CAT Reporting Technical Specifications for Industry Members

3/5/2021

Version 3.1.0 r11

Table of Contents

Preface

Rule 613 of the Securities Exchange Act of 1934 requires national securities exchanges and national securities associations (“SROs”) to submit a national market system plan to the Securities and Exchange Commission (“Commission” or “SEC”) to create, implement, and maintain a consolidated audit trail (the “CAT”) that would allow regulators to more efficiently and accurately track all activity in U.S. equity and listed options markets. Pursuant to Rule 613, the SROs filed with the Commission the National Market System Plan Governing the Consolidated Audit Trail (“CAT NMS Plan”), which was approved by the Commission on November 15, 2016.

Under Rule 613(g)(2), each member of a national securities exchange or national securities association is required to comply with all the provisions of the CAT NMS Plan. Relatedly, as mandated under Rule 613, the CAT NMS Plan requires each SRO to adopt rules requiring its members to comply with Rule 613 and the CAT NMS Plan, and to agree to enforce compliance by its members in that regard. Accordingly, each SRO has adopted rules requiring its members to comply with Rule 613 and the CAT NMS Plan. See, e.g., FINRA Rule 6800 Series.

The SROs jointly own Consolidated Audit Trail, LLC, which was formed by the SROs to arrange for and oversee the creation, implementation, and maintenance of the CAT as required under Rule 613. Thus, the CAT is a facility of each SRO.

This specification represents a phased approach to industry reporting. Key dates are as noted below. Version 3.1 of this specification reflects finalized Phase 2c reporting requirements based on version 2.2.1 r5. The Participants propose to seek a modification of the requirements of the CAT NMS Plan from the Commission to reflect the phased approach for Industry Member CAT reporting described in these Technical Specifications.

Table 1: Industry Specifications Phased Approach

Phase 2a – Equities Part 1 Go Live 6/22/2020	Phase 2c – Equities Part 2 Go Live 4/26/2021
All events and scenarios covered by OATS	Linkages to the customer order(s) being represented for all representative order scenarios including agency average price, net trading, aggregated orders, OMS-EMS scenarios
All proprietary orders including market maker orders	Marking as a representative order any order originated to work a customer order in price guarantee scenarios, such as a guaranteed VWAP
Firm Designated ID	Rejected External Routes with flag indicating route was not accepted by receiving destination
All street side representative orders (both agency and proprietary)	Linkage of duplicate electronic messages related to a Manual Order Event between the electronic event and the original manual route

Linkage is required between the representative street side order and the order being represented when the representative order was originated specifically to represent a single order (received either from a customer or another broker-dealer) and there is: 1) an existing direct electronic link in the firm's system between the order being represented and the representative order, and 2) any resulting executions are immediately and automatically applied to the represented order in the firm's system	Special Handling instructions on Route Reports (limited to a defined set of values)
	Reporting changes to client instructions regarding modifications to algorithms
	Order Effective Time for orders that are received by an Industry Member and do not become effective until a later time.
Quotes in NMS stocks sent to a national securities exchange or facility of a national securities association (not including verbal quotes until July 2023)	Internal Route modifications and cancels (equities)
Unlisted quotes (OTC Equity Securities) received by a broker-dealer operating an inter-dealer quotation system (e.g., Global OTC, OTC Link) (not including verbal quotes until July 2023)	Responses to RFQs/solicitations through standard electronic messaging integrated with a firm's OMS/EMS (equities)
Unlisted equity quotes that meet the definition of bid or offer under the Plan sent by a broker-dealer to a quotation venue not operated by an SRO or broker-dealer *see above comment on verbal quotes	Allocations (equities)
Electronic and manual capture time for manual orders	All FDIDs with LTIDs for accounts with equity and option CAT Reportable events in Phases 2a, 2b and 2c
OATS guidance regarding firm modifications to previously routed orders (OATS FAQ C35) applies to CAT	

Phase 2b – Options Part 1 Go Live 7/20/2020	Phase 2d – Options Part 2 Go Live, Additional Equities Scope 12/13/2021
Simple options electronic orders, excluding electronic paired orders	Simple options manual orders
	Electronic and manual paired orders
Responses to auctions of simple orders and paired simple orders	All complex orders with linkage to all CAT-reportable legs
Options combined orders must be reported and marked as a combined order. Linkage to the underlying orders is not required to be reported until Phase 2d	Revisit application of OATS guidance to CAT for firm modifications to previously routed orders (OATS FAQ C35) and require reporting in certain instances
	Internal Route modifications and cancels (options)
	Receipt time of cancellation and modification instructions through Order Cancel Request and Order Modification Request events (for options and equities).
	Unlisted quotes sent to an inter-dealer quotation system operated by a CAT Reporter that does not match or execute orders.
	All OTC Link messages reported as orders
	Responses to RFQs/solicitations through standard electronic messaging integrated with a firm's OMS/EMS (options)
	Linkage between an options combined order and the original customer orders

	Allocations (options)
	All FDIDs with LTIDs for accounts with options CAT Reportable events in Phase 2d
	Quote ID associated with Trade Events. *assumes exemptive relief request until Phase 2d is granted

Phase 2e – 7/11/2022
Remainder of Customer and Account information

Executive Summary

This document describes the requirements for the reporting of data to CAT by Industry Members, including detailed information about data elements and file formats of each Reportable Event. It also describes how Industry Members submit files to CAT, including access instructions, network and transport options, and testing requirements. This document illustrates the reporting requirements for Phase 2c. Refer to the Phase 2d Industry Member Technical Specifications Documents for Phase 2d reporting requirements.

A separate companion document containing detailed reporting scenarios entitled CAT Industry Member Reporting Scenarios should be used as a guide for determining how the event types and field values laid out in this document must be applied when reporting various order handling and execution scenarios for both equities and options.

An archived version of Table 2: Revision / Change Process detailing changes to previous versions of this document is available at www.catnmsplan.com.

