from the primary market for securities (NYSE, AMEX, NYSE Arca and NASDAQ). MatchPoint is designed to lower transaction costs by providing a passive, point-in-time trading environment where portfolio-based liquidity and block-sized orderflow can interact on an anonymous and non-displayed basis. Participants are also provided full anonymity throughout the order entry and trade execution process.

MatchPoint provides its participants a greater ability to execute single, block and portfolio (i.e., basket, list, etc.) orders efficiently and reduce the trading risks and costs associated with market volatility and information leakage. MatchPoint customers who enter single orders, block orders and portfolio orders will reap the benefits of this centralized, neutral matching environment. Additionally, customers that rely on index-based or model-driven trading and investment strategies will find MatchPoint to be a very effective trading tool.

Accessing NYSE MatchPoint is fast and easy. Users can submit single orders or upload multiple portfolios of orders through FIX or the NYSE MatchPoint web-based front end. Orders are transmitted from member firm desks, member firm Direct Market Access (DMA) and Execution Management System (EMS) platforms, member firm algorithm services or member firm sponsored linkages. Sponsored Participants of NYSE MatchPoint that have direct access can connect through the same linkages

MatchPoint now has intraday matching sessions at 9:45 a.m. ET and then every hour on the hour prior to the close. Matchpoint also has a after hours match that runs at 4:45pm EST.

Please access the NYSE MatchPoint website for updates and more detailed facility information. (www.nyse.com.MatchPoint)

12.2 MatchPoint Order Entry

Please refer to the MatchPoint FIX Spec for MatchPoint Order Entry. It can be found here:

http://www.nyse.com/pdfs/NYSEMatchPointFIX%20Specificationv1_0.pdf

13 LRS - Liffe Routing System

13.1 Introduction

The NYSE Arca FIX Customer Gateway can be used to route orders to Liffe, the European derivatives subsidiary of NYSE Euronext. Any NYSE Arca Options Exchange customer who is also a Liffe member may use their NYSE Arca FIX connections to access Liffe.

The customer may utilize their current OTPID, but needs to take an additional step to provide NYSE Arca with their Liffe ITM (Individual Trader Mnemonic) key. Please contact crs@nyx.com for additional details on configuring routing to Liffe.

More information about the Liffe Membership process can also be found on the NYSE Euronext website (http://www.euronext.com/editorial/wide/editorial-4113-EN.html).

13.2 Routing

Order Flow through the Liffe Routing System
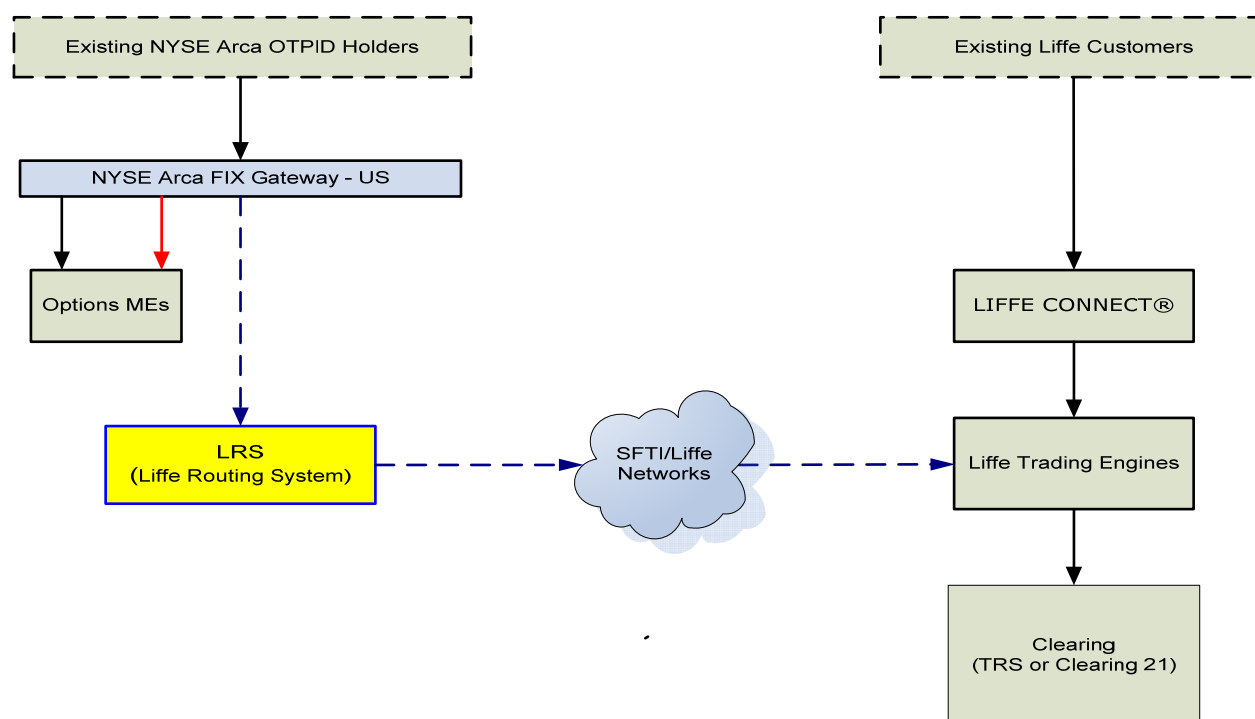
Please contact ctsg@aems.net for questions regarding Liffe development and test environments.
To indicate that an order is to be routed to Liffe, you must send the standard MIC (Market Identifier Code) for the target exchange in SecurityExchange (Tag 207) which will be the value XLIF.

