

# Update on the Consolidated Audit Trail (CAT) Industry Member Technical Specifications Options Deep Dive

*Presented by the CAT NMS, LLC Operating Committee*



November 8, 2018

# Agenda

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Complex Order Scenarios

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Representative Orders Scenarios

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CAT NMS Informational Resources

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Q&A

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Additional Workflow Examples

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## Scope Definition of 2b (1/2)

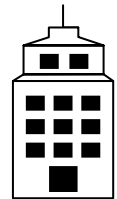
- In Phase 2b, Industry Members are required to report CAT Industry Member Data related to Eligible Securities that are listed options and meet the definition of Simple Electronic Option Orders, excluding Electronic Paired Option Orders.
- Simple Electronic Option Orders mean orders to buy or sell a single option that are not related to or dependent on any other transaction for pricing or timing of execution that are either received or routed electronically by an Industry Member CAT Reporter.
  - Electronic receipt of an order is defined as the initial receipt of an order by an Industry Member in electronic form in standard format directly into an order handling or execution system.
  - Electronic routing of an order is the routing of an order via electronic medium in standard format from one Industry Member's order handling or execution system to an exchange or another Industry Member.

## Scope Definition of 2b (2/2)

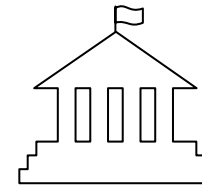
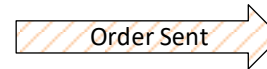
- Electronic Paired Option Orders mean electronic option orders that contain both the buy and sell side that is routed to another Industry Member or exchange for crossing and/or price improvement as a single transaction on an exchange.
- Electronic Paired Option Orders are excluded from Phase 2b and are not reportable until Phase 2d.

# 2b Reportable Electronic Workflows

Prop Order Flow

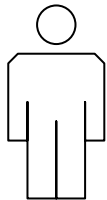


BD

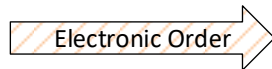


Exchange

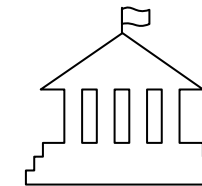
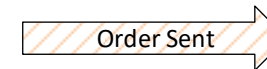
Customer Flow



Non-BD Customer

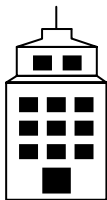


BD

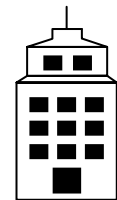
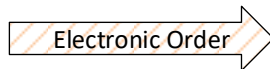


Exchange

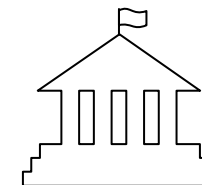
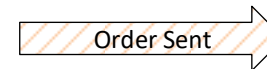
BD Client Flow



BD Client

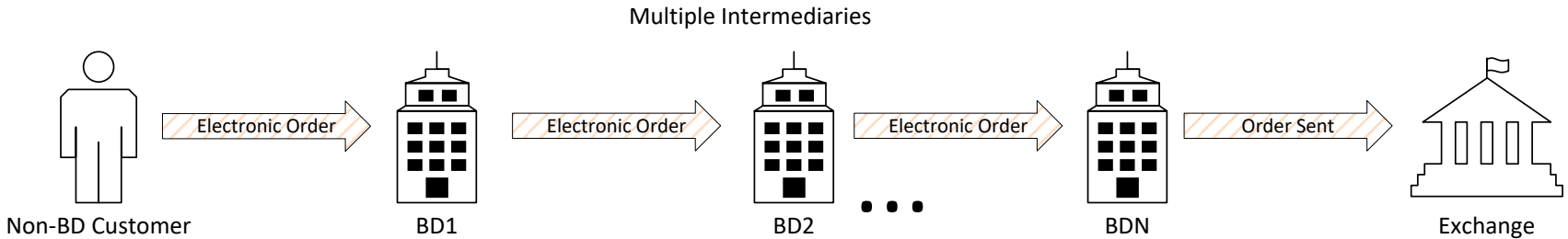
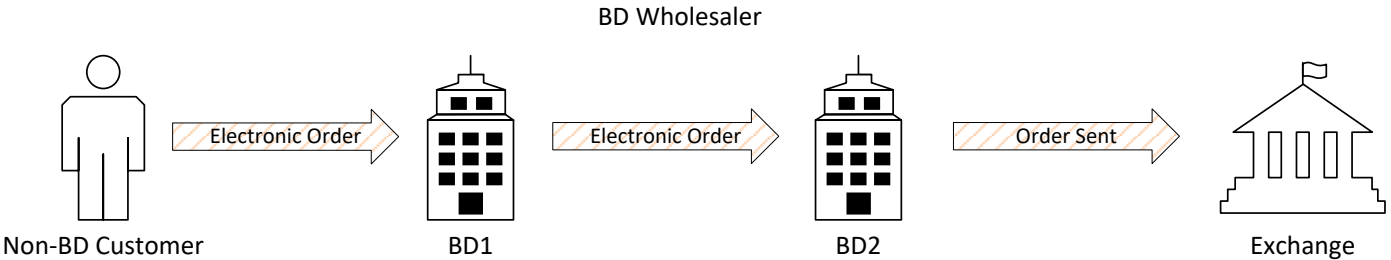


BD



Exchange

# 2b Reportable Electronic Workflows



## Linkages in Phase 2b (1/2)

- In Phase 2b, the reporting of an electronic single option order (received or routed electronically) may result in unlinked events within a single CAT Reporter to the extent that related events are not yet reportable to CAT. To address these expected unlinked events, two fields (priorUnlinked and nextUnlinked) are used.
- The purpose of these fields is to identify that the immediately preceding or following event is not reportable in Phase 2b and is not present for linkage. An immediately preceding or following event may be a manual event, complex order event, or a paired order. The priorUnlinked and nextUnlinked fields have values to indicate why the immediately preceding or following event is not present.

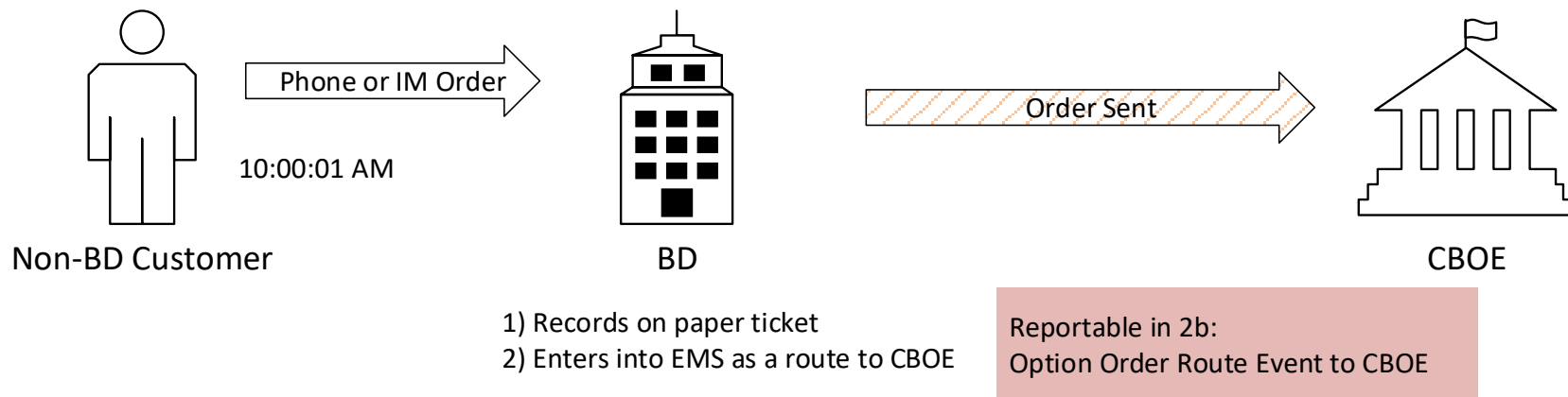
## Linkages in Phase 2b (2/2)

Field Name	Values	
<b>nextUnlinked</b>	M	Next Manual
	C	Next Complex
	P	Next Paired
	Blank	Not Applicable
<b>priorUnlinked</b>	M	Prior Manual
	C	Prior Complex
	Blank	Not Applicable

One or both of these fields will be on all options event types as conditional. If an event does not have this field populated, linkage will be attempted.