Table 2: Revision / Change Process

Version	Date	Author	Description
3.0 Draft 1	11/4/19	Consolidated Audit Trail, LLC	Initial publication for Phase 2c. Applicable Schema Version: 3.0.0 Removed language regarding Phase 2a/2c reporting requirements. Ungreyed fields and values required to be reported in Phase 2c. Defined event specifications for MEIM and MEIC events. Deferred MEMR and MECR events to Phase 2d.
3.0 Draft 2	12/9/19	Consolidated Audit Trail, LLC	Applicable Schema Version: 3.0.0 Made conforming changes with v2.2.1 r2 Defined event specifications for MEPA and MEAA events, defined allocation keys, added new fields to Data Dictionary. Added new MEOCR and MEOMR events. Added *timeInForce* field to MEOJ. Added *handlingInstructions* value ‘RQR’. Changed *orderID* uniqueness requirements on MEIR events. Changed *handlingInstructions* value ‘STOP’ to ‘STOPP’ and added ‘STOPQ’. Changed the definition of *deptType* values ‘A’ and ‘O’. Clarified the definition of *handlingInstructions* values ‘ALG’ and ‘RAR’. Updated existing scenarios and added new scenarios in

Version	Date	Author	Description
			Appendix C. Updated the definition of Primary Event and Secondary Event in the Glossary to include newly defined events.
3.0.0	1/31/2020	Consolidated Audit Trail, LLC	Applicable Schema Version: 3.0.0 Made conforming changes with v2.2.1 r3 Updated Table 1 Added MEORS event. Greyed out MEOCR and MEOMR, events for Phase 2d. Changed the definition of *eventTimestamp* for MEOC, MEOCR, MEOM and MEOMR events. Changed requirements for *quoteID* on MEOT event. Updated quote linkage keys and added IDQS linkage key. Added *quotingIDQS* field to MEOT event to support IDQS linkage. Greyed out *receivedQuoteID* on MEQR event for Phase 2d. Added *unpricedInd* on MEQR event. Reintroduced *reportingExceptionCode* value ‘C’ and updated requirements for use. Added *clearingFirm* and *counterparty* fields to MEOT event. Clarified requirements for reporting allocation events in section 3.3.1. Changed the definition for the *eventTimestamp* and *newOrderFDID* fields in allocation events. Added *allocationInstructionTime* to allocation events and Data Dictionary. Added *allocationType* value ‘FRM’, removed *allocationType* values ‘REG’ and ‘OTH’ Greyed out the *custType* field for Phase 2d. Defined “Smart Order Router” in the Glossary. Updated definition of *handlingInstructions* value ‘ALG’. Changed *orderID* uniqueness requirements on MEIR events. Ungreyed error codes that will become effective in Phase 2c. Removed *handlingInstructions* value ‘RQR’. Updated section 4.11 noting requirements for reporting responses to RFQs.
3.1.0	2/28/20	Consolidated Audit Trail, LLC	Applicable Schema Version: 3.1.0 Added section 3.4 Responses to RFQs and Solicitation. Added *solicitationFlag* to MENO and MEOA events to support responses to RFQs and solicitation. Added *RFQID* to MENO event to support responses to RFQs and solicitation. Removed *handlingInstructions* value of ‘SR’. Corrected *unpricedInd* in MEQR event to a required field. Corrected *correspondentCRD* and *newOrderFDID* fields in

Version	Date	Author	Description
			MEPA and MEAA events to conditional fields. Updated intro language in Sections 4.7.1, 4.10.1, and 4.11. Updated intro language in Appendix E.
3.1.0 r1	4/2/20	Consolidated Audit Trail, LLC	Applicable Schema Version: 3.1.0 Updated Appendix E with new error codes applicable to Phase 2c. Updated Appendix D with the definition of Allocation Key Date. Updated requirements in Table 80 of Appendix C. Clarified requirements for populating *quotingIDQS* and *RFQID* fields. Added *quotingIDQS* to data dictionary. Corrected a reference error in section 7.6.
3.1.0 r2	4/21/20	Consolidated Audit Trail, LLC	Applicable Schema Version: 3.1.0 Made conforming changes with v2.2.1 r4. Corrected sequence numbers in MEOMR event. Corrected release date for v3.1.0 r1 in the change log.
3.1.0 r3	5/18/20	Consolidated Audit Trail, LLC	Applicable Schema Version: 3.1.0 Made conforming changes with v2.2.1 r5.
3.1.0 r4	6/14/2020	Consolidated Audit Trail, LLC	Applicable Schema Version: 3.1.0 Made conforming changes with v2.2.1 r6 Added MEOFS and MEOE events Removed *handlingInstructions* value 'OET' Removed *handlingInstructions* value 'STOPP' and 'STOPQ' and added 'STOP' (reverted changes from v3.0.0 Draft 2). Added *handlingInstructions* value 'SWQ' Updated requirements for MEORS event and added *manualFlag* field, updated field positions. Added *fulfillmentLinkType* value 'YS' Added *representativeInd* value 'OS' Added *allocationType* value 'OTH' Updated Appendix C to add new values and further clarify existing guidance. Updated guidance for reporting Amended Allocation events. Updated the *eventTimestamp* definition in other modification/cancellation events (e.g. MECOC, MEIM) to be consistent with the definition in the MEOC and MEOM events.
3.1.0 r5	8/11/20	Consolidated Audit Trail, LLC	Applicable Schema Version: 3.1.0 Added back *handlingInstructions* value 'SR' for options only Changed requirements for *RFQID* field Updated error code 2187 Added Table 11 to clarify reporting responsibilities of Responders and Solicitors

Version	Date	Author	Description
3.1.0 r6	9/9/20	Consolidated Audit Trail, LLC	Applicable Schema Version: 3.1.0 Conforming changes with v2.2.1 r7 Updated requirements for reporting an Allocation Amendment event Changed *orderType* field on MEOE event to Required.
3.1.0 r7	11/6/20	Consolidated Audit Trail, LLC	Applicable Schema Version: 3.1.0 Conforming Changes: Conforming changes with v2.2.1 r8 – refer to v2.2.1 r8 change log Corrected fields in MEOMR and MEOCR event in accordance with previous 2d spec publications. Changes applicable beginning in Phase 2c: Added triggerPrice field to MEOE event Added new *allocationType* values 'CUSF' and 'DVPF' Updated/clarified definition of *allocationType* values 'STO' and 'OTH' Added Section 2.4.1.4 and clarified Section 2.4.1.2 for populating IMID fields when linking to Quote events Clarified reporting guidance for Amended Allocation events. Added references to FAQ U19 to *DVPCustodianID* field descriptions. Corrected description of *handlingInstructions* field in Data Dictionary Clarified *routeRejectedFlag* values in Section 2.6.3.5 and the Data Dictionary
3.1.0 r8	12/4/20	Consolidated Audit Trail, LLC	Applicable Schema Version: 3.1.0 Conforming Changes: Conforming changes with v2.2.1 r9 – refer to v2.2.1 r9 change log Updated Table 6 (conforming changes with v4.0.0 r4) Changes applicable beginning in Phase 2c: Deferred *quoteID*, *quoteKeyDate*, and *quotingIDQS* fields on MEOT event until Phase 2d Changed *timeInForce* value 'GTX' to Name/Value Pair Changed *destination, senderIMID* and *routedQuoteID* fields on MENQ event from conditional to required Removed *representativeInd* 'OS' from Data Dictionary for Phase 2c only (will remain in 2d spec) Removed *deptType* field from MEOE event Clarified requirements for *unpricedInd* on MEQR event Added Error Code 2192