13.3 Symbology

All symbology for Liffe is based on AMR (Automated Market Reference). AMRs are used to uniquely identify each listed future or option instrument. When sending orders destined for Liffe, you must send the AMR symbol (15 character Symbol ID) in SecurityID (tag 48) and a value of "8" (meaning "Exchange Symbol") in SecurityIDSource (tag 22). Any other value for SecurityIDSource will be rejected when routing to Liffe.

The AMR is subject to change by Liffe with minimal notice, and application developers are strongly advised not to use this field as anything but a unique index to an outright or strategy market.

For further information about AMRs, please contact CTSG at ctsg@aems.net or Technology Partnerships at technologypartnerships@liffe.com.

LIFFE CONNECT® supports different types of strategies:
- Strategies combining Futures contracts
- Strategies combining Options contracts
- 'Delta-neutral' strategy trades, combining options contracts hedged against their underlying instrument, resulting in a delta neutral trade.

Please note that strategies are always expressed from the 'Buy' perspective.

The Liffe Routing System will support complex orders up to 5 legs.

13.4 Trading Hours

The Liffe Routing System (LRS) will be available for order routing during the following hours:

7:00am – 9:00pm UK Time

Certain contracts may close for trading prior to 9:00pm UK Time. For full details of the trading hours per contract, please see the individual contract specifications listed at http://www.euronext.com/derivatives.

Choose the relevant contract under the "Products" sub-menu on the left.

13.5 FIX Application Protocol Information for Liffe

The information provided below indicates the FIX tags that need to be populated to route an order into Liffe.

Products listed on Liffe markets are cleared by different clearing organizations:
- Liffe UK products are cleared by LCH Clearnet, in the TRS (Trade Registration System) system;
- Liffe Continental products (Paris, Amsterdam, Brussels, and Lisbon) are cleared by Clearnet SA, in the Clearing 21 (C21) system.

As a consequence, clearing information listed below from tag #204 to tag #9596, varies between clearing organizations and markets. The table below indicates which mandatory fields are for TRS and Clearing 21, as well as the authorized values.

For further information regarding Liffe specific fields, please contact ctsg@aems.net.

New Order – Single (Liffe)

In addition to requirements for the standard FIX message header, the following fields are used by the application layer for a Liffe New Order – Single message.

Tag	Field	Description	Req.	Values
	Standard Header		Y	*MsgType = D*
1	Account	Maps to Customer Reference field	N	Any value up to 14 characters
11	ClOrdID	This field contains the ID assigned to the order by the firm. This value must be <= 30 characters. It is critical that this ID is unique for all orders sent today. The FIX 4.0 protocol does not specify what to do if this ID is duplicated. We will ignore the order in FIX 4.0 if duplication occurs. In FIX 4.1 and 4.2, we send an Execution Report with ExecType, OrdStatus = Rejected, and OrdRejReason = Duplicate Order (6).	Y	Customer Defined <=30 characters
22	SecurityIDSource	Code for the source of the ID being used for the security, in this case, the AMR symbology for Liffe	Y	Must be "8", meaning "Exchange Symbol"
38	OrderQty	Order volume. For Complex orders, the leg volumes will be automatically determined by each individual leg ratio	Y	1-999,999
40	OrdType	Type of order valid in Liffe markets	Y	1=Market 2=Limit
44	Price	Indicates order price	Y	.001-99999.999
48	SecurityID	AMR code of the security	Y	Valid AMR code
54	Side	Side of Order	Y	1=Buy 2=Sell
57	TargetSubID	Requirement on all orders sent to the NYSE Arca FIX Gateway	Y	ARCA
59	TimeInForce	If a value is not present in this field, the default is Day.	N	0 = Day 1 = GTC (Good Until Cancelled) 2 = At the Opening 3 = IOC (Immediate or Cancel) 4 = FOK (Fill Or Kill)
77	OpenClose	Indicates Opening or Closing quote	Y	O=Open C=Close
110	MinQty	Only required for a Minimum Volume order	N	Customer defined quantity
204	CustomerOrFirm	Maps to AccountCode field	Y(C)	0 = Customer 1 = Firm 3 = Market maker 4 = Allocate 5 = Non Segregated 6 = Segregated 7 = Unallocated (Required for C21, Not Required for TRS)