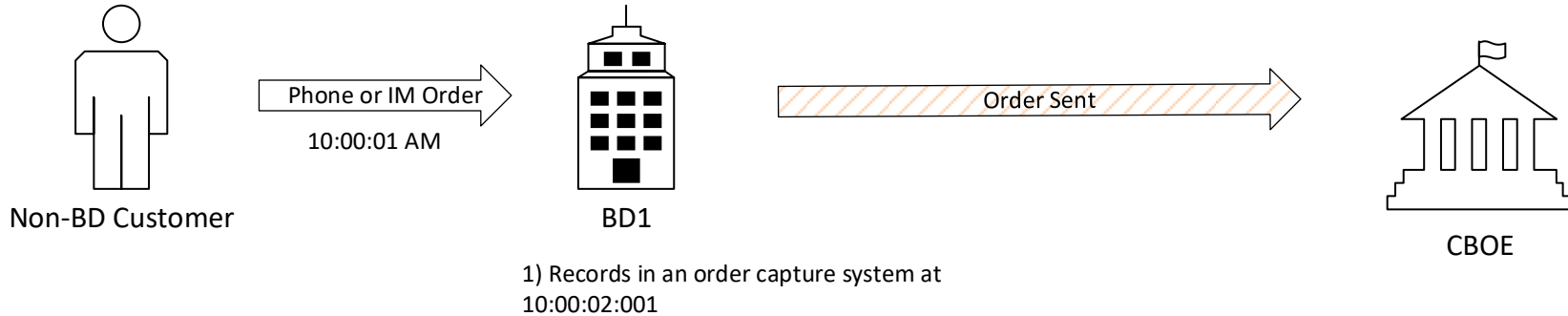


# Manual and Electronic Order Mix: Paper Ticket



Report a route report with the Prior Unlinked Indicator = M

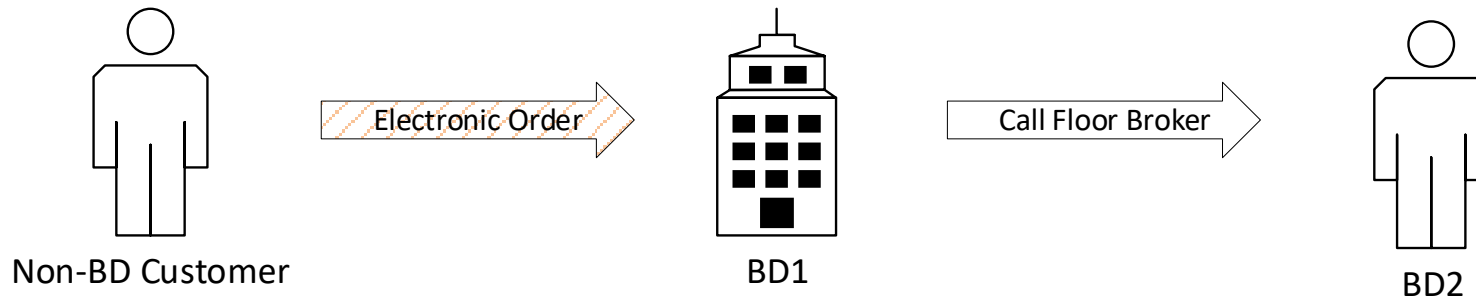
# Manual and Electronic Order Mix: Order Capture System



Reportable in 2b:  
Option Order Route Event to CBOE

Report a route report with the Prior Unlinked Indicator = M

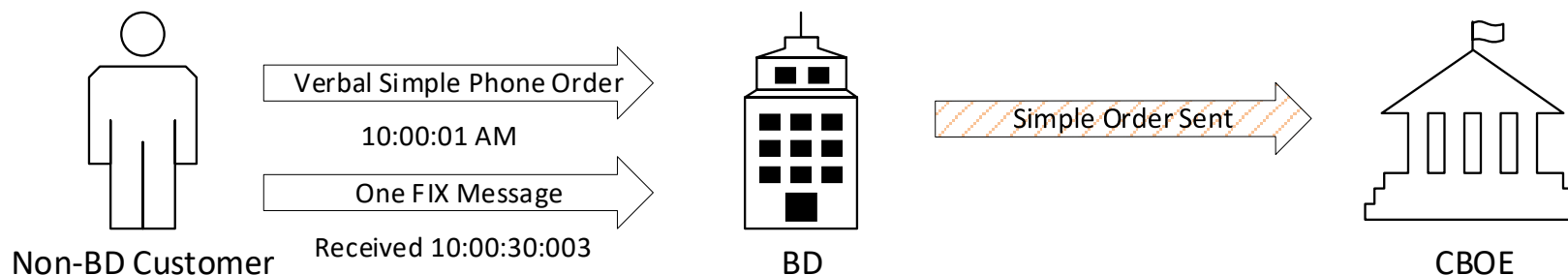
# Manual and Electronic Order Mix: Order Electronically Received Manually Executed



Reportable in 2b:  
New Option Order Event

Report a new order with the Next Unlinked Indicator = M

# Manual and Electronic Order Mix: Phone + FIX Message

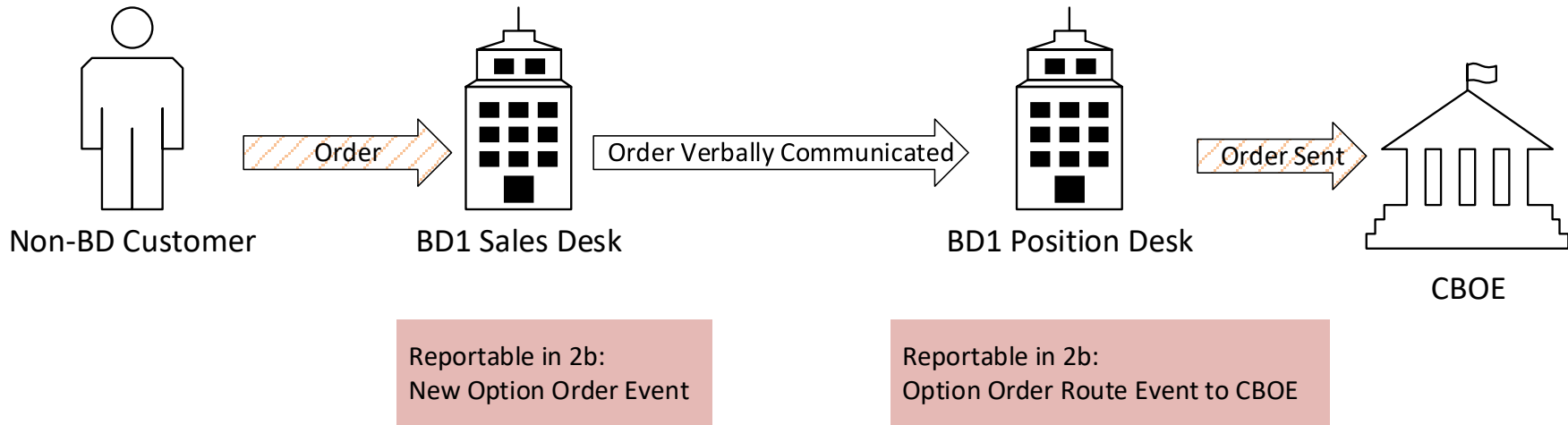


Note: because the order was initially received verbally, this order is out of scope for 2b

Reportable in 2b:  
Option Order Route Event to  
CBOE

Report a route report with the Prior Unlinked Indicator = M

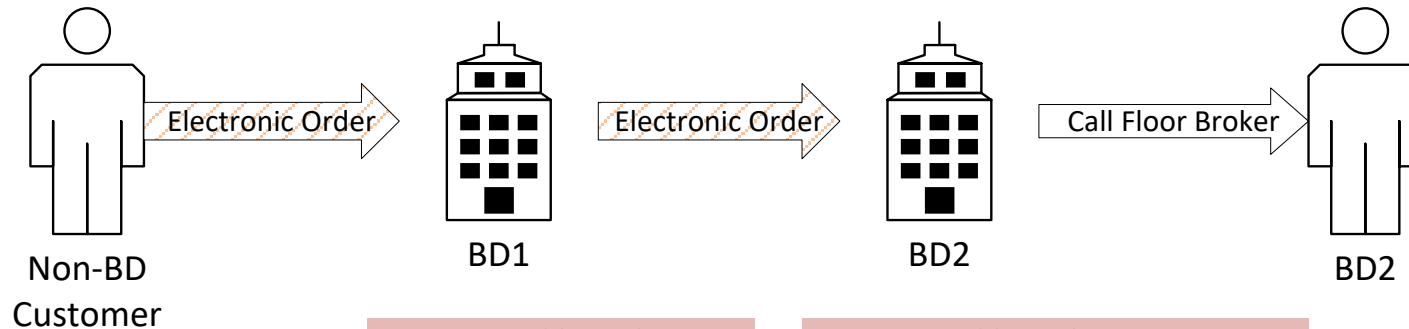
# Manual and Electronic Order Mix: Electronic Order with Manual Handling



Report a new order with a Next Unlinked Indicator = M

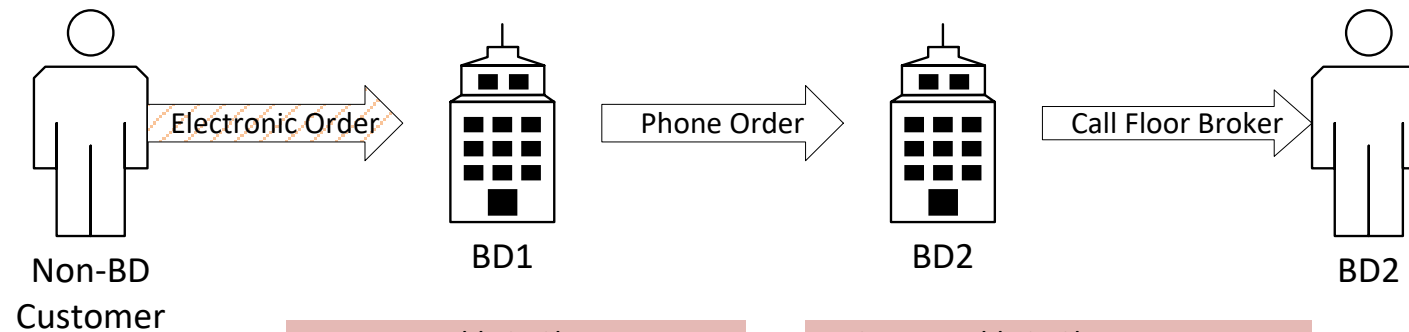
Report a route report with the Prior Unlinked Indicator = M

# Manual and Electronic Order Mix : Order Electronically Received, Manually Executed



BD1 Reportable in 2b:  
New Option Order Event  
Option Order Route Event

BD2 Reportable in 2b:  
Option Order Accepted Event with  
Next Unlinked Indicator = M

