

Consolidated Audit Trail

Outbound Router Industry Webinar 10/21/20

Agenda

- ▶ Exchange Matching Timeline
- ▶ Current Outbound Router Unlinked Statistics
- ▶ Linkage Keys and Errors
- ▶ Exchange Route Matching Processing
- ▶ Early Observations on Exchange Linkage Errors
- ▶ Feedback and Corrections

2a/2b Timelines

- ▶ The CAT Industry Member Test and Production Environments for Phases 2a and 2b are being rolled out in a series of releases which implement different validation types at different times. These releases include:

Release	Test Environment Deployment Date	Production Environment Deployment Date	Compliance Go-Live Date
1- File Submission and Data Integrity	December 16, 2019	April 13, 2020	June 22, 2020 (Phase 2a)
	(multiple releases)	(multiple releases)	July 20, 2020 (Phase 2b)
2- Intrafirm Linkage	April 20, 2020	May 4, 2020	July 27, 2020 (Phase 2a)
	(multiple releases)	(multiple releases)	August 24, 2020 (Phase 2b)
3- Interfirm Linkage	July 27, 2020	August 10, 2020	October 26, 2020 (Phase 2a)
			January 4, 2021 (Phase 2b)
4- Exchange/ TRF Linkage	September 9, 2020	September 28, 2020	October 26, 2020 (Phase 2a)
			January 4, 2021 (Phase 2b)

- ▶ Refer to [CAT Alert 2020-01](#) for additional information.

Exchange Linkage- Routes to an Exchange

▶ Resources:

- [Exchange Route Matching Industry Webinar \(9/16/20\)](#)
- [Plan Participant Contact List](#)
 - This list provides Industry Members with a contact for error linkage issues and interpretive issues related to the respective Plan Participant. This list will continue to be updated as additional contact information is available.
- [Order Routing Field Mapping between CAT and Exchanges](#)
- Section 2.4.1 of the [Technical Specifications for Industry Members](#)

Orders Received from an Exchange Unlinked Rate

Processing Date	Equities	Options
10/12/20	5.50%	73.78%
10/13/20	6.65%	37.62%
10/14/20	6.04%	0.00%
10/15/20	6.03%	0.00%
10/16/20	5.86%	0.00%

Linkage Keys and Errors

Route Linkage Key- Receiving from Exchange

Sender (Exchange)	Receiver (Industry Member Outbound Router)
routingParty	receiverIMID
Exchange (Exchange ID)	senderIMID (Exchange ID)
Event Date	Event Date portion of eventTimestamp
symbol (or optionID)	symbol (or optionID)
routedOrderID	routedOrderID

- ▶ Route Linkage Key must be unique and must be equal between the exchange and the Industry Member.
- ▶ From an exchange to an outbound router, the *session* is not part of the linkage key.
- ▶ *routedOrderID* must be unique without *session*. This means that the session ID cannot be used to achieve uniqueness.
- ▶ Refer to **Section 2.6.3.3** of the IM Tech Spec for additional information/examples.

Exchange Route Linkage Key- Sending to an Exchange

Sender (Industry Member Outbound Router)	Receiver (Exchange)
senderIMID	routingParty
destination (Exchange ID)	Exchange (Exchange ID)
Event Date portion of eventTimestamp	Event Date
symbol (or optionID)	symbol (or optionID)
routedOrderID	routedOrderID
session	session

- ▶ Guidance for populating linkage keys when routing to each exchange is found in the Order Routing Field Mapping between CAT and Exchanges, published on the Technical Specifications page of CATNMSPlan.com.
- ▶ Route Linkage Key must be unique and must be equal between the firm and the exchange.
- ▶ Refer to **Section 2.6.3.2** of the IM Tech Spec for additional information/examples.

Blanks, Leading Zeros and Special Characters

- ▶ Leading zeroes
 - Leading zeroes are removed at ingest from fields that are data type 'Numeric'.
 - Leading zeroes are removed from the routedOrderID field at time of Route Linkage Key construction.
- ▶ <Blank> Characters
 - Leading and trailing <blank> characters are removed at ingest from fields that are data type 'Text' and 'Alphanumeric'.
 - A <blank> character in the middle of the routedOrderID field is NOT removed. For example, if an Industry Member submits "ABC 123" and the Exchange submits "ABC123" an unlink error will occur.
- ▶ Feedback files will NOT contain FINRA CAT alterations to 'Text' and 'Alphanumeric' fields made during Route Linkage Key construction. For example, when researching the following linkage error, Industry Members should note the leading zero was removed during the linkage process and the error is related to the special character.

Submission	Linkage Key	Feedback
Industry Member: 01234_5678	1234_5678	Industry Member: 01234_5678
Exchange: 12345678	12345678	Exchange: 12345678

Populating IMID Fields on Exchange Routes

Sender- EOR		Receiver- MEOA	
Exchange EXCH		CATReporterIMID ABCD	
exchange	EXCH	senderIMID	EXCH
routingParty	ABC	receiverIMID	123:ABC
Event Date	05012018	Event Date	05012018
symbol	XYZ	symbol	XYZ
routedOrderID	ROID1234	routedOrderID	ROID1234

Sender- EOR		Receiver- MEOA	
NSDQ		Outbound Router	
exchange	NSDQ	senderIMID	NSDQ
routingParty	OBR	receiverIMID	123:OBR
Event Date	05012018	Event Date	05012018
symbol	XYZ	symbol	XYZ
routedOrderID	ROID1234	routedOrderID	ROID1234