207	SecurityExchange	MIC code of the exchange	Y	XLIF
439	ClearingFirm	Maps to Member Allocation field	N	Member mnemonic to indicate a give up to another member.
440	ClearingAccount	Maps to Trader Allocation field	N	Trader mnemonic to indicate a give up to another member.
526	SecondaryClOrdID	Maps to Trader Card Reference field	N	Any value up to 10 characters. *Field will be received as 16 characters in clearing, Last 6 characters are reserved for internal purposes.*
577	ClearingInstruction	Maps to PostingCode field	N	8 – Manual Posting 9 – Automatic Posting 10 – Automatic Give Up 11 – Automatic and Account Authorization 12 - Manual and Account Authorization
578	TradeInputSource	Customer-assigned identifier. Only required for members registered as using a Price Injection Model	N	Any value up to 3 characters
9596	Client Free Field 1	Maps to User Specified field	Y(C)	Any value up to 14 characters (Required for Amsterdam, Optional for all other markets)
	Standard Trailer		***Y***	

Execution Report (Liffe)

In addition to the standard FIX message header, the following fields are returned on a Liffe Execution Report message.

Tag	Field	Description	Req.	Values
	Standard Header		***Y***	***MsgType = 8***
1	Account	Maps to Customer Reference field	N	Returned from order
6	AvgPx	Indicates Average Price of fills on order	Y	.0001-99999999.9999 (If 0 value is returned, this tag is not be tracked by LRS and is N/A)
11	ClOrdID	This field contains the ID assigned to the change by your firm. This value must be <= 49 characters. It is critical that this ID is unique for all orders and changes sent today, as well as any orders or changes that may be active from previous days. If this value is duplicated we will send a Cancel Reject.	Y	User specified up to 30 characters
14	CumQty	Indicates total quantity of fills on open order	Y	1-999,999 (If 0 value is returned, this tag is not be tracked by LRS and is N/A)
17	ExecID	Execution ID assigned by NYSE Arca	Y	Numerical up to 9 characters
20	ExecTransType		Y	0=New
22	SecurityIDSource	Code for the source of the ID being used for the security, in this case, the AMR symbology for Liffe	Y	Will be "8", meaning "Exchange Symbol"

31	LastPx	Indicates price of fill	Y	.0001-99999999.9999
32	LastShares	Indicates quantity of fill	Y	1-999,999
37	OrderID	OrderID assigned by NYSE Arca	Y	Numerical up to 9 characters
38	OrderQty	Order volume. For Complex orders, the leg volumes will be automatically determined by each individual leg ratio	Y	Returned from order
39	OrdStatus	Indicates status or message	Y	0=New 1=Partially Filled 2=Filled 3=Done For Day 4=Cancelled 6=Pending Cancel 8=Rejected E= Pending Cancel (4.2 only)
40	OrdType	Type of order valid in Liffe markets	Y	Returned from order
44	Price	Indicates order price	Y	Returned from order
48	SecurityID	AMR code of the security	Y	AMR code
52	SendingTime	Time sent by ARCA	Y	Time specified in UTC time. YYYYMMDD-HH-MM-SS
54	Side		Y	Returned from order
58	Text	Additional description of message	Y	Used to relay description of message. Can be changed at any time by the exchange. Please do not code to the values returned in this field.
59	TimeInForce	If a value is not present in this field, the default is Day.	N	Returned from order
60	TransactTime	Indicates time of transaction on ack or fill	Y	Time specified in UTC time. YYYYMMDD-HH-MM-SS
77	OpenClose		Y	Returned from order
110	MinQty	Only required for a Minimum Volume order	N	Returned from order
150	ExecType	Indicates status of order	Y	0=New 1=Partially Filled 2=Filled 3=Done For Day 4=Cancelled 6=Pending Cancel 8=Rejected E= Pending Cancel (4.2 only)
151	LeavesQty	Indicates open shares remaining on order	Y	1-999,999
204	CustomerOrFirm	Maps to AccountCode field	N	Returned from order
207	SecurityExchange	MIC code of the exchange	Y	XLIF
526	SecondaryClOrdID	Maps to Trader Card Reference field	N	Returned from order
198	SecondaryOrderID	Represents the ID assigned by Liffe. In contrast, OrderID is assigned by the NYSE Arca Liffe routing system	Y	ID assigned by Liffe
439	ClearingFirm	Maps to Member Allocation field	N	Returned from order

Tag	Field	Description	Req.	Values
440	ClearingAccount	Maps to Trader Allocation field	N	Returned from order
442	MultiLegReportingType	*In the cases value 2 is returned, Tags 151, 14, and 6 will not be tracked by the system and zeros will be returned in these fields.	N	*2 - Individual leg of a multi-leg security 3 - Multi-leg security
526	SecondaryClOrdID	Maps to Trader Card Reference field	N	Returned from order
577	ClearingInstruction	Maps to PostingCode	N	Returned from order
578	TradeInputSource	Customer-assigned identifier. Only required for members registered as using a Price Injection Model	N	Returned from order
9596	Client Free Field 1	Maps to User Specified field	Y(C)	Any value up to 14 characters (Required for Amsterdam, Optional for all other markets)
	Standard Trailer		*Y*	

Order Cancel Request (Liffe)

In addition to requirements for the standard FIX message header, the following fields are used by the application layer for a Liffe Order Cancel Request.