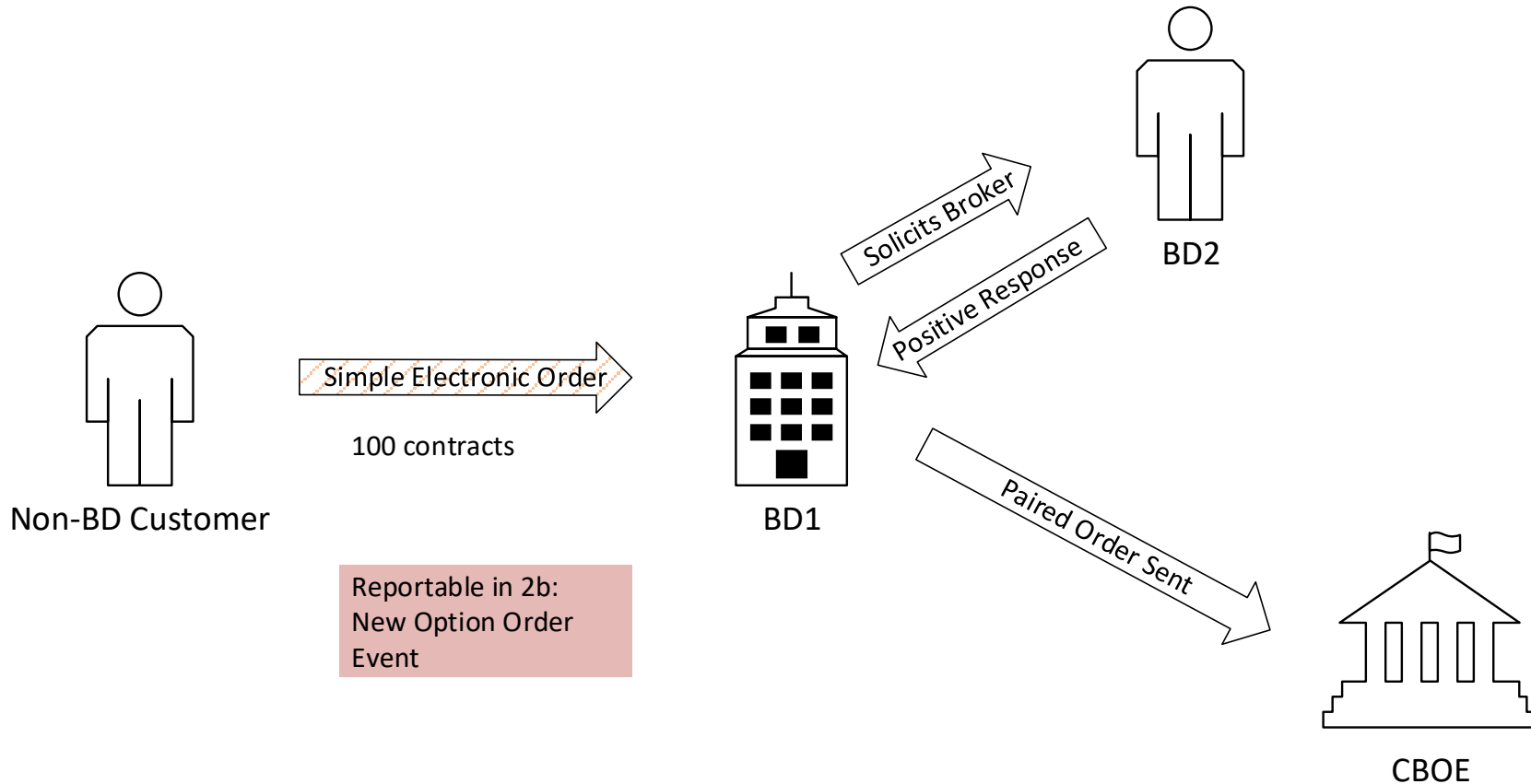


BD1 Reportable in 2b:  
New Option Order Event  
With Next Unlinked Indicator = M

BD2 Reportable in 2b:  
Nothing: Option Order Accepted  
Event and Route Event are manual

# Paired Option Orders: BD1 solicits BD2

If BD1 receives a simple electronic order and then solicits other brokers, and obtains the other side, then it sends a paired order to CBOE.

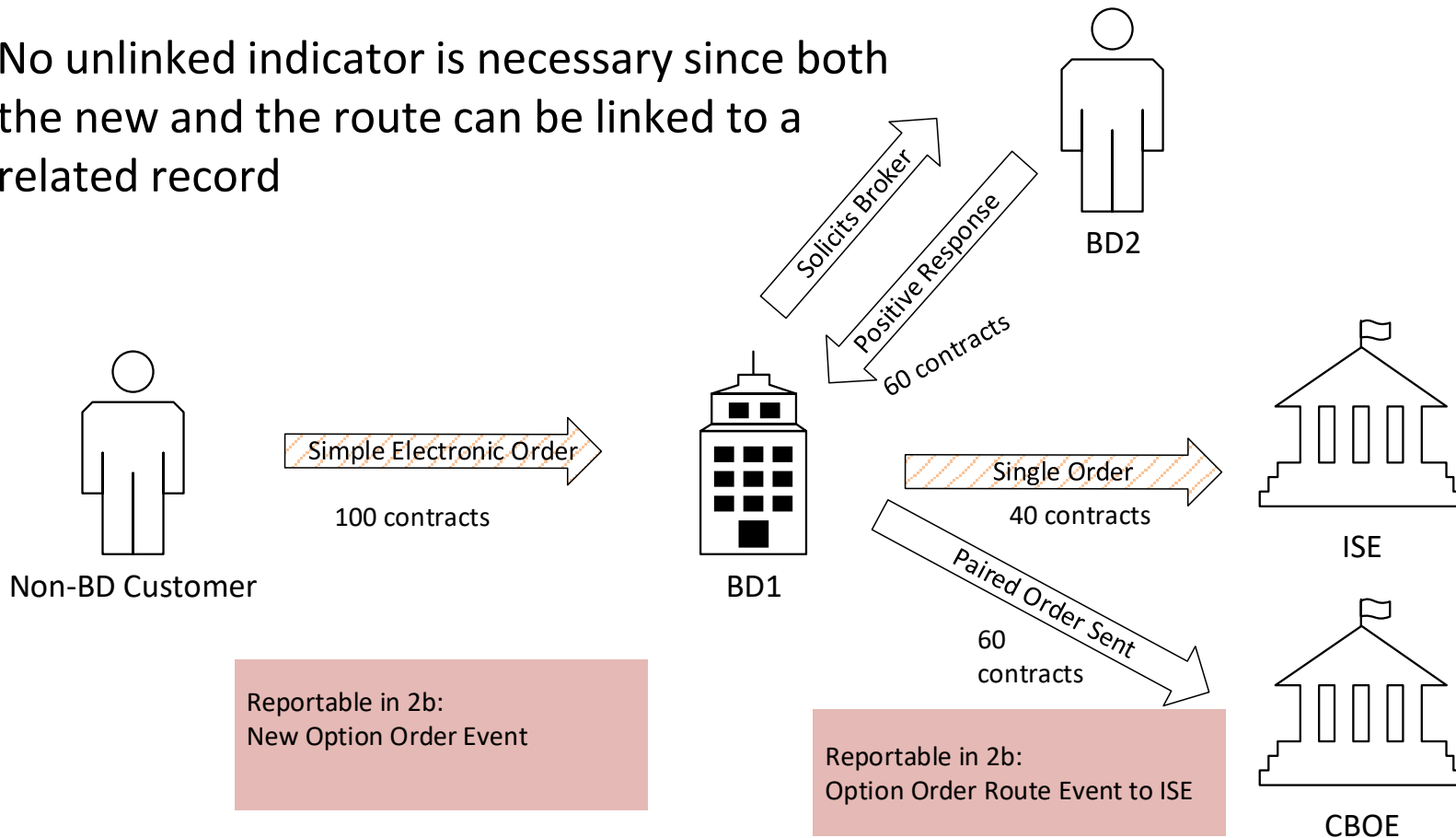


Report a new order with the Next Unlinked Indicator = P

# Paired Option: BD solicits and routes

A BD1 receives a simple electronic order for 100 contracts and then takes the other side for 60 contracts, by sending a paired order to CBOE and routing the remaining 40 contracts to ISE.

No unlinked indicator is necessary since both the new and the route can be linked to a related record



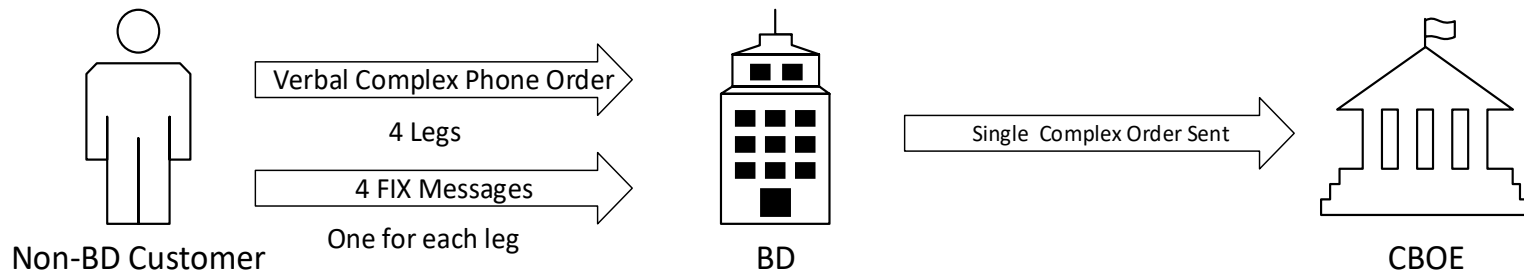
Industry Member Reporting Scenarios Reference Number: **Section 3.5.7**



# Complex Order represented as Individual Legs in 2b

- In the special circumstance of an Industry Member sending (receiving) a complex order electronically as individual legs of the complex orders, the individual legs are not required to be reported in Phase 2b.
- However, if an Industry Member elects to voluntarily report them, the Industry Member must populate the handlingInstructions field with 'CMPX' to indicate that the order (route) is part of a complex option order in Phase 2b.
- In addition, such voluntarily reported single leg orders must include a priorUnlinked or nextUnlinked flag of 'C', as applicable, to indicate that they will not link to a related order at the sending (receiving) firm.