Version	Date	Author	Description
3.1.0 r9	1/8/2021	Consolidated Audit Trail, LLC	Applicable Schema Version: 3.1.0 <u>Changes applicable beginning in Phase 2c:</u> Added *handlingInstructions* value ‘J3’ (2c only) Changed requirements for populating Side Details on MEFA events Added *unpricedInd* to MENQ event Changed *mpStatusCode* to Required field on MENQ event Added Error Codes 3020 and 3021 Updated Error Code 3501 Updated Section 2.4.3 to include intraday symbol list Corrected *custType* from required to optional in Phase 2c Corrected a typo in Table 32 Clarified requirements for *quotingIDQS* field Greyed Quote Route Key and related fields
3.1.0 r10	2/5/2021	Consolidated Audit Trail, LLC	Applicable Schema Version: 3.1.0 <u>Changes applicable beginning in Phase 2c:</u> Added *cancelFlag* and *cancelTimestamp* to MEAA event. Added new *allocationType* values ‘FCUS’, ‘FDVP’, ‘FCSF’ and ‘FDVF’ Added *handlingInstructions* value ‘TTSO’ Updated requirements for use of *reportingExceptionCode* ‘C’ Corrected *receivedQuoteID* field from Required to Optional on MEQR event Clarified error codes 3012 and 3015 Clarified *orderID* language in order events Added Allocation Key to the definition of Primary Event and Secondary Event in the Glossary Updated file version in CSV examples to 3.1.0
3.1.0 r11	3/5/2021	Consolidated Audit Trail, LLC	Applicable Schema Version: 3.1.0 <u>Conforming Changes:</u> Added Sections 3.7 and 3.8 (conforming changes with v4.0.0 r7) Clarified guidance for reporting partial cancellations <u>Changes applicable beginning in Phase 2c:</u> Clarified requirements for *DVPCustodianID* field Clarified the requirements for *leavesQty* on cancel events Clarified the definition of *handlingInstructions* value ‘DIR’ Updated the definition of *allocationType* values ‘FCUS’, ‘FDVP’, ‘FCUF’ and ‘FDVF’ Added error code 2147 Updated requirements in section 3.4

Version	Date	Author	Description
			Updated Table 1 with current phasing requirements Clarified reporting requirements for conditional orders in Section 3.6 Moved information on allocation cancels to new Section 3.3.3 Corrected linkage fields in Table 9 Clarified error code 2174

1. Introduction

1.1. CAT Overview

The Securities and Exchange Commission (SEC) approved Rule 613 under the Securities Exchange Act of 1934, which requires national securities exchanges and national securities associations (collectively, the Participants) to submit a national market system plan to create, implement, and maintain a consolidated audit trail (CAT NMS Plan) that would capture customer and order event information for orders in NMS Securities and OTC Equity Securities (Eligible Securities), across all markets, from the time of order inception through routing, cancellation, modification, execution, and allocation. The SEC approved the CAT NMS Plan on November 15, 2016.

In accordance with SEC Rule 613, the CAT NMS Plan requires a Central Repository that will comprehensively track orders throughout their lifecycle and identify the Participants and Industry Members handling them, as well as the account holders and authorized traders for any account that originates an order (Customers[1]). Specific data elements will be submitted to the Central Repository by Participants, Industry Members, and CAT Reporting Agents. CAT Reporting Agents may be third-party firms reporting on behalf of other entities, or may be outside parties that are not required to submit data to the CAT, but from which the CAT may receive data per the CAT NMS Plan, such as the Securities Information Processors (SIPs).

The CAT NMS Plan also requires the selection of an entity as the Plan Processor to be responsible for performing the processing functions required by Rule 613 and the Plan. The Operating Committee of Consolidated Audit Trail, LLC, a governing body composed of representatives of the Participants, oversees the operation of the CAT. The duties of the Operating Committee are further described in Article IV of the CAT NMS Plan.

Refer to SEC Rule 613, available at: https://www.sec.gov/rules/final/2012/34-67457.pdf for more details. Refer also to CAT NMS Plan, available at: https://www.catnmsplan.com/wp-content/uploads/2018/02/34-79318-exhibit-a.pdf.

[1] Customers are defined in SEC Rule 613(j)(3) as: (i) the account holder(s) of the account at a registered broker-dealer originating the order; and (ii) any person from whom the broker-dealer is authorized to accept trading instructions for such account, if different from the account holder(s).

1.2. Registration

Industry Members are required to register for the CAT NMS System by June 27, 2019 regardless of what phase they begin reporting. Third Party Transmitters are also required to register for the CAT NMS System prior to submission.

The Registration Form is available on the CAT Public Website, along with additional information on the registration process. Contact help@finracat.com for any questions regarding the registration process.

2. CAT Reporting Fundamentals

2.1. Industry Member Perspective

Industry Members must populate fields from their perspective. For example, for "*capacity*", the Industry Member must report based on the capacity in which the Industry Member acted. For New Order and Order Accepted events, reports must indicate the instructions as received. For an Order Route, the fields must include the instructions as sent to the destination.

2.2. Key Data Elements

The sections below describe the key data elements of CAT that may be used in CAT events and/or Metadata files.

2.2.1. Firm Identifiers in File Submissions

The CAT submissions process relies on certain firm identifiers to determine whose data is being reported, to determine and verify the authorization of the submitter of the data, and to obtain and verify the authorization of the third party that may take action on the data.

CAT Reporter IMID

The CAT Reporter IMID is the SRO assigned identifier that an Industry Member uses to report to CAT. A CAT Reporter may use any SRO assigned identifier that is valid on the CAT Trading Day for which CAT events are submitted. CAT will use reference data submitted by Participant Reporters each day to identify the Industry Member to which the specific identifier is assigned. Each SRO assigned identifier is linked to the Industry Member's CRD number so that all reporting activity of a single Industry Member CAT reporter can be consolidated at the firm level in CAT. Refer to Section 2.4.1.1 for additional information on populating the CAT Reporter IMID.

CAT Submitter ID

The CAT Submitter ID is a CAT assigned identifier for a firm that submits data to CAT. The Submitter ID uniquely identifies the Submitter and is not the same identifier as the CAT Reporter IMID. CAT Reporters may submit data for themselves or may authorize a Reporting Agent to report on the CAT Reporter's behalf. Additionally, CAT Reporters may authorize a Third Party Reporting Agent to view and take action on data submitted on behalf of the CAT Reporter by another Submitter.