Tag	Field	Description	Req.	Values
	Standard Header		*Y*	*MsgType = F*
1	Account	Maps to Customer Reference field	N	Any value up to 14 characters
11	ClOrdID	This field contains the ID assigned to the change by your firm. This value must be <= 49 characters. It is critical that this ID is unique for all orders and changes sent today, as well as any orders or changes that may be active from previous days. If this value is duplicated we will send a Cancel Reject.	Y	User specified up to 30 characters
22	SecurityIDSource	Code for the source of the ID being used for the security, in this case, the AMR symbology for Liffe	Y	Must be "8", meaning "Exchange Symbol"
37	OrderID	OrderID assigned by ARCA	N	Value from Execution Report
38	OrderQty	Order volume. For Complex orders, the leg volumes will be automatically determined by each individual leg ratio	Y	1-999,999
40	OrdType	Type of order valid in Liffe markets	Y	1=Market 2=Limit
41	OrigClOrdID	This value must match the ClOrdID of the order cancelled.	Y	Tag 11 value from original New Order Single
48	SecurityID	AMR code of the security	Y	Valid AMR code
54	Side	Side of order being cancelled	Y	1=Buy 2=Sell

Tag	Field	Description	Req.	Values
57	TargetSubID	Requirement on all orders sent to the NYSE Arca FIX Gateway	Y	ARCA
207	SecurityExchange	MIC code of the exchange	Y	XLIF
	Standard Trailer		*Y*	

Order Cancel Reject (Liffe)

In addition to requirements for the standard FIX message header, the following fields are returned by the application layer on a Liffe Order Cancel Reject Message.

Tag	Field	Description	Req.	Values
	Standard Header		*Y*	*MsgType = 9*
11	ClOrdID	Unique identifier of the cancel request, which is assigned by institution.	Y	Unique identifier of the cancel request, which is assigned by institution.
39	OrdStatus	This value is applied after the Cancel Reject function is completed.	Y	Valid values: 8 = Rejected
41	OrigCIOrdID	Unique identifier of the cancel request, which is assigned by institution.	Y	ClOrdID of the order that cannot be canceled. This value does **not** apply to the initial order of the day.
58	Text		Y	Reason for rejecting the Cancel Order Request.
102	CxlRejReason	Code to identify reason for cancel rejection.	N	Valid values: 0 = Too late to cancel 1 = Unknown order
434	CxlRejResponseTo	Identifies the type of request that a Cancel Reject is in response to.	Y	The valid values are: 1 – Order Cancel Request
	Standard Trailer		*Y*	

13.6 Account Codes and Posting Codes

When submitting orders to LIFFE CONNECT® via the NYSE Liffe Routing System, there can be several valid account codes depending on which market you are placing your order into.

Trades on London exchanges are cleared through the Trade Registration System (TRS), for which the following account codes are valid: 1- House account, 3- Market Maker Account, 4- Allocate (to another member), 5- Non Segregated account, 6- Segregated account, 7- Unallocated. If no account code is specified a 7 (Unallocated) will be populated in this field by the trading host.

Trades on all other European exchanges are cleared through Clearing 21, for which the following account codes are valid, 0- Customer account, 1- House account, 3- Market Maker account. For Clearing 21 this field is mandatory, unlike TRS.

When giving up trades to another member, two different conventions exist.

- London (TRS cleared) trades need to be assigned an account code 'A' and the appropriate ITM of the recipient trader placed in the trader allocation field (member mnemonic is optional).

- Trades given up on the European exchanges (cleared on Clearing 21), must be given the account code 'C'. They must make use of the 'Give Up' Posting Code option, and the appropriate member mnemonic or trader

ITM in the member/trader allocation field. For 'Give Up' trades on Amsterdam markets the customer reference field must also be populated.

Account Codes

Tag	London (TRS)	Continental Exchanges (Clearing 21)
Account Code (Tag 204)	1 = Firm 3 = Market maker 4 = Allocate 5 = Non Segregated 6 = Segregated 7 = Unallocated	0 = Customer 1 = Firm 3 = Market maker
For Give Up Trades		
Tag	London (TRS)	Continental Exchanges (Clearing 21)
Account Code (Tag 204)	4 (Allocate)	0 (Customer)
Posting Code (Tag 577)	Not Applicable	10 (Give Up)
Trader Allocation (Tag 440)	Mandatory	Optional if Member populated
Member Allocation (Tag 439)	Optional	Optional if Trader populated
Customer Reference (Tag 1)		Only mandatory for Amsterdam.

Posting Codes (European Exchanges Only)

8 (Manual Posting)	User intervention in Clearing 21 required to post to required position account.
9 (Automatic Posting)	Clearing 21 position account must be populated in 'User Specified Field'.
10 (Give Up)	Trader or Member Allocation must be populated with Recipient ITM/mnemonic.
11 (Automatic Posting plus Account Authorization)	Requires Trader or Member Allocation fields to be populated with Recipient ITM and Clearing 21 position account populated in 'User Specified Field'. (Amsterdam Only)
12 (Manual Posting plus Account Authorization)	Requires Trader or Member Allocation fields to be populated with Recipient ITM and Clearing 21 position account populated in 'User Specified Field'. (Amsterdam Only)

13.7 Additional Information for Liffe Routing System

The following features will be available for orders routed to the Liffe Routing System:

Auto Cancel On Disconnect

A FIX session can be configured to automatically cancel all live/working orders when your firm disconnects. A bulk cancel message will be sent to the Liffe Routing System (LRS) in an attempt to cancel the orders for the FIX Session that disconnected.

