Order Routing Field Mapping between CAT and Exchanges

8/4/2020

Version 1.6

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Revision Summary

Version	Publish Date	Description
1.0	12/6/2018	Initial Publication
1.1	2/11/2020	Updated guidance for populating senderIMID as per CAT Alert 2018-003 Cboe: Updates for population of session
1.2	3/24/2020	Nasdaq Family: Options Exchanges Added MIAX Family: • Updates for population of session for MIAMI and PEARL • MIAX EMRLD added • MEI and MEO interfaces added
1.3	4/7/2020	Republished as “Order Routing Field Correlations between CAT and Exchanges” BOX: Updates for population of session
1.4	4/21/2020	Retitled as “Order Routing Field Mapping between CAT and Exchanges” Updated Intro language. Removed Section 2 and incorporated information into Section 2.6.3 of the IM Technical Specifications. MIAX Family: • Updates for population of session for MIAMI and PEARL
1.5	6/2/2020	Cboe Family: • Added Sections 2.1 and 2.2 to differentiate between requirements for Cboe Equities Exchanges and Options Exchanges, and include updates for population of senderIMID for Cboe Options Exchanges.
1.6	8/4/2020	MIAX Family: • Updates for population of senderIMID field

Summary

This document is a supplement to the *CAT Reporting Technical Specifications for Industry Members* ("IM Tech Spec") and provides guidance outlining how Industry Members should populate each field required for Exchange Route Matching. As described in Section 2.6.3 of the IM Tech Spec, the *Consolidated Audit Trail (CAT)* system must be able to link all CAT Order Route events to the related exchange orders. This document provides clarification on the values to be provided based on the exchange the order is routed to, describing specific guidance related to each field required for Exchange Route Matching.

Order routing fields – CAT/Exchange correlations

The sections below contain a field-by-field mapping for each exchange outlining how CAT Order Route event fields should be populated based on each related exchange protocol.

1. BOX

The table below describes the specific fields CAT uses to match Order Route events to the related Order Accept events reported by **BOX** options exchange.

CAT Report Field	BOX-related field
senderIMID	Market Participant Identifier (MPID)
routedOrderID	ClOrdID (Tag 11) for FIX Users ClientOrderId (Tag 191) for SAIL Users
Symbol	Symbol
eventTimestamp	Trade Date
session[1]	FIX: • SenderCompID (Tag 49) SAIL: • "User Id" tag from the "TC-User Connection" Message sent by the Participant at the beginning of the day

[1] Beginning September 9, 2020, **session** must be populated as specified.

2. Cboe Exchange Family

2.1. Cboe Equities Exchanges

The below matrix describes the specific fields CAT uses to match CAT Order Route events to the related Order Accept events reported by the Cboe Equities Exchanges (Cboe BYX Equities Exchange, Cboe BZX Equities Exchange, Cboe EDGA Equities Exchange, and Cboe EDGX Equities Exchange).

CAT Report Field	Exchange-Related Field
senderIMID	Market Participant Identifier (MPID) ClearingFirm (Tag 439) · FIX Users (except Service Bureau) OnBehalfofCompId (Tag 115) · FIX Users (Service Bureau) ClearingFirm · BOE Users
routedOrderID	ClOrdID (Tag 11) · FIX Users ClOrdID · BOE Users
Symbol	Symbol
eventTimestamp	Trade Date
session[2]	Concatenation of fields for a total session field length of 8 as follows: <SenderCompID(Tag 49)><SenderSubId (Tag 50)> · FIX Users < Username><SessionSubId> · BOE Users

2.2. Cboe Options Exchanges

The below matrix describes the specific fields CAT uses to match CAT Order Route events to the related Order Accept events reported by the Cboe Options Exchanges (Cboe BZX Options Exchange, Cboe Options Exchange, Cboe C2 Options Exchange, and Cboe EDGX Options Exchange).

CAT Report Field	Exchange-Related Field

[2] Matching criteria for Cboe related to the population of **session** differs from the OATS requirement for populating Connection ID. There is no change to the OATS requirement. The guidance for populating **session** is effective September 9, 2020. Prior to September 9, 2020, **session** may be populated with the concatenated values as specified. Beginning September 9, 2020, **session** must be populated as specified.

senderIMID	Routing Broker EFID (if present): RoutingFirmID (Tag 7933) · FIX Users RoutingFirmID · BOE Users When Routing Broker EFID not present, then Executing Firm ID (EFID) OnBehalfofCompId (Tag 115) · FIX Users ClearingFirm · BOE Users
routedOrderID	ClOrdID (Tag 11) · FIX Users ClOrdID · BOE Users
Symbol	Symbol
eventTimestamp	Trade Date
session	Concatenation of fields for a total session field length of 8 as follows: <SenderCompID(Tag 49)><SenderSubId (Tag 50)> · FIX Users < Username><SessionSubId> · BOE Users

3. Investors Exchange (IEX)

The below matrix describes the specific fields CAT uses to match CAT Order Route events to the related Order Accept events reported by **IEX**.