# Manual and Electronic Order Mix: Verbal Complex Order

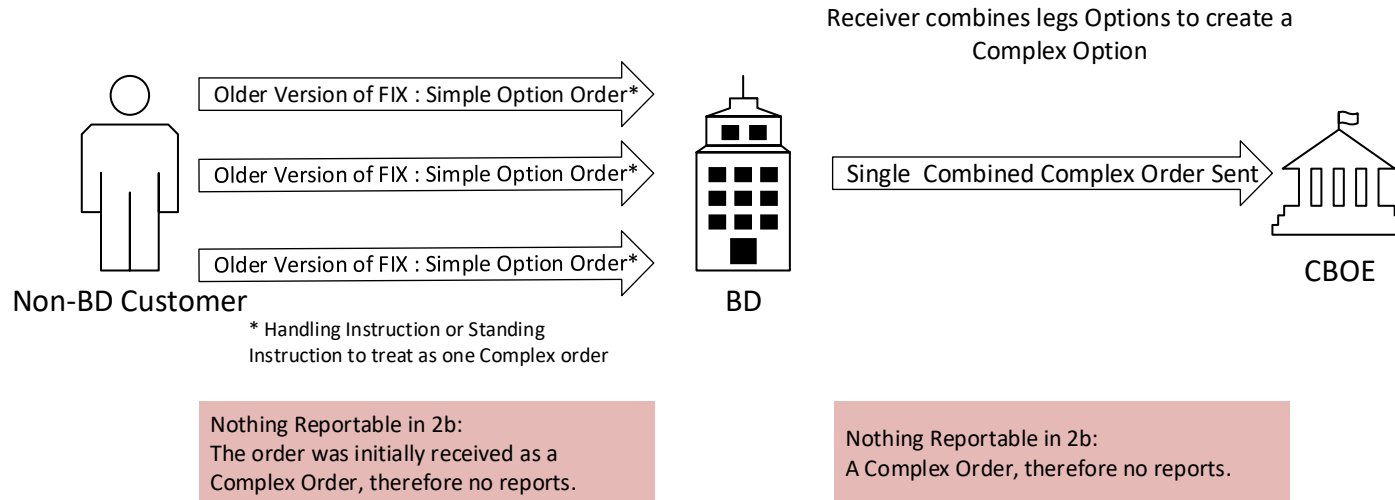


1) Customer verbally places an order for a complex order with 4 legs, but his system can only support sending simple option orders

Reportable in 2b:  
Nothing because only simple orders in this phase and the order was initially received from the customer as a complex order

If voluntarily reporting the individual legs: Report four new orders with the handling Instructions field with 'CMPX' and a next Unlinked flag of 'C'

# Complex Order sent electronically as single orders, but with instructions to treat as Complex

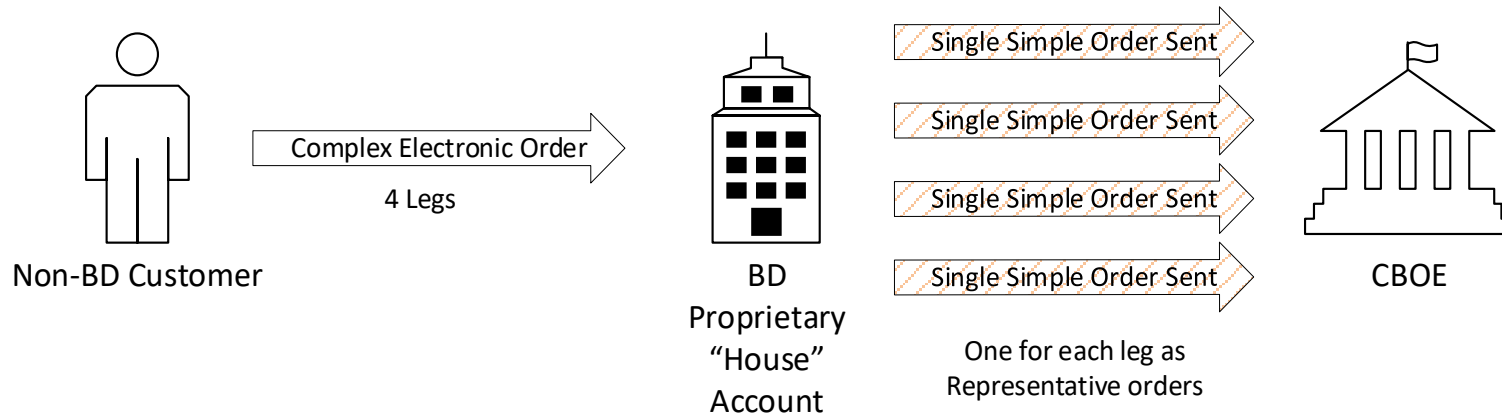


If voluntarily reporting the individual legs: Report three new orders with the handling Instructions field with 'CMPX' and a next Unlinked flag of 'C'

# Representative Orders in Phase 2b

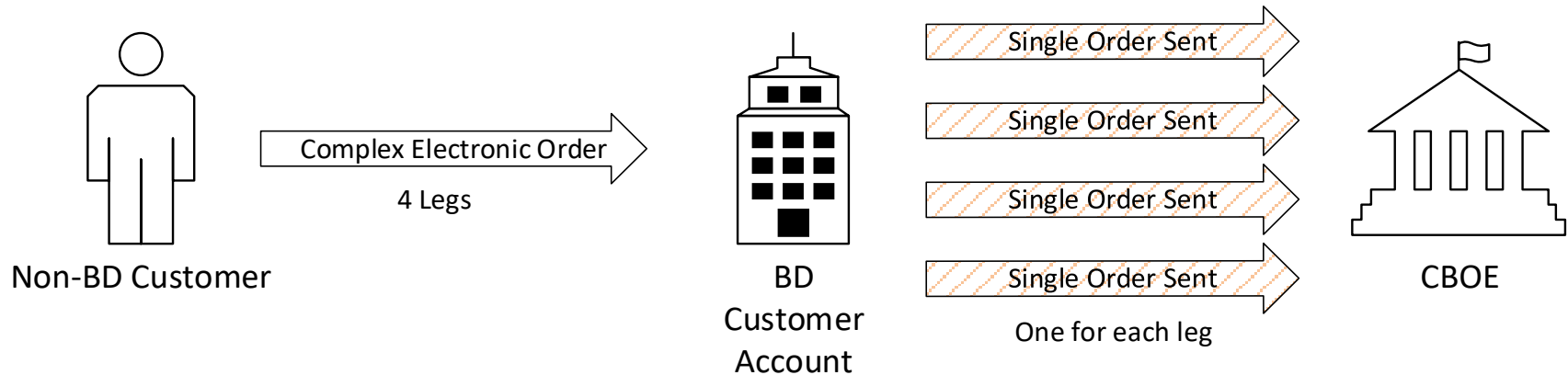
- Representative orders will be treated in the same way as equity representative orders with respect to phasing. Specifically, the only representative order linkages required in 2b would mirror the requirements for 2a representative order linkages.
- The same representative order flags and order fulfillment flags will be used for options and equities.
- Specifically, in Phase 2b, representative orders and linkage to the represented order is required for simple, electronic orders between the representative street-side order and the customer or client order being represented, when the representative order was originated specifically to represent a single customer/client order and there is:
  - An existing, direct electronic link in the Industry Member's system between the order being represented and the representative order, and
  - Any resulting executions are immediately and automatically applied to the represented order in the Industry Member's system.
  - Any portion of a specific order handling scenario that involves a complex or paired order is not reportable until Phase 2d.
- Any scenario that does not meet the definition of Phase 2b representative order will fall into Phase 2d, including any scenario involving a manual or complex order.

# Complex Order Split into Individual Legs to be Worked in a House Account



Reportable in 2b:  
4 New Options Order Events as Representative orders with representativeFlag = YF (Rep oder, linkage required in future phase) and no aggregated order IDs provided  
4 Option Order Route Events for the Representative Orders

# Complex Order Split into Individual Legs to be Worked in a Customer Account



In Phase 2b, these are not linked to the complex order which is not reported. In Phase 2d, the reporting on this will change requiring the single orders to include the complex order ID from the customer order

Reportable in 2b:  
4 Option Order Route Events

## Report an Order Route with the Prior Unlinked Indicator = C

Industry Member Reporting Scenarios Reference Number: **Section 3.5.4**

# Origin Code

“Origin Code” will be added to New Order events.