Please note that this feature does not guarantee that all outstanding orders will be successfully cancelled. It is possible that trades may happen near the time your firm disconnects, and such trades will not be reported to you.

This feature is intended to help your firm in emergency situations. **Firms must not rely upon this automatic cancellation as a normal business practice or to prevent liability of execution. This feature is also not a substitute for contacting the applicable trade desks to verify that all orders are indeed cancelled and that the firm has received all trades.**

Please note that the following will not be available on orders routed to the Liffe Routing System:

- Drop copies will not be available for trades done via the Liffe Routing System.

13.8 Order Types Available on the Liffe Routing System

Order Type	Fix Tags	Description	Exchange Platform	Available Sessions
Market order	OrdType (40)=1 (market)	An order to buy or sell that is to be executed at the best price available in the market when the order is received, until all volume at that price has been traded. Any remaining portion of the order then executes at the best price, and so on, until all the order volume has been filled. Any remaining volume is automatically cancelled.	-Liffe	- core
Limit order	OrdType (40) = 2 (limit)	An order to buy or sell at a specified price or better. A marketable limit order is a limit order to buy/sell at or above/below the consolidated best offer/bid for the security. Standard Day Limit orders are removed from the order book when the trader logs out of the system.	-Liffe	- core
Market Auction Only	OrdType (40) = 1 (market) TimeInForce (59) = 2	A Market order that will participate in the Liffe Opening Auction. Market on Open Orders (MOOs) will trade with each other during Market Open. Where a MOO order has not fully traded, the residual volume will be converted to a Limit order. In an opening price cannot be calculated because there has been no activity within the market, the MOO will be cancelled.	-Liffe	- core
Complete Volume	OrdType (40) = 2 (Limit) TimeInForce (59) = 4 (FOK)	Complete Volume (CV) orders are similar to Fill or Kill. CV orders will only be executed if there is sufficient volume available at the stated price or better for them to execute fully. Otherwise, the entire order will be cancelled.	-Liffe	- core
Good Till Cancel	TimeInForce(59)=1(GTC) ClOrdID(11)=yyyymmdd and value	Order that will stay live until cancelled by the client or until the contract expires. Clients must also specify a ClOrdID(11) with the date the order is submitted in yyyymmdd format at the beginning of the value.	-Liffe	- core
IOC (Immediate or Cancel)	OrdType (40) = 2 (Limit) TimeInForce (59) = 3	A limit order that is to be executed in whole or in part as soon as such order is received. The portion not so executed is to be treated as cancelled.	-Liffe	- core
Minimum Volume	OrdType (40) = 2 (Limit) MinQty (110) = (Customer Defined Quantity)	"Minimum Volume" orders cause the whole order to be cancelled if the minimum volume cannot be executed immediately. Any residual volume from an incomplete MV order is, subject to order type and any other conditions, retained in the central order book and will trade as normal (i.e. with no further volume constraints).	-Liffe	- core

14   New York Block Exchange (NYBX)

14.1   Introduction

The NYSE Arca FIX Customer Gateway can be used to route orders to the New York Block Exchange (NYBX), a new Dark Pool facility incorporating displayed and hidden liquidity. The NYBX facility is open to all existing NYSE Exchange Participants using their existing NYSE Arca FIX connections.

NYBX eligible securities are currently Tape A (NYSE). Tape B and Tape C may be added at later times.

14.2   Trading Hours

Hours of Operation for NYBX Exchange

Early/Pre-Open – 3:30 AM/4:00 AM – 9:30 AM

Core Trading Session – 9:30 AM – 4:00 PM

NYBX opens each security after the first quote is received from the primary market in that security (after 9:30 am ET).

Please note: NYBX Orders <u>do not</u> participate in the regular market opening auction.

14.3   NYBX Defined FIX Fields

The following FIX field has been added or created due to customer demand. Tag 30 is used to assist customers in trade reconciliation and also for billing purposes.

LastMkt (Tag 30)
The FIX LastMkt field will be specified on execution reports containing trades.

Values for this field:

*   BX – NYBX (New York Block Exchange)

The client may need this field for back office clearing and reporting purposes.

14.4   NYBX Trade Bust and Trade Correct Messaging

If or when the NYSE Arca Trade Desk changes or busts a trade, "Trade Break" or "Trade Correction" execution report messages can be sent outbound to the customer via FIX. **This is a per FIX session configurable option**. These messages will be defined in FIX with ExecTransType (20) =1 (Cancel) or 2 (Correct).

To request enabling this on a FIX session, please send an e-mail to connectivity@nyx.com with the name of the Firm, FIX session that you wish this enabled on and contact person.