Authorization between CAT Reporters, Submitter and Third Party Reporting Agents is granted through a reporting relationship that will be entered by the CAT Reporter using the CAT Reporter Portal. When a file is received, CAT will verify that the CAT Reporter has authorized the Submitter to submit on their behalf. When the file is received with a Third Party Reporting Agent designated, CAT will verify the CAT Reporter has authorized the Third Party.

If the Submitter is an Industry Member, the CAT Submitter ID is the Submitter's CRD number. If the Submitter is not an Industry Member and does not have a CRD number (i.e. Service Bureaus), the CAT Submitter ID is the Submitter's Organization ID. Service bureaus may contact the FINRA CAT Helpdesk to obtain their Organization ID.

2.3. Order ID

The order ID used in CAT events represents the internal order ID assigned by the Industry Member. The order ID is used as a Linkage Key and must be unique when combined with the *orderKeyDate*, *CATReporterIMID* and *symbol* (or *optionID*). Other key linkage fields are fully described in Section 2.6.1.

2.3.1. Timestamps

Each Industry Member must record and report Industry Member Data captured in an electronic system to CAT with timestamps in milliseconds. CAT will accept granularity up to nanoseconds. To the extent that any Industry Member's order handling or execution systems utilize timestamps in increments finer than milliseconds, the Industry Member must truncate its timestamps after the nanosecond level. Refer to CAT FAQs B2 and B8 for additional information.

Each Industry Member may record and report Manual CAT events in increments up to and including one second, provided that each Industry Member records and reports the time when a Manual CAT Event has been captured electronically in an order handling and execution system of such Industry Member ("Electronic Capture Time") in milliseconds. Allocation Reports must be reported in increments up to and including one second.

Each CAT event contains both an eventTimestamp and electronicTimestamp. The eventTimestamp is the time of order handling or execution pursuant to Section 6.8 of the CAT NMS Plan (e.g. origination, receipt) depending on the respective order event. For manual order handling, eventTimestamp is the manual handling or execution time, which is required to be reported in increments of at least one second. When the manual order is later captured electronically, the systematized time must be captured in the *electronicTimestamp* field.

2.3.2. Order Handling Instructions

Special handling instructions are reported in the *handlingInstructions* field using a standardized list of handling instructions and codes. Multiple codes and values can be used in combination to report special handling instructions.

Industry Members are required to report *handlingInstructions* on Order Route events. In the event an Industry Member routes an order with exactly the same handling instructions received from the customer, they may use *handlingInstructions* code "RAR" (Routed as Received) on the Order Route event rather than re-stating all *handlingInstructions* values from the New Order/Order Accepted event.

2.3.3. Firm ROE ID

The Firm ROE ID is the internal identifier assigned by the Industry Member to uniquely represent a record in CAT. The *firmROEID* is present on every CAT event and is used to support the corrections process.

The *firmROEID* must be unique for the Event Date and CAT Reporter IMID and is required to be formatted as follows: <Event Date>_<firm ROE Identifier>. This requirement applies to CAT Reporters that use multiple Submitters. An example of a *firmROEID* is: 20190429_323134567.

Event Date must represent the date portion of the *eventTimestamp* reported in the record. The inclusion of the event date provides processing efficiency for the corrections process by allowing the CAT Processor an efficient mechanism to locate the record being corrected.

Refer to Section 7.6 for more information on the corrections process.

2.3.4. Error ROE ID

The Error ROE ID is the identifier assigned by CAT to uniquely identify an error record. The *errorROEID* is returned with error feedback to provide a mechanism for firms to repair errors generated during processing. When firms are submitting corrections to CAT that represent a repair of an error, the *errorROEID* provides an efficient mechanism to locate the error record being repaired.

Refer to Section 7.6 for more information on the corrections process.

2.4. Reference Data

2.4.1. Industry Member Identifiers

An Industry Member Identifier is any identifier assigned by an SRO to one of its members. Examples of SRO assigned identifiers include FINRA MPIDs, Nasdaq MPIDs, NYSE Mnemonics, Cboe EFIDs, and

CHX Acronyms. Most Industry Members have multiple IMIDs. The following sections will provide guidance on which IMID to use for various fields and reporting circumstances.

2.4.1.1. IMID in the *CATReporterIMID* field

Populated in File names, within Metadata files, and optionally on CAT Events, the *CATReporterIMID* identifies the Industry Member whose data is represented in the CAT Event. The *CATReporterIMID* is populated with the SRO assigned identifier used to report to CAT. The *CATReporterIMID* is used to consolidate activity occurring both within the *CATReporterIMID* and at the firm (CRD) level. It also participates in the Linkage Keys used for Intrafirm Linkage and TRF Linkage. The *CATReporterIMID* does not participate in the Linkage Keys for Interfirm Linkage.

The *CATReporterIMID* is populated with the SRO assigned identifier used to report to CAT according to the following requirements:

1. FINRA members must populate the CAT Reporter IMID with the same MPID that it uses for related trade reporting facility (TRF) trade reporting, or, for quoting on an interdealer quotation system.
2. FINRA members that operate an alternative trading system (ATS) must use their FINRA ATS MPID.
3. If there is no ATS, TRF or quoting MPID requirement, any valid FINRA MPID may be populated.
4. Non-FINRA members may use any effective identifier of the firm as included in the Daily published Member Dictionary, as described in the CAT Reporting Technical Specifications for Plan Participants.
5. When a CAT Reporter routes between different IMIDs of the same firm (same CRD), the CAT Reporter IMID may **not** be populated with the same value on the Order Route and Order Accepted events.
6. The *CATReporterIMID* populated in the data file name, within the related metadata file and in the CAT event (if populated) must be equal, otherwise the record will be rejected.

2.4.1.2. IMID on Routing Events in the *senderIMID*, *receiverIMID* and *destination* Fields

IMIDs are populated in Order Accepted, Order Route, New Quote and Quote Received events with the Industry Member identifier used when routing between venues. This identifier is known to both parties and is required to be populated in the *senderIMID*, *receiverIMID* and *destination* fields where applicable.

The IMID participates in the Linkage Keys used for Inter-firm Linkage and Exchange Linkage. When the same Industry Member Identifier (IMID) is assigned by different SROs to represent different Industry Members, an IMID conflict is created. To avoid conflicts, to simplify the population of the Industry Member

Identifiers, and to streamline linkage processing, CAT reporters must populate the *senderIMID*, *receiverIMID* and *destination* (when routing to an IM) fields with both the CRD and IMID, formatted as <CRD of the CAT Reporter>:<IMID of the Industry Member performing the action in the CAT event>. The Industry Member ID must include the identifier that is known by the routing firm and destination venue. For example: CRD 123, IMID ABC is formatted as 123:ABC.