Values	Description
C	Customer
PC	Professional Customer
F	Proprietary Account of the broker-dealer that is not a market making account
P	Market Making Account

# Upcoming Activities and Events

## Initial In-person discussions

- New York – Anticipated last week of November 2018
- Chicago – Anticipated first week of December 2018

## Follow-up In-person discussions

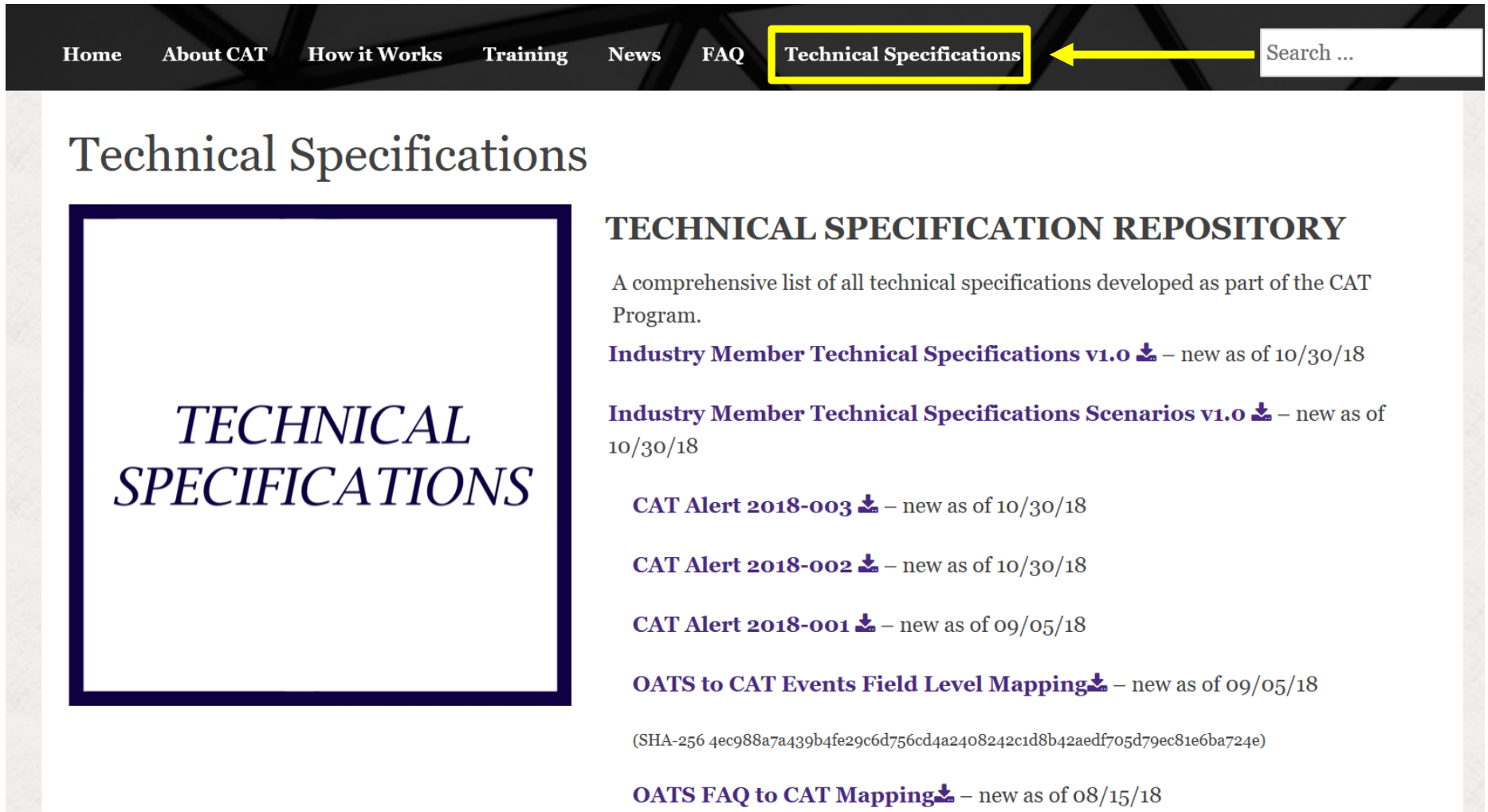
- Thursday, November 29, 2018 – 1221 Avenue of the Americas, New York, NY 10020  
– 4:15PM-5:30PM – [Registration Link](#)
- Tuesday, December 4, 2018 – 400 S LaSalle St., Chicago, IL 60605  
– 4:15PM-5:30PM – [Registration Link](#)
- Tuesday, January 29, 2019 – New York, NY, 10112  
– 4:15PM-5:30PM – [Registration Link](#)
- Thursday January 31, 2019 – Chicago, IL 60605  
– 4:15PM-5:30PM – [Registration Link](#)



# **CAT NMS Informational Resources**

# Accessing Technical Specifications/Scenarios on the CAT Website

- The below snapshot illustrates how to access the Tech Specs through the CAT NMS website




The screenshot shows the CAT NMS website navigation bar with the following items: Home, About CAT, How it Works, Training, News, FAQ, and Technical Specifications. The 'Technical Specifications' item is highlighted with a yellow box and a yellow arrow pointing to it from the right. To the right of the navigation bar is a search box labeled 'Search ...'.


## Technical Specifications


*TECHNICAL  
SPECIFICATIONS*


### TECHNICAL SPECIFICATION REPOSITORY


A comprehensive list of all technical specifications developed as part of the CAT Program.


**Industry Member Technical Specifications v1.0**  – new as of 10/30/18

**Industry Member Technical Specifications Scenarios v1.0**  – new as of 10/30/18


**CAT Alert 2018-003**  – new as of 10/30/18

**CAT Alert 2018-002**  – new as of 10/30/18

**CAT Alert 2018-001**  – new as of 09/05/18

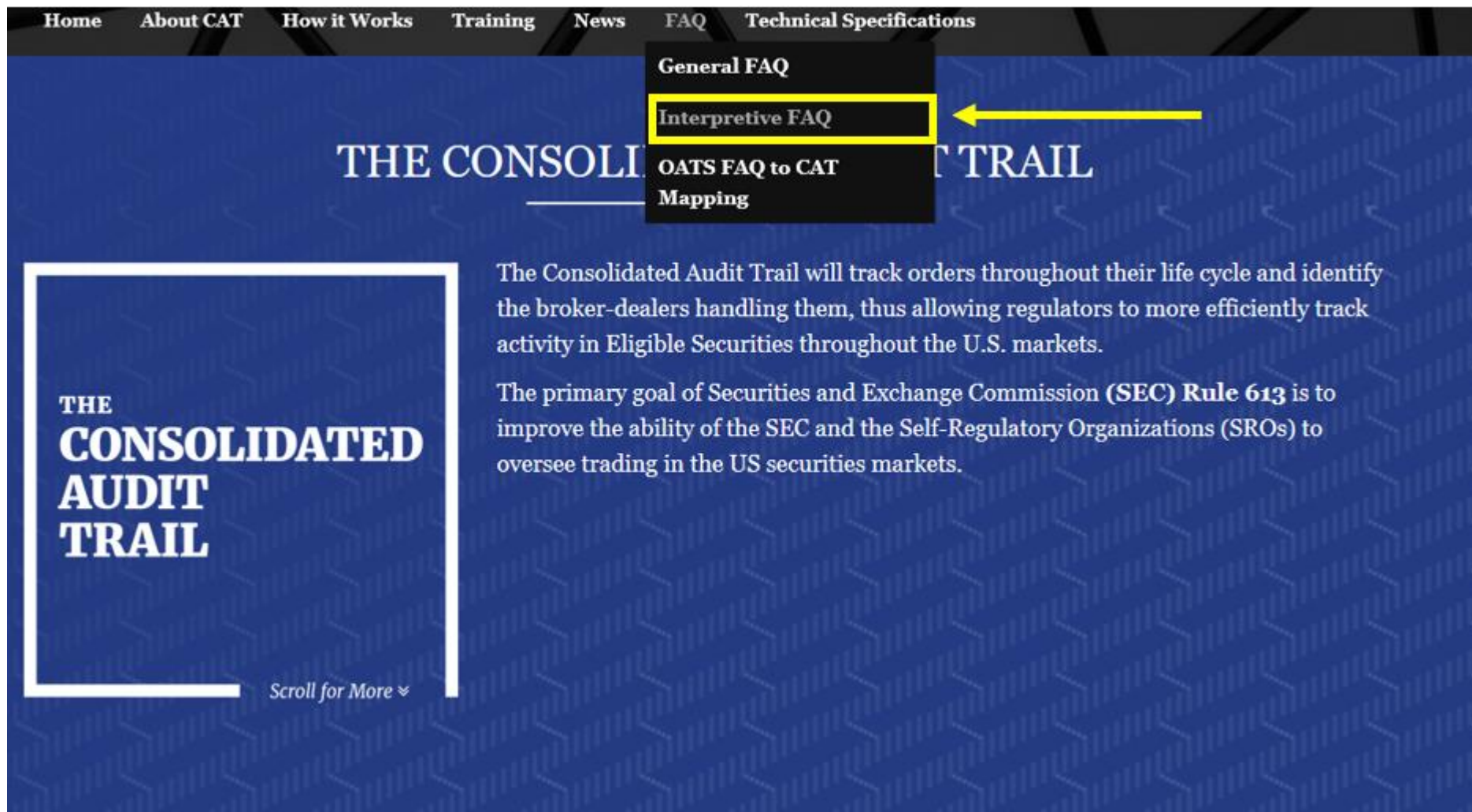
**OATS to CAT Events Field Level Mapping**  – new as of 09/05/18

(SHA-256 4ec988a7a439b4fe29c6d756cd4a2408242c1d8b42aedf705d79ec81e6ba724e)