14.5 NYBX FIX Application Protocol

New Order Single (NYBX)

In addition to requirements for the standard FIX message header, only the following fields are used by the application layer for a New Order – Single message for NYBX. Any other fields specified in the message are ignored.

Tag	Field	Description	Req.	Values
	Standard Header		*Y*	*35=D*
1	Account	If this field is present, we copy the information into execution messages referring to this order. This field can be used for clearing information.	N	Customer defined.
11	ClOrdID	This field contains the ID assigned to the order by the firm. This value must be <= 30 characters. It is critical that this ID is unique for all orders sent today. The FIX 4.0 protocol does not specify what to do if this ID is duplicated. We will ignore the order in FIX 4.0 if duplication occurs. In FIX 4.1 and 4.2, we send an Execution Report with ExecType, OrdStatus = Rejected, and OrdRejReason = Duplicate Order (6).	Y	Customer Defined <=30 characters
18	ExecInst	Required on Pegs only	Y	M = Midpoint P = Market R = Primary
38	OrderQty	Indicates share quantity on order	Y	Up to 10,000,000
40	OrdType	Indicates order type of order	Y	2 = Limit P = Peg
44	Price	Indicates price on order in decimals. Limit Order only.	Y	.01-99999.99
47	Rule80A	Indicates capacity on order. If no value is sent in this field, the order will reject.	Y	A/F=Agency/Agency P/E=Principal/Principal J/X=Agency/Principal K/H=Principal/Agency
50	SenderSubID	This field, if present, will be copied into the TargetSubID field of all messages referring to the order. Your firm must not embed dates, time stamps, or order IDs in this field, as doing so will make aggregation of orders for troubleshooting purposes impossible.	N	Customer defined.
52	SendingTime	This value must be within 60 seconds of the current time, or we will reject the order.	Y	Time in UTC format. YYYYMMDD-HH:MM:SS

Tag	Field	Description	Req.	Values
54	Side	Only Buy, Sell, Sell Short, and Sell Short Exempt	Y	1 = Buy 2 = Sell 5 = Sell Short 6 = Sell Short Exempt
55	Symbol	This field must contain a valid symbol in upper case lettering.	Y	Valid Symbol
57	TargetSubID	This field is required.	Y	NYBX
59	TimeInForce	If a value is not present in this field, the default is Day.	Y	0=Day 6=GTT (Good Till Time)
65	SymbolSfx	This field must contain a valid symbol in upper case lettering.	N	Valid Suffix value
97	PossResend	An order sent with PossResend set is checked to see if it matches an existing order with the same ClOrdID. If not, it is treated as a new order. If it is a duplicate, the FIX specification states that we should send back an Execution status message. We currently do not support status messages yet, so we will ignore the message if the order is on file.	N	Y
110	MinQty	Used for Minimum Triggering Volume.	N	<= Order Quantity
115	OnBehalfOfCompID	NYSE assigned mnemonic	Y	Agreed upon mnemonic value
116	OnBehalfOfSubID	NYSE Firm ID	N	Agreed upon NYSE Firm ID
126	ExpireTime	Used on Good Till Time orders only	Y (C)	Time in UTC format. YYYYMMDD-HH:MM:SS (Required if using 59=6)
207	SecurityExchange	MIC Code of the Exchange	Y	NYSE
211	PegDifference	Refer to pegged orders section 3.1.8	N	-9999.99-9999.99
336	TradingSessionID		N	P2
386	NoTradingSessions		N	1
9416	ExtendedExecInst	Used to indicate ellegibility on either Internal Markets or All Markets. **Only required if MTV (Tag 110) is specified**.	N	3 = Internal Markets 4 = All Markets
	Standard Footer		*Y*	

Execution Report (NYBX)

In addition to the standard FIX message header, the following fields are returned on a NYBX Execution Report message.

Tag	Field	Description	Req.	Values
	Standard Header		*Y*	*MsgType = 8*
1	Account	If this field is present, we copy the information into execution messages referring to this order. This field can be used for clearing information.	N	User specified up to 10 characters
6	AvgPx	Indicates Average Price of fills on order	Y	.0001-99999999.9999
11	ClOrdID	ClOrdID behavior defined in Execution Report section	Y	User specified up to 30 characters
14	CumQty	Indicates total quantity of fills on open order	Y	Up to 10,000,000
17	ExecID	Execution Id assigned by NYBX	Y	Numerical up to 20 characters
19	ExecRefID	On trade break or trade correction only	N	Contains the ExecID (Tag 17) value of the Fill that is broken or corrected. Numerical up to 20 characters
20	ExecTransType	All execution reports	Y	0=New 1=Cancel (Trade Break Only) 2=Correct (Trade Correction Only)
30	LastMkt	Market order was executed with	Y	BX = NYBX
31	LastPx	Indicates price of fill (On Peg order only)	Y (C)	.0001-99999999.9999
32	LastShares	Indicates quantity of fill	Y	Up to 10,000,000
37	OrderID	OrderId assigned by NYBX	Y	Numerical up to 20 characters
38	OrderQty	Indicates share quantity on order	Y	Up to 10,000,000
39	OrdStatus	Indicates status of order (Fix 4.0) or Indicates status or message (Fix 4.1and 4.2)	Y	0=New 1=Partially Filled 2=Filled 3=Done For Day 4=Cancelled 5=Replaced 6=Pending/Cxl Replace 8=Rejected E= Pending Cxl/Replace (4.2 only)
40	OrdType	Indicates order type of order	Y	2 = Limit P = Pegged
44	Price	Indicates price on order in decimals (on limit order only)	Y	0-9999999.9999
50	SenderSubID	Client will receive value specified in TargetSubID on order.	Y	NYBX
52	SendingTime	Time sent by NYBX	Y	Time specified in UTC time. YYYYMMDD-HH-MM-SS