The IMID provided in the *senderIMID*, *receiverIMID* and *destination* fields can be different than the CAT Reporter IMID. For example, CAT Reporter ABCD (CRD 123) may use FRMA as its CAT Reporter IMID, but when routing to Exchange A, it uses the exchange assigned identifier ABC. In this scenario, on its Order Route event, Firm A would populate its identifier in the CAT Reporter IMID field as FRMA and its identifier in the *senderIMID* field as 123:ABC.

For orders received from or routed to an alternative trading system (ATS), the FINRA ATS MPID must be used. FINRA members must use the same MPID for CAT reporting that it uses for related trade reporting facility (TRF) trade reporting, or, for quoting on an interdealer quotation system. If there is no ATS, TRF or quoting MPID requirement, firms may agree to use any valid FINRA MPID when routing to or receiving from another FINRA member, as long as both CAT Reporters use the same MPID as the IMID. Routing identifiers representing FINRA members are populated as: <FINRA Member CRD>:<FINRA Member MPID>.

For orders received from or routed to a non-FINRA member firm, firms must agree to use the same IMID when reporting events to CAT. Non-FINRA members may use any effective identifier of the firm. Routing identifiers representing non-FINRA members are populated as: <non-FINRA Member CRD>:<non-FINRA Member MPID>.

For orders routed to or received from an exchange, CAT reporters must populate the IMID with both the CRD and exchange assigned identifier used in the order route message to the exchange, formatted as <CRD>:<exchange assigned identifier>.

Refer to Section 2.6.3 for additional information on how IMIDs participate in linkage.

2.4.1.3. Default IMIDs

The Plan Processor will publish each day a list of all SRO-assigned identifiers that includes a designated default IMID. The default IMID is selected by each CAT Reporter when they register as a CAT Reporter. The published default IMID must only be used if two parties do not have a pre-determined agreement as to which IMID to use when routing between each other. However, the default IMID is not intended to replace communication between the sender and receiver.

Routing identifiers populated using a default IMID are populated as: <default IMID CRD>:<default IMID>.

Example: A non-FINRA member firm (CRD 999) has a Cboe-assigned option identifier and a NYSE-assigned equity identifier, as follows:

• Cboe-assigned options ID - BDAO
• NYSE-assigned equity ID – BDA (default IMID)

In this example, when a second firm receives an order from the above firm, and the second firm does not have an agreement with the above firm as to which IMID to use, IMID BDA should be used to avoid a linkage error. The routing identifier is populated as 999:BDA.

2.4.1.4. IMID on Trade events in the *quotingIDQS* Field

Beginning in Phase 2d, IMIDs will be required to be populated in Trade events if the trade was the result of a quote that was sent to an IDQS. This identifier is known to both parties as the IMID of the IDQS that submitted the related Quote Received event, and will be required to be populated in the *quotingIDQS* field.

The IMID will participate in the IDQS Linkage Key used for Inter-firm Linkage between a Trade event and the related Quote Received event. CAT reporters will be required to populate the *quotingIDQS* field with both the CRD and IMID, formatted as <CRD of the CAT Reporter>:<IMID of the Industry Member performing the action in the CAT event>.

Refer to Section 2.6.3 for additional information on how IMIDs participate in linkage.

2.4.2. Firm Designated ID (FDID)

Section 6.4 of the CAT NMS Plan requires that for the original receipt or origination of an order, Industry Members must report the Firm Designated ID (FDID). Therefore, FDID is required to be populated on all New Order events for both equities and options.

FDID is defined in Section 1.1 of the CAT NMS Plan as a unique identifier for each trading account. Industry Members must assign a single FDID to each trading account that is unique across all vendors the IM may use to report new orders to CAT and unique across time (with limited exceptions, such as closed accounts). For example, if an Industry Member uses multiple vendors for reporting, each vendor must report activity from the same account using the same FDID.

Examples of what an FDID would represent include:

- Individual Customer Account Number
- Institutional Customer Account Number

- Account Number of Average Price Account Designated for a Specific Customer (e.g., Master Account or agency Representative Order scenarios)
- Account Number of Firm Average Price Account Shared Across Customers (e.g., Master Account, Account Used for Agency Representative Order Flows)
- Entity ID of the firm when an employee of the firm is exercising discretion over multiple customer accounts
- Proprietary Trading Account Number
- Firm assigned identifier representing a trading relationship (Relationship ID) can be used when the trading account structure is unavailable at the time the order was placed

An actual account number may not be used as the FDID for a customer account for CAT reporting. See CAT FAQ M2 for more information on the prohibition on use of actual account numbers. Refer to the CAT Industry Presentation on FDID for additional information.

Refer to Section 4.2 and Section 5.2 for details on reporting an FDID when an order is received for a new account and the new account number, on which the FDID is based, is not yet available.

Refer to the CAT Reporting Customer & Account Technical Specifications for Industry Members and the CAT CAIS Industry Member Reporting Scenarios for information on reporting FDIDs to the CAT Customer & Account Information System ("CAIS").

2.4.3. Equity Symbols

Industry Members must report CAT Events related to listed equity Eligible Securities to CAT using the symbology of the primary listing exchange and must report CAT Events related to OTC Equity Securities using FINRA OTC symbology.

2.4.3.1. CAT Symbol Master

CAT will provide a start-of-day equity symbol master list, an intraday equity symbol master list, and an end-of-day equity symbol master list each day on the CAT Public Website.

The symbol master file for Industry Members contains the following information:

- Listing exchange for listed securities with the symbol in the symbology of the listing exchange
- FINRA symbology for OTC Equity Securities
- Flag indicating whether the symbol is a test symbol.

Guidance for reporting order events occurring prior to an IPO symbol's inclusion on the CAT Reportable Securities List in Phase 2c is still under consideration. Refer to CAT FAQ A33 for additional information.

2.4.4. Option Symbols

As stated above, the CAT NMS Plan requires symbols to be reported to CAT in the symbology of the listing exchange. Standard option symbols established across exchanges as the result of the Option Symbology Initiative (OSI) must be used for any single-leg listed options.

2.4.4.1. Flex Percent Option Symbols

FLEX Percent options can only be uniquely identified using the OSI once their deterministic prices are known. When reporting the *optionID* for a FLEX Percent option, Industry Members must append "%" to the beginning of the standard OSI symbol. This will enable the CAT system to differentiate between a strike value that is expressed in percent terms from one that is expressed in dollars and cents.

FLEX Percent option symbols expressed with percentage strike values will have 22 characters. For example, an option order with *optionID* %1AAPL 200131C00095000 indicates it is a Flex Percent option order on OSI symbol 1AAPL 200131C00095000.

