
Intrafirm Linkage – Linkage Key Duplicates Discussion Item

Summary

- ▶ In 2018, after discussions with the Industry, a decision was made to require unique Routed Order Identifiers
- ▶ Accordingly, the Technical Specification was updated in 2019 to include a validation that would result in the rejection of duplicate linkage keys (Error code 3008 and 3009)
- ▶ The specifications requires both sender and receiver to repair these rejections by submitting a repair for all rejected events
- ▶ If an MEOA/MOOA event is rejected with the 3008/3009 error code, all children receive a “Parent Not Found” Linkage Error resulting in a large number of unlinked errors

Route Linkage Key

- ▶ Linkage Key MUST be unique for combination of:
 - SenderIMID
 - Destination / ReceiverIMID
 - Event Date (date portion of the Event Timestamp)
 - Symbol / Option ID
 - Routed Order ID
- ▶ Validations performed for uniqueness during Linkage Discovery

Proposed Change: CAT Processing Overview



Proposed Change

- ▶ Short-Term (Incorporate with May 18 Prod Release)
 - Retire 3008 and 3009 (Linkage Key Duplicate) Validations to allow Industry Members to focus on Intrafirm Linkage Discovery errors
 - FINRA CAT would monitor duplicate Linkage Keys in Production and proactively work with firms
- ▶ Long-Term (Estimating for Interfirm CT Release – July 27)
 - Move Route Linkage Key Validation to the Linkage Discovery Phase – Route Key Errors would still need to be repaired
 - Define new Linkage Error Codes for both Routing and Receiving Firm. Examples:
 - 6XXX – Unlinked due to duplicated Route Linkage Key on a Route to an Exchange
 - 9XXX – Unlinked due to duplicated Route Linkage Key on an Order Accept or Modification received from an Industry Member
 - NOTE: If unrepaired, Regulatory Users would still have these records in the audit trail. An Intrafirm CAT-Lifecycle-ID would be assigned; however, it would remain as “Unlinked” because an Interfirm Link would not be established.

Data Example – Proposed Outcome

Unlinked - Due to Duplicated Route Linkage Key					
Action Type	Event	Order Key	Route Link Key	ErrorROEID	Error Code
NEW	MEOR	4/24/2020, IMIDA, AAPL, 12345	IMIDA, IMIDB, 4/24/2020, AAPL, ROID1	1	8XXX
NEW	MEOR	4/24/2020, IMIDA, AAPL, 67890	IMIDA, IMIDB, 4/24/2020, AAPL, ROID1	2	8XXX
NEW	MEOA	4/24/2020, IMIDB, AAPL, 54321	IMIDA, IMIDB, 4/24/2020, AAPL, ROID1	3	9XXX
NEW	MEOA	4/24/2020, IMIDB, AAPL, 09876	IMIDA, IMIDB, 4/24/2020, AAPL, ROID1	4	9XXX

- ▶ Events participate in Intrafirm Linkage
- ▶ Parent Not Found errors would NOT occur for IMIDB
- ▶ Two Unlinked Errors for IMIDA – Unlinked due to Duplicated Route Linkage Key on a Route to an Industry Member
- ▶ Two Unlinked Errors for IMIDB – Unlinked due to Duplicated Route Linkage Key on an Order Accept or Modification received from an Industry Member
- ▶ IMIDA and IMIDB must correct and resubmit events with unique Route Linkage keys in order for events to participate in Intervene linkages.

Example: Repairing Duplicate Route Linkage Keys

Corrections					
Action Type	Event	Order Key	Route Link Key	ErrorROEID	
RPR	MEOR	4/24/2020, IMIDA, AAPL, 12345	IMIDA, IMIDB, 4/24/2020, AAPL, ROID1.1	1	Corrected Key
RPR	MEOR	4/24/2020, IMIDA, AAPL, 67890	IMIDA, IMIDB, 4/24/2020, AAPL, ROID1	2	Resubmit
RPR	MEOA	4/24/2020, IMIDB, AAPL, 54321	IMIDA, IMIDB, 4/24/2020, AAPL, ROID1.1	3	Corrected Key

- ▶ IMIDA corrects 1 MEOR to create a unique Route Linkage Key
- ▶ IMIDA resubmits 1 MEOR
- ▶ IMIDB corrects 1 MEOA by changing the Route Linkage Key to match the key of IMIDA
- ▶ All events will be considered repaired, and Intervene linkages will occur
- ▶ IMIDB's other MEOA will repair by reconciliation upon receipt of the resubmitted MEOR by IMIDA

Audit Trail

Audit Trail								Replaced
GUID	FirmROEID	Action Type	Event	Order Key	Route Link Key	CATOrderID	Indicator	
9	5	NEW	MENO	4/24/2020, IMIDA, AAPL, 12345		112233		
10	1	NEW	MEOR	4/24/2020, IMIDA, AAPL, 12345	IMIDA, IMIDB, 4/24/2020, AAPL, ROID1	112233	Y	
15	1	RPR	MEOR	4/24/2020, IMIDA, AAPL, 12345	IMIDA, IMIDB, 4/24/2020, AAPL, ROID1.1	112233		
13	3	NEW	MEOA	4/24/2020, IMIDB, AAPL, 54321	IMIDA, IMIDB, 4/24/2020, AAPL, ROID1	112233	Y	
17	3	RPR	MEOA	4/24/2020, IMIDB, AAPL, 54321	IMIDA, IMIDB, 4/24/2020, AAPL, ROID1.1	112233		
11	6	NEW	MENO	4/24/2020, IMIDA, AAPL, 67890		445566		
12	2	NEW	MEOR	4/24/2020, IMIDA, AAPL, 67890	IMIDA, IMIDB, 4/24/2020, AAPL, ROID1	445566	Y	
16	2	RPR	MEOR	4/24/2020, IMIDA, AAPL, 67890	IMIDA, IMIDB, 4/24/2020, AAPL, ROID1	445566		
14	4	NEW	MEOA	4/24/2020, IMIDB, AAPL, 09876	IMIDA, IMIDB, 4/24/2020, AAPL, ROID1	445566		

- ▶ All events included in the Lifecycle
- ▶ Unlinked Events for which the Route Link Key was updated are distinguished with a replace indicator

Communication of Requirements for Unique Keys

- ▶ Update Industry Member Technical Specifications with 5/18/2020 Publish
 - Enhance Section 2.6 to specify requirement for Event Keys and Route Linkage Keys to be unique include the outcome when they are not unique
 - Add new Unlinked Error Codes when duplicated Route Linkage Key is found
 - Improve Error Code definitions
- ▶ Post Announcement with Tech Spec publish with a specific callout for the clarifications of unique Event Keys and Route Linkage Keys
- ▶ Communicate in Weekly Checkpoints