**OATS FAQ to CAT Mapping**  – new as of 08/15/18

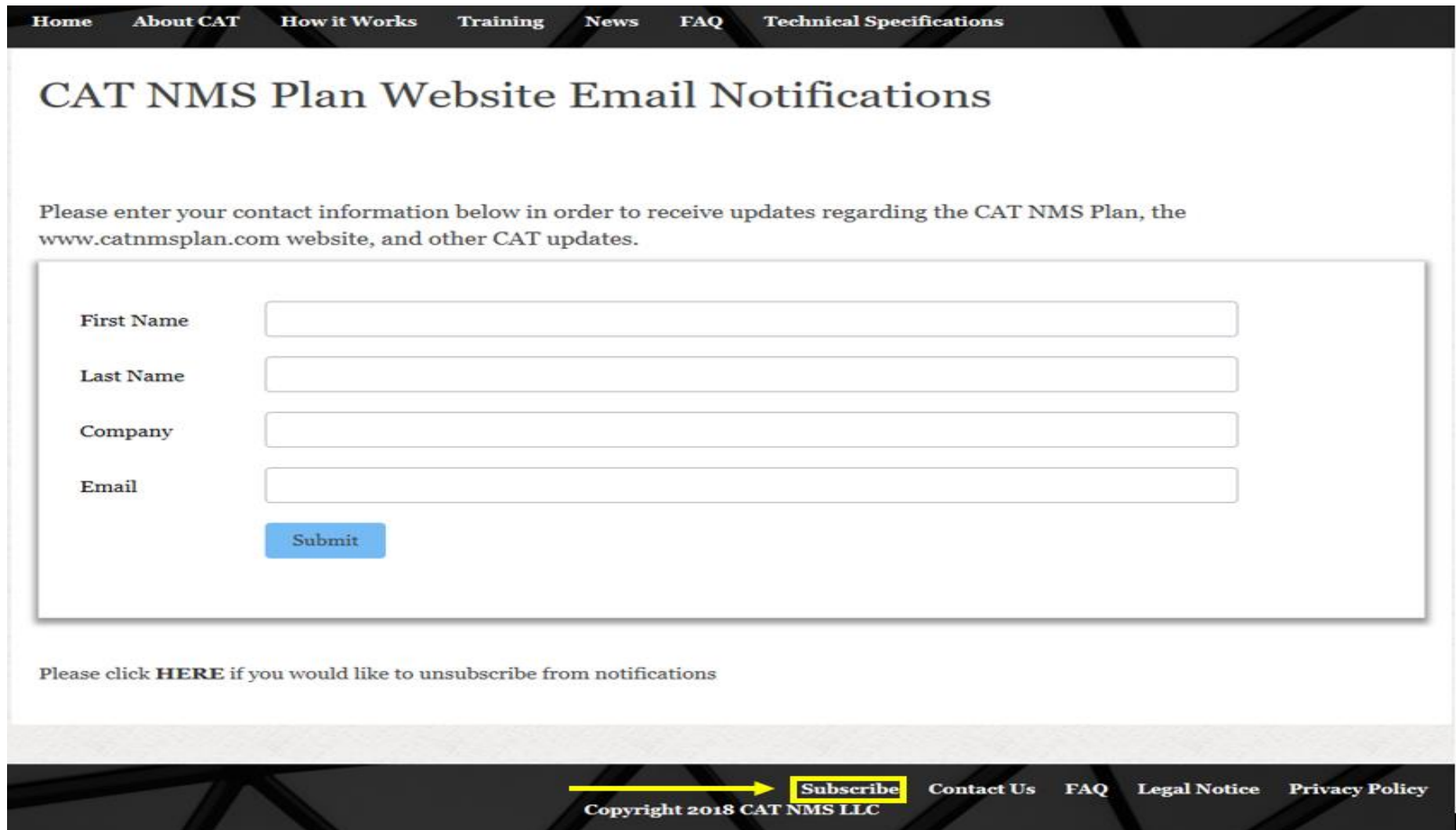
# Accessing Interpretive FAQs on the CAT NMS Website

- The below snapshot illustrates how to access the interpretive FAQs through the CAT NMS website



# CAT NMS Plan Website Subscription

- The CAT NMS website ([www.catnmsplan.com](http://www.catnmsplan.com)) has launched a subscription feature to receive periodic updates regarding CAT implementation



The screenshot shows the 'CAT NMS Plan Website Email Notifications' form. At the top, there is a navigation bar with links: Home, About CAT, How it Works, Training, News, FAQ, and Technical Specifications. Below the navigation bar is the title 'CAT NMS Plan Website Email Notifications'. A paragraph of text reads: 'Please enter your contact information below in order to receive updates regarding the CAT NMS Plan, the www.catnmsplan.com website, and other CAT updates.' The form contains four input fields: 'First Name', 'Last Name', 'Company', and 'Email'. A blue 'Submit' button is located below the 'Email' field. At the bottom of the form area, there is a link: 'Please click **HERE** if you would like to unsubscribe from notifications'. The footer of the page contains a copyright notice 'Copyright 2018 CAT NMS LLC' and a navigation bar with links: 'Subscribe', 'Contact Us', 'FAQ', 'Legal Notice', and 'Privacy Policy'. A yellow arrow points to the 'Subscribe' link.

Home About CAT How it Works Training News FAQ Technical Specifications

## CAT NMS Plan Website Email Notifications

Please enter your contact information below in order to receive updates regarding the CAT NMS Plan, the [www.catnmsplan.com](http://www.catnmsplan.com) website, and other CAT updates.

First Name

Last Name

Company

Email

Please click **HERE** if you would like to unsubscribe from notifications

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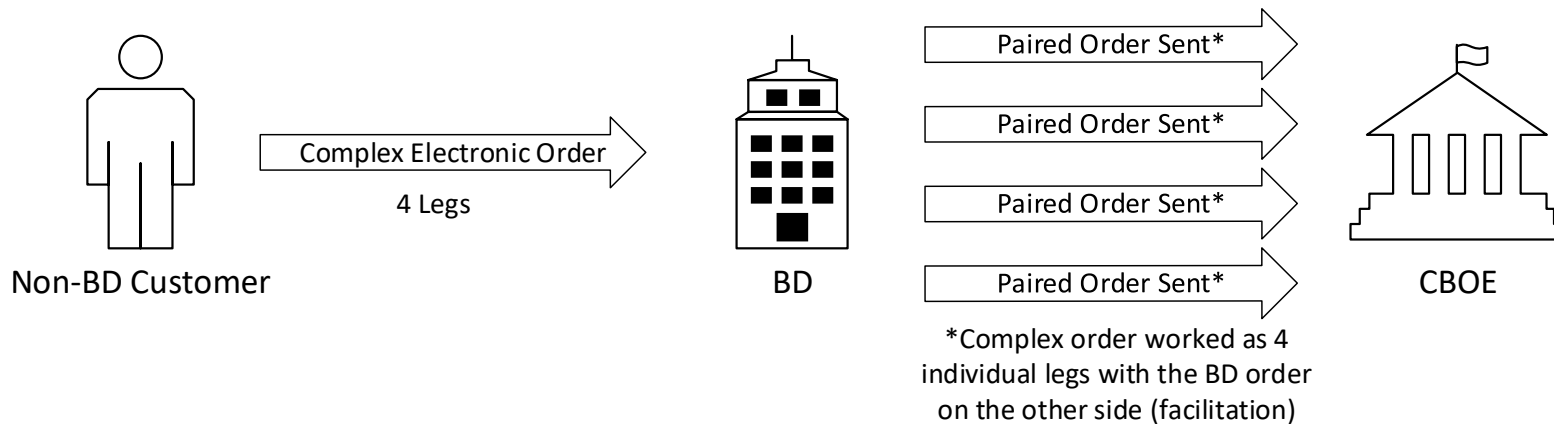
# CAT Help Desk

- The CAT help desk is now live and can be reached in the following ways:
  - **Email Address:** [helpdesk@thesyscat.com](mailto:helpdesk@thesyscat.com)
  - **Phone Number:** (833) CAT-SERV or (833) 228-7378
  - **Hours of Operation:** 9AM-5PM Eastern Time (Weekdays only)
- Currently, the help desk is available to address general questions relating to the following topics:
  - CAT NMS website
  - Media relations
  - Go-live dates
  - Technical Specifications (e.g., publication schedule)
  - CAT users
  - System security
- For additional information please visit the CAT NMS website ([www.catnmsplan.com](http://www.catnmsplan.com))

**Questions?**

# **Additional Workflow Examples Not Covered During Nov 8 Call**

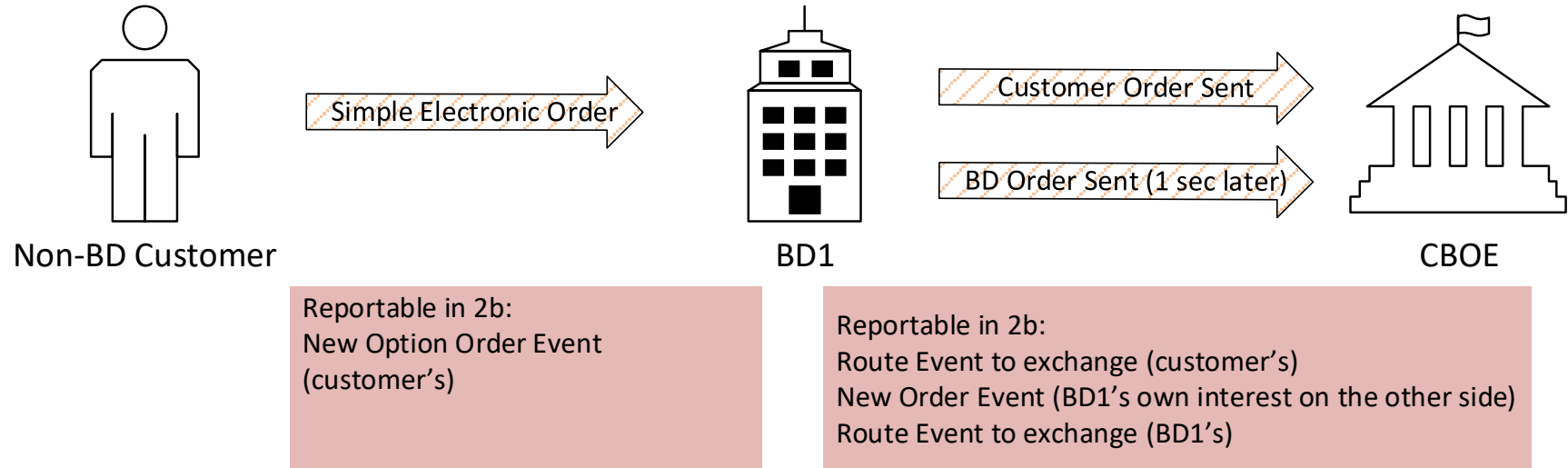
# Complex Order Split into Individual Legs which are each facilitated by the BD