CAT Report Field	IEX-Related Field
senderIMID	OnBehalfOfCompID (Tag 115) · FIX Users (Service Bureau) SenderCompID (Tag 49) · FIX Users (except Service Bureau)
routedOrderID	ClOrdID (Tag 11) · FIX Users
Symbol	Symbol
eventTimestamp	Trade Date
Session	SenderCompID (Tag 49) · FIX Users

4. Miami Exchange Family[3]

4.1. Miami Securities Exchange and MIAX Emerald

The below matrix describes the specific fields CAT uses to match CAT Order Route events to the related Order Accept events reported by the MIAMI International Exchange and MIAX Emerald.

<table>
<tr><th>CAT Report Field</th><th>Exchange-Related Field</th></tr>
<tr><td>senderIMID</td><td>FIX Order
SenderSubID FIX (Tag 50)
eQuote (MEI)
MPID</td></tr>
<tr><td>routedOrderID</td><td>FIX Order:
ClOrdID (Tag 11)
eQuote (MEI):
Client message Id
<table><tr><td>Client Message ID</td><td>4</td><td>BinaryU</td><td>Unique Message ID assigned by the firm</td></tr></table></td></tr>
<tr><td>symbol</td><td>Symbol –Simple Option Order FIX (Tags 55, 200, 201, 202 and 205)
Multi-leg Option Order FIX (Tags 600, 608, 611 and 612)</td></tr>
<tr><td>eventTimestamp</td><td>Trade Date</td></tr>
<tr><td>session</td><td>FIX Order:
SenderCompID (Tag 49)
eQuote (MEI Interface):
Username + “-“ + Computer ID. (see “TCP Session Management (SesM) Protocol Specification” section 3.2.1 Login Request)
<table><tr><td>Username</td><td>5</td><td>Alphanumeric</td><td>Username issued by MIAX during initial setup</td></tr><tr><td>Computer ID</td><td>8</td><td>Alphanumeric</td><td>ID issued by MIAX during initial setup</td></tr></table></td></tr>
</table>

4.2. MIAX PEARL International

CAT Report Field	Exchange-Related Field

[3] The updated guidance for populating the **route link key** for routes to an exchange in the MIAMI Exchange family is effective September 9, 2020.

<table>
<tr><td>senderIMID</td><td>FIX Order
SenderSubID FIX (Tag 50)
Binary Order (MEO)
MPID</td></tr>
<tr><td>routedOrderID</td><td>FIX Order:
ClOrdID (Tag 11)
Binary Order (MEO Interface) (unassigned Market Maker Order or Non Market Maker Order or other than day TIF):
If Auto Replaced: Client message Id + ‘-‘ + “Client Order ID”
<table><tr><td>Client Message ID</td><td>4</td><td>BinaryU</td><td>Unique Message ID assigned by the firm</td></tr></table>
<table><tr><td>Client Order ID</td><td>4</td><td>N</td><td>BinaryU</td><td>Client order ID.
If an Order with this Client Order ID found for the same product, MPID and side, this Order replaces the resting Order. If not, this order is treated as new Order.
For each Product and side, an MPID can have a maximum of N orders with unique client order ID that they can keep replacing.
0 results in a reject.
Maximum value (N) defined in Regulatory circular.</td></tr></table>
Otherwise: Client Order Id</td></tr>
<tr><td>symbol</td><td>Symbol –Simple Option Order FIX (Tags 55, 200, 201, 202 and 205)</td></tr>
<tr><td>eventTimestamp</td><td>Trade Date</td></tr>
<tr><td>session</td><td>FIX Order:
SenderCompID (Tag 49)
Binary Order (MEO Interface):
Username + “-“ + Computer ID. (see “TCP Session Management (SesM) Protocol Specification” section 3.2.1 Login Request)
<table><tr><td>Username</td><td>5</td><td>Alphanumeric</td><td>Username issued by MIAX during initial setup</td></tr><tr><td>Computer ID</td><td>8</td><td>Alphanumeric</td><td>ID issued by MIAX during initial setup</td></tr></table></td></tr>
</table>

5. Nasdaq Exchange Family

5.1. Nasdaq Stock Market, Nasdaq BX and Nasdaq PSX

The below matrix describes the specific fields CAT uses to match CAT Order Route events to the related Order Accept Events reported by The Nasdaq Stock Market, Nasdaq BX and Nasdaq PSX.