54	Side	Side of NYBX Order	Y	1 = Buy 2 = Sell 5 = Sell Short 6 = Sell Short Exempt
55	Symbol	This field must contain a valid symbol in upper case lettering.	Y	Ticker Symbol
57	TargetSubID	Client will receive value specified in SenderSubID on order.	Y	User Specified up to 10 characters
58	Text	Additional description of message	Y	0=New Order 1=Partially Filled 2=Filled 3=Done For Day 4=Cancelled 5=Replaced 6=Pending/Cxl Replace 8=Rejected
59	TimeInForce	If a value is not present in this field, the default is Day.	N	0=Day 6=GTT (Good Till Time)
60	TransactTime	Indicates time of transaction on ack or fill	Y	Time specified in UTC time. YYYYMMDD-HH-MM-SS
128	DeliverToCompID	Value from 115 in new order message	Y	Mnemonic from New Order message
129	DeliverToSubID	Value from 116 in new order message	N	Firm ID from New Order Message
150	ExecType	Indicates status of order (FIX 4.1 and 4.2 only)	Y	0=New 1=Partially Filled 2=Filled 3=Done For Day 4=Cancelled 5=Replaced 6=Pending Cxl/Replace 8=Rejected E= Pending Cxl/Replace (4.2 only)
151	LeavesQty	Indicates open shares remaining on order	Y	Up to 10,000,000
207	SecurityExchange	MIC code of the exchange	Y	NYSE
	Standard Trailer		*Y*	

Order Cancel/Replace Request (NYBX)

In addition to requirements for the standard FIX message header, the following fields are used by the application layer for a NYBX Order Cancel/Replace Request.

Tag	Field	Description	Req.	Values
	Standard Header		*Y*	*MsgType = G*
11	ClOrdID	This field contains the ID assigned to the change by your firm. This value must be <= 49 characters. It is critical that this ID is unique for all orders and changes sent today, as well as any orders or changes that may be active from previous days. If this value is duplicated; we will send a Cancel Reject.	Y	User specified up to 30 characters
18	ExecInst	This value must match the original order.	Y	M = Midpoint P = Market R = Primary
37	OrderID	If present, the value must exactly match the OrderID NYBX assigns to the order.	N	Numerical up to 9 characters
38	OrderQty	This value can be changed	Y	Up to 10,000,000
40	OrdType	This value must match the original order.	Y	2 = Limit P = Pegged
41	OrigClOrdID	This value must match the ClOrdID of the order being changed. Note in the case of multiple changes that. This value is the ClOrdID of the most current successful change.	Y	User specified up to 30 characters
44	Price	This value can be changed	Y	.01-9999.99
47	Rule80A	This value must match the original order. If no value is sent in this field, the Cancel/Replace will reject.	Y	A/F=Agency/Agency P/E=Principal/Principal J/X=Agency/Principal K/H=Principal/Agency
52	SendingTime	This value must be within 60 seconds of the current time, or we will reject the order.	Y	Time specified in UTC time. Yyyymmdd-HH-MM-SS
54	Side	This value must match the original order.	Y	1 = Buy 2 = Sell 5 = Sell Short 6 = Sell Short Exempt
55	Symbol	This value must match the original order.	Y	Valid Symbol
57	TargetSubID	This field is required.	Y	NYBX
59	TimeInForce	This value can be changed.	Y	0=Day 6=GTT (Good Till Time)
65	SymbolSfx	This value must match the original order.	Y	Valid Suffix value

Tag	Field	Description	Req.	Values
97	PossResend	A change request sent with PossResend set is checked to see if it matches an existing order with the same ClOrdID.	N	Y
115	OnBehalfOfCompID	NYSE assigned mnemonic	Y	Mnemonic from New order message (This field cannot be changed to a new value)
116	OnBehalfOfSubID	NYSE Firm ID	N	Mnemonic from New order message (This field cannot be changed to a new value)
207	SecurityExchange	MIC code of the exchange	Y	NYSE
336	TradingSessionID	This value cannot be changed if used	N	P2 (Core hours only)
386	NoTradingSessions	This value cannot be changed if used	N	1
	Standard Trailer		*Y*	

Order Cancel Request (NYBX)

In addition to requirements for the standard FIX message header, the following fields are used by the application layer for a NYBX Order Cancel Request.