Nothing Reportable in 2a:  
Paired orders are not reportable until Phase 2d

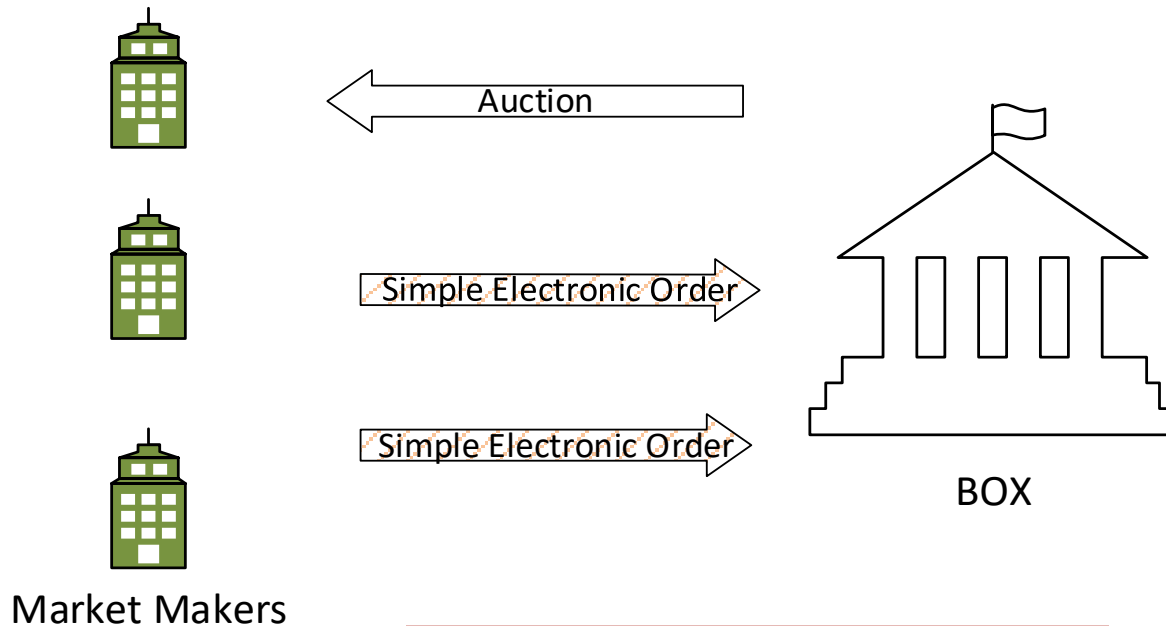


# “Post and Facilitate”



# Responses to Auctions

- Responses to auctions of simple orders and auctions of paired simple orders are reportable in Phase 2b, with a Handling Instruction of “AucResp” (new) with the Auction ID provided in the name/value pair
- Responses to auctions of complex orders are reportable in Phase 2d

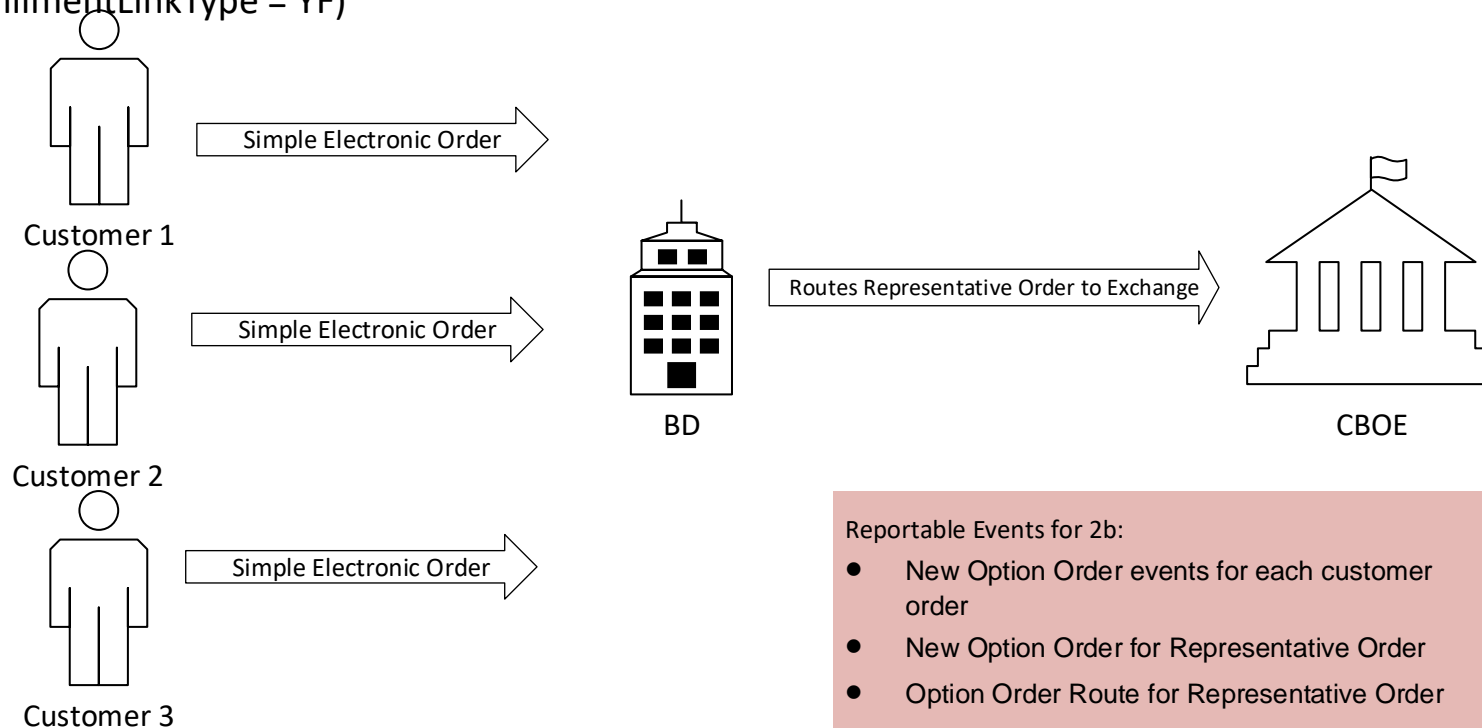


Reportable in 2b:  
New Option Order Event  
Option Order Route Event

# Representative Order Scenarios

Broker 1 receives three customer orders and routes a single (simple) order to an exchange. Required Reports would be:

- New Option Order events for each single leg customer order electronically received
- New Option Order for the representative order representing the individual orders, since this is an aggregation scenario there is no linkage requirement in Phase 2b (representativeInd = YF)
- Option Order Route for the representative order
- Option Order Fulfillment events for each single leg customer order which are one sided in Phase 2b (fulfillmentLinkType = YF)



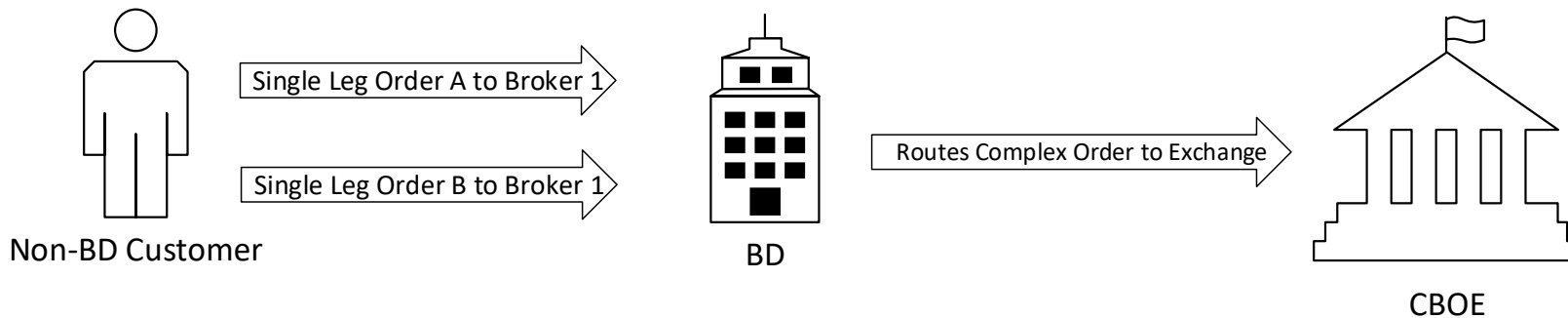
## Reportable Events for 2b:

- New Option Order events for each customer order
- New Option Order for Representative Order
- Option Order Route for Representative Order
- Option Order Fulfillment events

# Representative Order Scenarios

Broker 1 receives two simple orders and combines them into a complex order for routing to an exchange. In 2b Industry Member Broker 1 is required to report the following events:

- New Option Order events for each single leg customer order electronically received
- Option Order Fulfillment events for each single leg customer order post execution of the complex order, one sided in Phase 2b (*fulfillmentLinkType* = YF)



