CAT Alert – 2018-004

Date: 12/6/18

Order Routing Field Correlations

Between CAT and Exchanges

Summary

This alert memo provides guidance related to the **linking obligations** of industry members that report an Order Route Event to reflect the routing of an order to a national securities exchange.

As described in Section 4.3 of the *CAT Reporting Technical Specifications for Industry Members*, the *Consolidated Audit Trail (CAT)* system must be able to link all the CAT Order Route Events to the related exchange orders. In order for CAT to link orders routed by an Industry Member to an exchange, certain matching data elements must be provided by each side to create the order's lifecycle. These data elements make up the **lifecycle key** for any Reportable Event. For orders routed by an Industry Member to an exchange, the lifecycle **route link key** is defined as:

date, senderIMID, destination, symbol, session, routedOrderID

As shown below, the data in the respective fields of the linkage key **must match** in order to create lifecycle.

Industry Member Order Route Event	Participant Order Accepted Event
senderIMID	routingParty
destination (Exchange ID)	exchange (Exchange ID)
Date	Date
symbol (or optionID)	symbol (or optionID)
session	session
routedOrderID*	routedOrderID

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.

IDs and field descriptions

Subsections below describe the formatting/configuration of the various IDs and fields associated with event reporting.

Exchange ID codes

The table below provides the respective **Exchange Code** for each US equity and options exchange. Industry Members should populate the **destination** field on their Order Route event when routing an order to the respective exchange. In turn, the respective exchange populates the **exchange** field on their Order Accepted event.

Family	Exchange ID
BOX Options Exchange	**BOX**
Investors Exchange	**IEX**
Cboe Family	
Cboe Options	**CBOE**
C2 Options	**C2**
Cboe BYX Exchange	**BYX**
Cboe BZX Equities	**BZX**
Cboe BZX Options	**BZXOP**
Cboe EDGA	**EDGA**
Cboe EDGX Equities	**EDGX**
Cboe EDGX Options	**EDGXOP**
Miami Family	
Miami International Securities Exchange	**MIAMI**
MIAX PEARL	**PEARL**

FAMILY	EXCHANGE ID
Nasdaq Family	
Nasdaq BX Equities Market	**BX**
Nasdaq BX Options Market	**NOBO**
Nasdaq PHLX Equities Market	**PSX**
Nasdaq PHLX Options Market	**PHLX**
Nasdaq Stock Market	**NSDQ**
Nasdaq Options Market	**NOM**
Nasdaq ISE	**ISE**
Nasdaq GEMX	**GEMX**
Nasdaq MRX	**MRX**
ICE Family	
NYSE American Equities	**AMER**
NYSE American Options	**AMEROP**
NYSE ARCA Equities	**ARCA**
NYSE ARCA Options	**ARCAOP**
The New York Stock Exchange	**NYSE**
NYSE CHX	**CHX**
NYSE NSX	**NSX**

senderIMID (Industry Member ID)

The CAT requires members to report in the **senderIMID** field the unique identifier assigned to the member by the exchange.

Accordingly, the senderIMID must be assigned to the same member firm that is submitting the CAT Order Route event, representing the transmittal of the order to the exchange. If a firm has multiple identifiers assigned to them by the exchange, the firm must report the same identifier as the one that was used in the order route message to the exchange. The value in the senderIMID field has to equal the routingParty field value reported by the exchange on the Participant Order Accepted event.

routedOrderID

The **routedOrderID** is assigned to the order by the Industry Member when routing the order to the exchange.

The routedOrderID field must be reported to the CAT in the exact format as sent to the exchange. Firms should take note of each exchange's interface specifications regarding special characters, spaces and leading zeros as some exchange transmission protocols may remove certain characters, spaces or leading zeros. This field value must match the value for routedOrderID reported by the exchange in their Order Accepted report.

symbol

The **symbol** is the stock symbol in the symbology of the primary listing exchange, or the optionID (the OSI symbol) of the listed options.

eventTimestamp

The **eventTimestamp** is the date/time the order is routed.

Timestamp must be reported to milliseconds or a finer increment, up to nanoseconds. Firms must include in the eventTimestamp field the precise date and time the order was routed to the exchange. However, only the date portion of this field is used for linkage purposes.

session

The **session** allows a firm to report to the CAT the unique identifier representing the name of the connection used when routing an order to a national securities exchange.

This value must match the session reported in the Order Accepted event by the receiving exchange. Since the CAT requires all routedOrderIDs to be unique within the session, day, destination exchange and Exchange Participant ID (senderIMID), the session field is a mandatory field that firms have to populate to ensure that each routed order is uniquely identified.

Order routing fields – CAT/Exchange correlations

The sections below contain a field-by-field mapping for each exchange to which the CAT fields link.

BOX

The table below describes the specific fields the 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 User
Symbol	Symbol
eventTimestamp	Trade Date
Session	1

CBOE BYX, CBOE BZX, CBOE EDGA, CBOE EDGX

The below matrix describes the specific fields the CAT uses to match CAT Order Route events to the related Order Accept events reported by the BATS BYX Exchange, BATS BZX Exchange, EDGA Exchange, or EDGX Exchange.

CAT Report Field	Exchange-Related Field
senderIMID	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	senderSubId (Tag 50) · FIX Users sessionSubId · BOE Users

Investors Exchange (IEX)

The below matrix describes the specific fields the 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

Miami International Securities Exchange and MIAX PEARL

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

CAT REPORT FIELD	EXCHANGE-RELATED FIELD
senderIMID	SenderSubID FIX (Tag 50)
routedOrderID	ClOrdID (Tag 11) · FIX Users
Symbol	Symbol –Simple Option Order FIX (Tags 55, 200, 201, 202 and 205) Multi-leg Option Order FIX (Tags 600, 608, 611 and 612)
eventTimestamp	Trade Date
Session	SenderCompID (Tag 49) · FIX Users

Nasdaq Stock Market, Nasdaq BX and Nasdaq PSX

The below matrix describes the specific fields the 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

CAT Report Field	Exchange-Related Field
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

New York Stock Exchange (NYSE)

The below matrix describes the specific fields the 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

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

The below matrix describes the specific fields the CAT uses to match CAT Order Route events to the related Order Accept Event in NYSE American, 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

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 the 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
eventTimestamp	Trade Date
Session	SenderCompID (Tag 49) · FIX Users Login ID · ARCA Direct GCCD

NYSE American Options and NYSE Arca Options

The below matrix describes the specific fields the 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