2.4.5. Corporate Actions

The CAT System will maintain historical symbology in the Central Repository that includes corporate actions.

CAT will receive daily corporate action files and symbol updates from the various data sources (including equity and options listing exchanges, FINRA OTC Equity Symbols, Data Distribution Services from Options Clearing Corporation, etc.) and publish daily symbol master files to the Industry Members. The symbol changes impacted by corporate actions will be reflected in the daily symbol master files. Industry Members must use the updated symbol in Reportable Events from the effective date of the symbol change. Failure to report in the updated symbol would result in rejects of the record(s).

Industry Members are not required to report order adjustments due to corporate actions, e.g., price or size changes. However, if an Industry Member chooses to report an adjustment resulting from a corporate action, the adjustment must be reported using the Order Modified event (or Order Adjusted event).

2.4.5.1. Options Intraday Listing or Delisting

CAT accommodates intraday listing of options by exchanges. Industry Members must report the OSI symbol as the *optionID*, just like for previously listed options.

CAT will maintain a historical record of option symbols, including symbols that have been delisted. Exchanges and the OCC will provide reference data to CAT for option symbols that are listed or delisted intraday.

2.5. Data Types

CAT will accept two kinds of text-based files: JSON and CSV. Data types used throughout this document are described below.

To support JSON and CSV submissions, the Industry Member Schema (JSON) file is available on the CAT public website that describes each data type with required representation formats and a mapping that defines the position in a CSV representation.

2.5.1. Data Validation Based on Data Types

All data submitted to CAT will be validated based on the defined data type of each item, including proper formatting and range checking. All File Names, Field Names and Field Values are case sensitive in CAT with the exception of Data Type BOOLEAN. During validations, if the case does not match, an error will occur. Examples of accepted values are detailed in the table below. Valid values for Choice fields are defined in the Data Dictionary for each data element. Valid data values, ranges, and formats will be specified in the record schema files, which will be used to validate submitted data element values. Records and values that fail validation will be rejected and will be reported as feedback to the Reporter and Data Submitter as detailed in Section 7.

Table 3: Data Types

Data Type	JSON Type	Description
Numeric	NUMBER	Composed of digits with an optional decimal point. Values must represent the exact value as per the examples: • 1235 • -1235 • 1235.67 • -1235.67 Numeric data types described in this document will include two numbers, the first is the maximum number of digits before the decimal point, and the second is the maximum number of digits after the decimal point. For example, Numeric (6,4) indicates that the number can have a maximum of 6 digits before the decimal point and a maximum of 4 digits after the decimal point. Examples which comply with Numeric (6,4) include: • -999999.9999

Data Type	JSON Type	Description
		• -0.1 • 0 • 0.0001 • 100 • 100.100 • 999999.99 • 0.25 • 099999.9990 • 0999999.99990 Numeric values must always include a digit in the portion before the decimal. The fractional portion is optional. (for example, 0.25 cannot be represented as .25). Examples which do not comply with Numeric (6,4) include: • 1234567.0 • .123 • 1.12345 • 10. • 40a Numeric data types that require 0 digits after the decimal place should not include a decimal. The following example does not comply with Numeric (6,0): • 1234.5 • 1234.0
Price	NUMBER	Numeric (10,8), which supports prices in the inclusive range from -9999999999.99999999 to 9999999999.99999999.
Real Quantity	NUMBER	Numeric (12,6) with up to 12 digits before the decimal point and up to 6 digits after the decimal point. However, the type Real Quantity cannot have trailing zeros in the decimal quantities. Trailing zeros in the decimal quantity will result in a rejection. For example, a value of 100.00 would not be accepted for the type Real Quantity, only 100 would be accepted. Similarly, a value of 100.10 would not be accepted, only 100.1 is acceptable for the type Real Quantity. Real Quantity must not be a negative value.
Whole Quantity	NUMBER	Numeric (12,0). An integer value with no decimal fraction component. Whole Quantity must not be a negative value.
Integer	NUMBER	An integer value (positive, negative, or zero), with no decimal fraction component, in the inclusive range from −9,223,372,036,854,775,808 to 9,223,372,036,854,775,807 (the same range as a 64-bit signed integer).
Unsigned	NUMBER	An unsigned value, greater than or equal to zero, with no decimal fraction component, in the inclusive range from 0 to 18,446,744,073,709,551,615 (the same range as a 64-bit unsigned integer).
Boolean	BOOLEAN	A value with two choices: true or false. In CSV representation, the value must equal `true` or `false` (no quotation marks). In JSON representation, if the field is not present, the value is considered `false`. Boolean values are NOT case sensitive.

Data Type	JSON Type	Description
Alphanumeric	STRING	A string, composed only of letters and digits [a-zA-Z0-9]. When an Alphanumeric type is described, it will include a number, indicating the maximum length of the field. For example, Alphanumeric (7) means that the field can contain up to 7 characters. Alphanumeric values are case sensitive.
Text	STRING	A string, composed of any printable ASCII character from 32 to 126. The string may not include the following characters which serve as delimiters: • comma (ASCII decimal 44, hex 2C), • pipe (ASCII decimal 124, hex 7C), • double quote (ASCII decimal 34, hex 22), and • @ (ASCII decimal 64, hex 40). When a Text data type is described, it will include a number, indicating the maximum length of the field. For example, Text (7) means that the field can contain up to 7 characters. Text values are case sensitive. When represented in JSON, the following rule applies: Backslash '\' is a reserved printable character in JSON and must be escaped in order to be used in strings by inserting a backslash prior to it within the string. For example: routedOrderID = 1234\ABCD must be reported to CAT as "routedOrderID":"1234\\ABCD". If the backslash is not escaped, it will be omitted from the string. For example, if the following is reported to CAT, "routedOrderID":"1234\ABCD", it will be stored as routedOrderID = 1234ABCD. Escape characters do not participate in the field value length.
Date	NUMBER	An 8-digit integer representing the date in YYYYMMDD.
Timestamp	STRING or Unsigned NUMBER	A timestamp represents a moment in time. Two timestamp formats are supported including STRING and NUMBER. Timestamps formatted as a STRING have a maximum length of 25 and are formatted as 'YYYYMMDD HHMMSS.CCCNNNNNN' with the Date and Time portions, separated by a space (ASCII decimal 32, hex 20) or the letter T (ASCII decimal 84, hex 54). All timestamps submitted in STRING format must be in Eastern Time (ET). • The **Date** portion must include four digit year, two digit month, and two digit day. Valid values: YYYY = 0000 - 9999, MM = 00 - 12, DD = 00 – 31. • The **Time** portion must include a two digit hour, two digit minute, two digit seconds. Valid values: HH = 00 - 23, MM = 01 - 59, SS = 01 - 59, CCC = 000 – 999, NNNNNN = 000000 - 999999. Examples which comply with Timestamp in STRING format: • 20190617T000120.000000000 • 20190617T000120 • 20190617T000120.000 • 20170107T213000.123456789 • 20170107 213000.123456789 • 20190617 000120.123000000

<table>
<tr><th>Data Type</th><th>JSON Type</th><th>Description</th></tr>
<tr><td></td><td></td><td>Examples which do not comply with Timestamp in STRING format:
• 20190617T0120
• 20190617T000120.