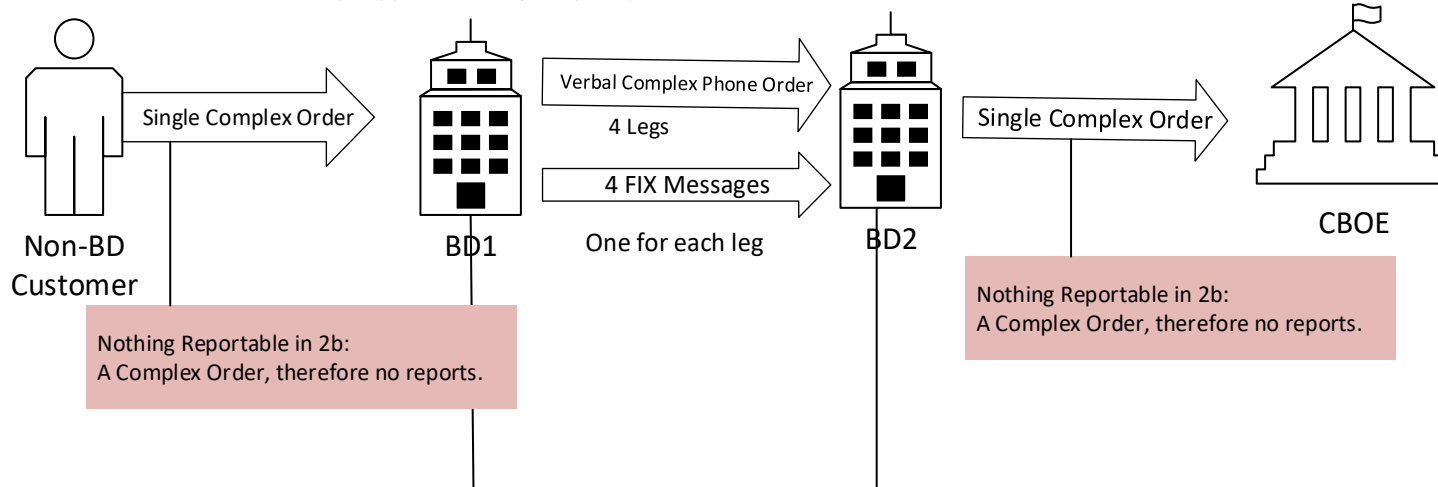
## Reportable Events for 2b:

- New Option Order events for each single leg customer order
- Option Order Fulfillment events for each single leg customer order (*fulfillmentLinkType* = YF)

# Manual and Electronic Order Mix: Verbal Complex Order (option only legs)

1) Customer sends an electronic complex order to BD1

2) BD1 verbally places an order with BD2 for a complex order with 4 legs, but his system can only support sending simple option orders



Nothing Reportable in 2b:  
A Complex Order, therefore no reports.

Nothing Reportable in 2b:  
A Complex Order, therefore no reports.

## BD1 Reportable in 2b:

**Preferred** : Report nothing (suppress the individual legs)

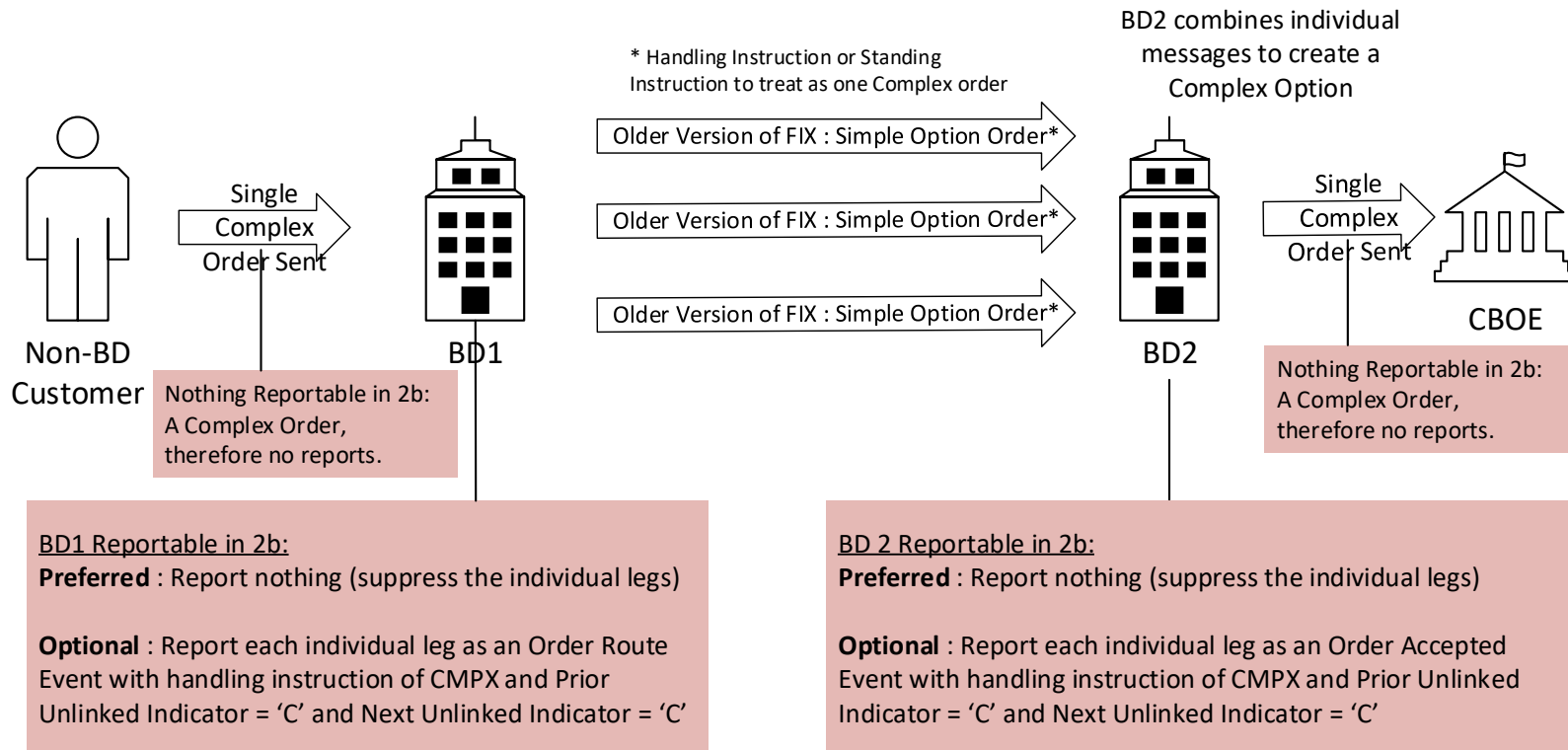
**Optional** : Report each individual leg as an Order Route Event with handling instruction of CMPX and Prior Unlinked Indicator = 'C' and NextUnlinkedFlag = 'C'

## BD2 Reportable in 2b:

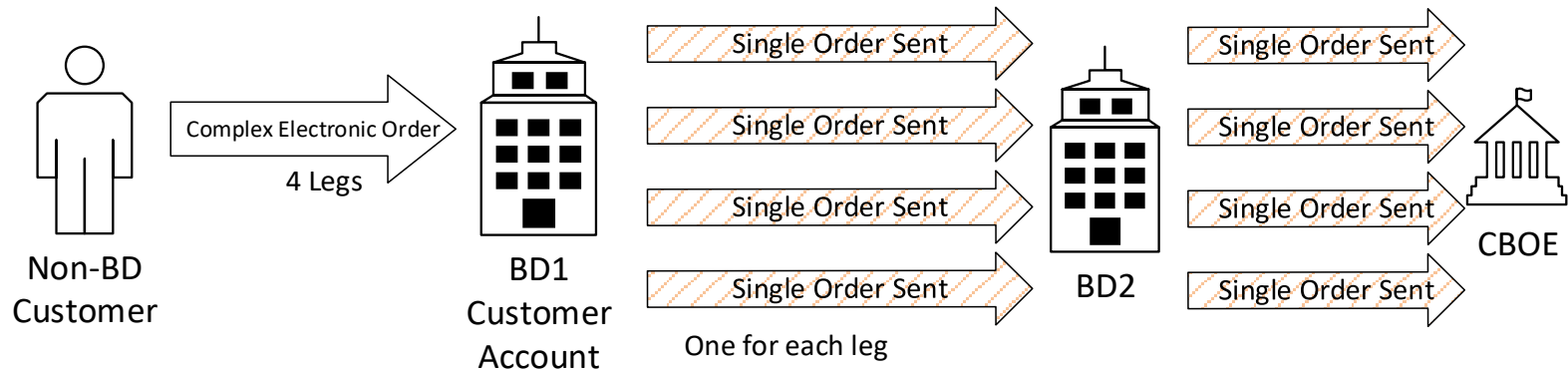
**Preferred** : Report nothing (suppress the individual legs)

**Optional** : Report each individual leg as an Order Accepted Event with handling instruction of CMPX and Prior Unlinked Indicator = 'C' and Next Unlinked Indicator = 'C'

# Complex Order (option only legs) sent electronically as single orders, but with instructions to treat as complex



# Complex Order (Option only legs) Split into Individual Legs to be Worked in a Customer Account



BD1: Reportable in 2b:  
4 Option Order Route Events with  
Prior Unlinked Indicator = C

BD2: Reportable in 2b:  
4 Order Accepted Events  
4 Option Order Route Events

In Phase 2b, these are not linked in any way, In Phase 2d, the reporting on this will change requiring the single orders to include the complex order ID from the customer order