CAT Report Field	Exchange-Related Field
senderIMID	Market Participant Identifier (MPID)
routedOrderID	ClOrdID (Tag 11) · FIX Users Order Token/Client Order ID · RASHport Users Order Token · DROP Users · OUCH Users User Order ID · QIX Users UID · CTCI Users
Symbol	Symbol · FIX Users Stock · DROP Users · OUCH Stock Symbol · RASHport
eventTimestamp	Trade Date
session	SenderCompID (Tag 49) · FIX Users OUCHAcct · NASDAQ INET OUCH QIXAcct · NASDAQ QIX: RASHAcct · RASHPort Source · OUCH Drop Deliver ToSubID (Tag 128) · FIX/RASH Drop

5.2. Nasdaq Options Markets

The below matrix describes the specific fields CAT uses to match CAT Order Route events to the related Order Accept events reported by The Nasdaq Options Markets (ISE, GEMX, MRX, PHLX, NOM, and NOBO).

CAT Report Field	Exchange-Related Field
senderIMID	Market Participant Identifier (Firm Mnemonic) / MM Badge
routedOrderID	ClOrdID (Tag 11) · FIX Users

CAT Report Field	Exchange-Related Field
	Order Token · OTTO 1.4.d ClOrdID · OTTO 2.1.* Message-ID · SQF (Since Message-ID is binary, it will be converted to HEX)
Symbol / OptionID	Symbol/OptionID · FIX Users · SQF Users (for Sweep Orders) · OTTO
eventTimestamp	Trade Date
session	SenderCompID (Tag 49) · FIX Users OTTO ACCT (Login-id from the URL) ·OTTO 1.4.d and OTTO 2.1 Users SQF ACCT (Login-id from the URL) · SQF Users

6. ICE Exchange Family

6.1. New York Stock Exchange (NYSE)

The below matrix describes the specific fields CAT uses to match CAT Order Route events to the related Order Accept events reported by the New York Stock Exchange.

CAT Report Field	NYSE-Related Field
senderIMID	Entering Firm Trading Mnemonic
routedOrderID	ClOrdID (Tag 11) · NYSE FIX Users ClientOrderID · NYSE UTP Direct Users
Symbol	Symbol · NYSE UTP Direct Users · NYSE FIX Users
eventTimestamp	Trade Date
session	SenderCompID (Tag 49) · NYSE UTP Direct Users · NYSE FIX Users

6.2. NYSE Arca, NYSE American, NYSE Chicago and NYSE National Stock Exchange (NYSE Pillar Gateway)

The below matrix describes the specific fields CAT uses to match CAT Order Route events to the related Order Accept Event in NYSE American, NYSE Chicago, NYSE National, and NYSE Arca, received via the NYSE Pillar Gateway.

CAT Report Field	Exchange-Related Field
senderIMID	Firm Identifier – MPID
routedOrderID	ClOrdID (Tag 11) · FIX Users · Binary Users
Symbol	Symbol
eventTimestamp	Trade Date
session	SenderCompID · FIX Users Username · Binary Users

6.3. NYSE Arca prior to the migration to Pillar Native Gateway

Firms are required to migrate to the NYSE Pillar gateway as per the schedule provided on the below website: https://www.nyse.com/pillar. The below matrix describes the specific fields that CAT uses to match CAT Order Route events to the related Order Accepted event, prior to migration to the Pillar gateway.

CAT Report Field	Exchange-Related Field
senderIMID	Equity Trading Permit ID (ETPID) · NYSE Arca Entering Firm Trading Mnemonic · NYSE MKT
routedOrderID	ClOrdID (Tag 11) · Arca FIX Users · NYSE FIX Users ClientOrderID · NYSE UTP Direct Users Client Order ID · Arca Direct Users
Symbol	Symbol · Arca FIX Users · NYSE UTP Direct Users · Arca Direct Users · NYSE FIX Users

CAT Report Field	Exchange-Related Field
eventTimestamp	Trade Date
session	SenderCompID (Tag 49) · FIX Users Login ID · ARCA Direct GCCD

6.4. NYSE American Options and NYSE Arca Options

The below matrix describes the specific fields CAT uses to match CAT Order Route events to the related Order Accept events reported by the NYSE American Options and the NYSE Arca Options exchanges.

CAT Report Field	Exchange-Related Field
senderIMID	Options Trading Permit ID (TPID) NYSE American Options NYSE Arca Options
routedOrderID	ClOrdID (Tag 11) · Arca FIX Users Client Order ID · Arca Direct Users
Symbol	Symbol FIX Users Arca Direct Users
eventTimestamp	Trade Date
session	SenderCompID (Tag 49) · FIX Users Login ID · ARCA Direct GCCD