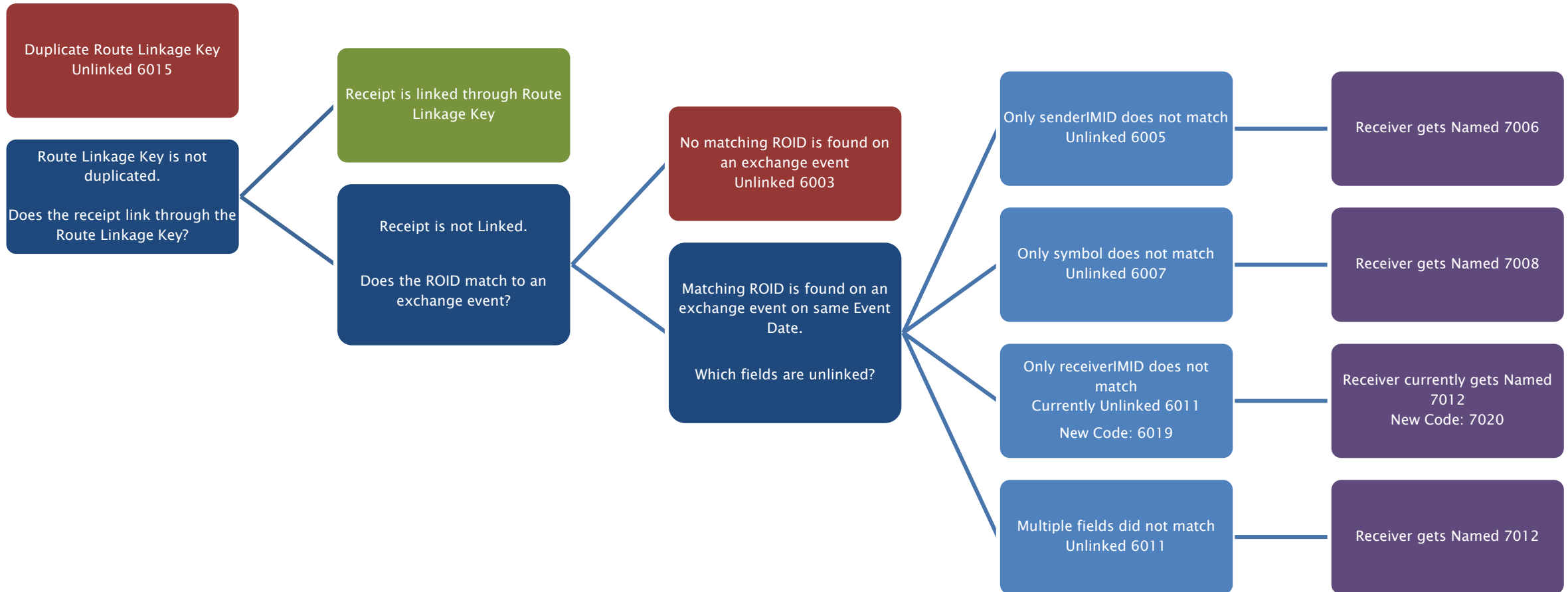
Exchange Route Key Linkage Errors

Error Type	Assigned Series
Exchange Linkage Errors	6000 and 7000

Error Type	Description
Unlinked Route to or From Exchange	Error codes assigned to the CAT Reporter who submitted the route event or accepted that is unlinked. Specific codes delivered to distinguish which part of the linkage key failed to match. Codes are the same when routing to an exchange and receiving from an exchange.
Named Errors	Error codes assigned when the CAT Reporter was named in a record submitted by an Exchange that is unlinked.
Route Key Duplicates	Error codes assigned when an Industry Member reports a duplicated Exchange Route Linkage key. Duplication of Exchange Route Linkage Keys will result in unlinked errors for all records having the same key. Separate codes are provided when routing to an exchange and receiving from an exchange.

Order Received from an Exchange- Linkage Order of Operations

Is the Route Linkage
Key Duplicated?



Observations with Differences in Exchange Linkages Key

The following scenarios are generating unlinked events and have been observed across many firms:

1. Industry Member and Exchange populating different *routedOrderIDs*.
2. Industry Member and Exchange populating different IMIDs.
3. Duplicated Route Linkage Key.
4. Equity Legs received from an options exchange must be marked with a *handlingInstructions* value of 'OPT'. MEOAs received from an options exchange not marked with 'OPT' will receive a linkage error.

Correcting Unlinked Errors– Receipt from Exchange

- ▶ Feedback and Correction approach is the same as what is occurring with IM to IM

Example 1 – Routed Order ID is not equal, Outbound Router corrects

	Error Code	actionType	CATReporterIMID	Type	senderIMID/ routingParty	destination/ receiverIMID	routedOrderID
Exchange Order				EOR	NSDQ	99999999:ZZZT1	XX113854
Unlinked and Unlinked Named	6003, 7004	NEW	ZZZT1	MEOA	NSDQ	99999999:ZZZT1	XX113854ZZZ
Resolves both errors		RPR	ZZZT1	MEOA	NSDQ	99999999:ZZZT1	XX113854

How to Ask a Question during Today's Call

- ▶ **For participants using computer audio:**
 - Click the “Raise Hand” button at the bottom of the participants window.
 - A visual prompt will indicate that your line has been unmuted.

- ▶ **For participants using phone audio:**
 - Enter *9 on your phone keypad.
 - An audio prompt will indicate that your line has been unmuted.