Tag	Field	Description	Req.	Values
	Standard Header		*Y*	*MsgType = F*
11	ClOrdID	This field contains the ID assigned to the change by your firm. This value must be <= 49 characters. It is critical that this ID is unique for all orders and changes sent today, as well as any orders or changes that may be active from previous days. If this value is duplicated; we will send a Cancel Reject.	Y	User specified up to 30 characters
37	OrderID	If present, the value must exactly match the OrderID NYSE AMEX assigns to the order.	N	Numerical up to 9 characters
38	OrderQty	This value must match the original order.	Y	Up to 10,000,000
40	OrdType	This value must match the original order.	Y	2 = Limit P = Pegged
41	OrigClOrdID	This value must match the ClOrdID of the order or replaced order being cancelled. This value is the ClOrdID of the most current successful change. If the order was not changed/replaced, then this will be the ClOrdID of the original order.	Y	User specified up to 30 characters
44	Price	This value must match the original order.	Y	.01-99999.99
52	SendingTime	This value must be within 60 seconds of the current time, or we will reject the order.	Y	Time specified in UTC time. Yyyymmdd-HH-MM-SS

Tag	Field	Description	Req.	Values
54	Side	This value must match the original order.	Y	1 = Buy 2 = Sell 5 = Sell Short 6 = Sell Short Exempt
55	Symbol	This value must match the original order.	Y	Valid Symbol
57	TargetSubID	This field is required.	Y	NYBX
59	TimeInForce	This value must match the original order.	Y(C)	0=Day 6=GTT (Good Till Time) (Required if specified on the original order)
65	SymbolSfx	This value must match the original order.	Y	Valid Suffix value
97	PossResend	A change request sent with PossResend set is checked to see if it matches an existing order with the same ClOrdID.	N	Y
115	OnBehalfOfCompID	NYSE assigned mnemonic	Y	Mnemonic from New order message (This field cannot be changed to a new value)
116	OnBehalfOfSubID	NYSE Firm ID	N	Mnemonic from New order message (This field cannot be changed to a new value)
207	SecurityExchange	MIC code of the exchange	Y	NYSE
	Standard Trailer		*Y*	

Order Cancel Reject (NYBX)

In addition to requirements for the standard FIX message header, the following fields are returned by the application layer on a NYBX Order Cancel Reject Message.

Tag	Field	Description	Req.	Values
	Standard Header		*Y*	*MsgType = 9*
11	ClOrdID	Unique identifier of the cancel request, which is assigned by institution.	Y	Unique identifier of the cancel request, which is assigned by institution.
39	OrdStatus	This value is applied after the Cancel Reject function is completed.	Y	Valid values: 8 = Rejected
41	OrigCIOrdID	Unique identifier of the cancel request, which is assigned by institution.	Y	ClOrdID of the order that cannot be canceled. This value does **not** apply to the initial order of the day.
58	Text		Y	Reason for rejecting the Cancel Request.
102	CxlRejReason	Code to identify reason for cancel rejection.	N	Valid values: 0 = Too late to cancel 1 = Unknown order
434	CxlRejResponseTo	Identifies the type of request that a Cancel Reject is in response to	Y	The valid values are: 1 – Order Cancel Request
	Standard Trailer		*Y*	

14.6 NYBX Order Types

Order Type	Fix tags	Description	Exchange Platform	Available Sessions
Limit Order	**Required:** OrdType (40) = 2 (limit) **Optional Tags:** MinQty (110) = <=OrderQty ExtendedExecInst (9416) = 3 or 4	An order to buy or sell at a specified price or better. A marketable limit order is a limit order to buy/sell at or above/below the consolidated best offer/bid for the security	- NYBX	- Core
Midpoint Peg Order	**Required:** OrdType (40) = P ExecInst (18) = M **Optional Tags:** MinQty (110) = <=OrderQty ExtendedExecInst (9416) = 3 or 4	An order with a price that will track the midpoint of the national best bid or offer (NBBO). Pegged orders may also make use of offsets from the same side bid/offer or offsets from the contra side (peg buy offset from offer).	- NYBX	- Core
Market Peg	**Required:** OrdType (40) = P ExecInst (18) = P **Optional Tags:** MinQty (110) = <=OrderQty ExtendedExecInst (9416) = 3 or 4 PegDifference (211) = offset to market	An order with a price that will track the national best bid or offer (NBBO). Market Peg orders may also make use of offsets from the same side bid/offer or offsets from the contra side (peg buy offset from offer).	- NYBX	- Core
Primary Peg	**Required:** OrdType (40) = P ExecInst (18) = R **Optional Tags:** MinQty (110) = <=OrderQty ExtendedExecInst (9416) = 3 or 4 PegDifference (211) = offset to market	An order with a price that will track the national best bid or offer. Pegged orders may also make use of offsets from the same side bid/offer or offsets from the contra side (peg buy offset from offer).	- NYBX	- Core
Good Till Time	**Required:** TimeInForce(59)=6(GTT) ClOrdID(11)=yyyymmdd + customer defined value ExpireTime (126)=Expiration Time specified in UTC format	An order that expires at a designated time during the day. (These orders do not carry over multiple days) The ClOrdID must start with the current date in YYYYMMDD format and an ExpireTime must be set.	- NYBX	- Core