As an alternative format, timestamp can be submitted as a value of type Unsigned, representing the number of nanoseconds that have elapsed since 00:00:00 Coordinated Universal Time (UTC), Thursday, 1 January 1970, not counting leap seconds. This is also commonly known as POSIX time or UNIX time. The same point in time from the above example would be represented as the number 1483842600123456789. Timestamps submitted in UTC must not be adjusted for Eastern Time.

Note that the data type is different between the two formats. In JSON, the first representation requires it to be surrounded by double quotes, while the second does not.

Examples which comply with Timestamp in NUMBER format:
• 1483842600123456789

Examples which do not comply with Timestamp in NUMBER format:
• 20190617T000120
• 20190617 000120</td></tr>
<tr><td>Name/Value Pairs</td><td>OBJECT</td><td>An object composed of a list of zero or more attributes where each attribute is either a name with no value, or a name with an accompanying value. Multiple attributes are separated by a delimiter.

When represented in JSON, the following rules apply:
• The OBJECT is contained within curly brackets { }
• Name/Value Pairs are comma separated
• A value accompanied by a name must be formatted as per the data type syntax required in JSON
• A name with no value must include the Boolean value as indicated in the below examples.

For example, handlingInstructions are represented as follows in JSON:
"handlingInstructions":{
"AOK": true,
"DISP": 10.00,
"TMO":"20190419T092316.123456789",
"AucResp":"AuctionID456"
}

When represented in CSV, the following rules apply:
• The OBJECT is represented in a single position delimited by comma
• Name/Value Pairs are pipe delimited
• A value accompanied by a name is prefixed by an equal sign
• A name with no value must only include the name</td></tr>
</table>

<table>
<tr><th>Data Type</th><th>JSON Type</th><th>Description</th></tr>
<tr><td></td><td></td><td>In CSV, handlingInstructions is represented as:
AOK|DISP=10.00|TMO=20190419T092316.123456789|AucResp=AuctionID456

timeInForce is also defined as a Name/Value Pair, however only one Choice value is applicable. The following examples demonstrate how to represent in JSON and CSV:
<table>
<tr><th>Ex</th><th>JSON</th><th>CSV</th></tr>
<tr><td>1</td><td>"timeInForce":{"DAY": 20190528}</td><td>DAY=20190528</td></tr>
<tr><td>2</td><td>"timeInForce":{"GTT": “20190528T160000.000000”}</td><td>GTT=20190528T160000.000000</td></tr>
<tr><td>3</td><td>“timeInForce”:{“IOC”: true}</td><td>IOC</td></tr>
</table></td></tr>
<tr><td>Array</td><td>ARRAY</td><td>A list of 0, 1 or more values of the same data type.
When represented in JSON, the following rules apply:
• ARRAY is within a set of brackets [ ]
• Elements within the array are comma separated.
For example, atsOrderType is represented as the following in JSON:
"atsOrderType":["PEG","midPEG"]

When represented in CSV, the following rules apply:
• ARRAY is represented in a single position delimited by comma
• Elements in the array are pipe delimited

When represented in CSV, it is:
,,,PEG|midPEG,,,</td></tr>
<tr><td>Choice</td><td>STRING</td><td>A Text field with an explicit list of acceptable values. The Data Dictionary section of this document lists the acceptable values for each Choice field.</td></tr>
<tr><td>Symbol</td><td>STRING</td><td>Text (22). Refer to Section 2.4.3 and Section 2.4.4 for more details on Equity and Options symbols. The string is case sensitive.</td></tr>
<tr><td>Message Type</td><td>STRING</td><td>Alphanumeric (5) indicating the type of message being reported.</td></tr>
<tr><td>CAT Reporter IMID</td><td>STRING</td><td>Alphanumeric (7) - a CAT Reporter IMID.</td></tr>
<tr><td>Exchange ID</td><td>STRING</td><td>Alphanumeric (7) – identifier that applies to exchanges.</td></tr>
<tr><td>CAT Submitter ID</td><td>Unsigned NUMBER</td><td>A unique ID assigned by CAT to the CAT Reporting Agent.</td></tr>
<tr><td>Industry Member ID (IMID)</td><td>STRING</td><td>Text (16) – CRD and SRO assigned Market Participant Identifier assigned by an SRO to one of its members.
Formatted as <CRD of the Market Participant>:<SRO Assigned Identifier of the Market Participant>.
Example: CRD 123, IMID ABCD is populated as 123:ABCD</td></tr>
<tr><td>Multi-Dimensional Array</td><td>Multi-Dimensional ARRAY</td><td>A compound object that consists of an array of objects. The JSON and CSV syntax for this data type is consistent with other Multi-Dimensional Array JSON Types. Multi-Dimensional Array is specified as the data type within the Metadata File Definition for Submissions as well as Metadata File Definitions for Error Feedback.</td></tr>
</table>

Data Type	JSON Type	Description
		When represented in JSON, the following rules apply: • ARRAY is within a set of brackets [ ] • Each OBJECT contained in the ARRAY is within curly brackets { } • Elements within each object are comma separated • Conditional elements that do not have a value are not required to be included. **When represented in CSV, the following rules apply:** • ARRAY is represented in a single position delimited by comma • Each object contained in the ARRAY is pipe delimited • Elements within each object are delimited by @ • All elements defined for the Object must be represented in their specified position, even when there is not applicable value.
Trade Side Details	Multi-Dimensional ARRAY	A compound object that consists of a list of data elements which supports the reporting of buy side details and sell side details in a Trade Event. When Trade Side Details are reported, each side will represent one set of details. *buyDetails* and *sellDetails* are two different fields. Each field is defined to contain an ARRAY that is limited to one object. For example, Trade Side Details (*buyDetails* and *sellDetails*) are represented as follows in JSON: "**buyDetails**" : [{"orderID" : "OrderABC", "orderKeyDate": "20190419T000000", "side" : "B"}], "**sellDetails**" : [{"side" : "SL", "firmDesignatedID" : "Prop123", "accountHolderType" : "P"}] When represented in CSV, refer to the following example: ,,,20190419T000000000@OrderABC@B@@@@,@@S@@Prop123@P@,,, Refer to Section 4.12.1 Table 35: Trade Side Details for the list of fields.
Fulfillment Side Details	Multi-Dimensional ARRAY	A compound object that consists of a list of data elements that represents firm side or customer/client side details of an Order Fulfillment. Refer to Section 4.13.1 Table 39: Fulfillment Side Details and Section 5.11.1 Table 60: Options Fulfillment Side Details for the list of fields.
Aggregated Orders	Multi-Dimensional ARRAY	A compound object that consists of a list of data elements that represents one or more orders being aggregated. The *aggregatedOrders* field may include 0, 1, or more orders, with each order having a set of required data elements. For example, an *aggregatedOrders* will be presented as following in JSON:

Data Type	JSON Type	Description
		"**aggregatedOrders**":[{"OrderID" : "O1234", "OrderKeyDate": "20190419T000000"}, {"OrderID" : "O1235", "OrderKeyDate" : "20190419T092316.123456789"}, {"OrderID" : "O1236", "OrderKeyDate" : "1483842600123450000", "Quantity" : "800"}] When represented in CSV, refer to the following example: ,,,O1234@20190419T000000@@| O1235@20190419T092316.123456789@@| O1236@1483842600123450000@800@,,, If the multi-dimensional array is blank, CSV must only contain the first level delimiter, the comma. Only comma acts as the place holder, the lower level delimiter '@' must not be added.

2.5.2. Required, Conditional, and Optional Fields

Throughout this document, event types and their fields will be defined. Each field will be notated with the abbreviation R, C, O or A to represent whether it is required, conditional, optional or applicable for ATSs only. This codification will appear in the last column of each table describing an event.

Table 4: Include Key

Value	Abbreviation	Description
Required	R	Required for the given event. This field must always be included.
Conditional	C	Conditionally required for the given event, depending upon other values submitted in the Reportable Event message.
Optional	O	Optional for the given event. May be included at the discretion of the reporter/submitter.
ATS	A	Applicable for ATSs only. Required when the CAT Reporter IMID is an ATS.

2.6. Linkage Overview

This section describes the Linkage Keys that are used to create lifecycles in CAT and explains how the Linkage Keys are constructed via different data elements in respective Reportable Events. When combined, these data elements must create a Linkage Key that is unique. All Reportable Events will be linked in CAT via the daisy chain approach and do not rely on timestamps or sequence in order to link events within a lifecycle.

2.6.1. CAT Linkage Keys

Below is the list of Linkage Keys that connect CAT events within an Industry Member and across Industry Members. In instances of a merger or acquisition, the *originatingIMID* will be used in place of the *CATReporterIMID* to support linkage.

Table 5: Linkage Keys

Linkage Key	Description	Fields
Order Keys – Duplication of Order Keys results in the rejection of all events with the same key		
Order Key	Links together the events of the same order, within an Industry Member. For example, Order Key links an Order Accepted event to a subsequent Order Route event.	• *orderKeyDate* • *CATReporterIMID* • *symbol* (or *optionID*) • *orderID*
Prior Order Key	Links modifications to the original order. For example, Prior Order Key links an Order Modified event to the previous Order Accepted event.	• *priorOrderKeyDate* • *CATReporterIMID* • *symbol* (or *optionID*) • *priorOrderID*
Parent Order Key	Links Child (Option) Order events and (Option) Order Internal Route Accepted events to the related parent order event. For example, links an Order Internal Route Accepted event to a parent New Order event.	• *parentOrderKeyDate* • *CATReporterIMID* • *symbol* (or *optionID*) • *parentOrderID*
Manual Order Key	Links an order event representing a duplicative electronic message to the previously reported order event representing the original manual order.	• *manualOrderKeyDate* • *CATReporterIMID* • *symbol* (or *optionID*) • *manualOrderID*
Trade, Fulfillment and Allocation Keys – Duplication of Trade, Fulfillment and Allocation Keys results in the rejection of all events with the same key. Duplication of TRF Linkage Keys results in unlinked errors for all records with the same key.		
Trade Key	Links Trade events to related Trade Supplement events.	• *tradeKeyDate* • *CATReporterIMID* • *symbol* • *tradeID*
Fulfillment Key	Links CAT Order Fulfillment events to related Order Fulfillment Supplement events. Links CAT Order Fulfillment events to a related Fulfillment Amendment or Order event if the *fulfillmentID* remains the same.	• *fillKeyDate* • *CATReporterIMID* • *symbol* (or *optionID*) • *fulfillmentID*

Linkage Key	Description	Fields
Prior Fulfillment Key	Links an Order Fulfillment event to a related Order Fulfillment Amendment event if a new *fulfillmentID* is assigned.	• *priorFillKeyDate* • *CATReporterIMID* • *symbol* (or *optionID*) • *priorFulfillmentID*
TRF Linkage Key	Links the Trade event reported by the Industry Member to the related media tape report in the TRF/ADF/ORF.	• Event Date • *CATReporterIMID* • *symbol* • *tapeTradeID* • *marketCenterID*
Allocation Key	Links CAT Post Trade Allocation events to related Amended Allocation events if the *allocationID* remains the same.	• *allocationKeyDate* • *CATReporterIMID* • *symbol (or optionID)* • *allocationID*
Prior Allocation Key	Links CAT Post Trade Allocation events to related Amended Allocation events if a new *allocationID* is assigned.	• *priorAllocationKeyDate* • *CATReporterIMID* • *symbol (or optionID)* • *priorAllocationID*
Quote Keys – Duplication of Quote Keys results in the rejection of all events with the same key		
Quote Key	Links New Quote events reported by the Industry Member to related order or quote events. For example, links a Quote Received event to a related Quote Cancelled event.	• *quoteKeyDate* • *CATReporterIMID* • *symbol* • *quoteID*
Prior Quote Key	Links a quote event being modified to the previous quote.	• *priorQuoteKeyDate* • *CATReporterIMID* • *symbol* • *priorQuoteID*
IDQS Linkage Key	For trades executed as the result of a quote sent to an IDQS, links the Trade event reported by an Industry Member to the related Quote Received event reported by the IDQS.	Refer to Section 2.6.3 below for more detailed descriptions.
Options Keys		
Complex Order Key	Complex Order key is not applicable until Phase 2d and will be defined in a subsequent publication.	
Route Linkage Keys – Duplication of Route Linkage Keys will result in unlinked errors for all records having the same key		
Route Linkage Key	Links the CAT events reported by the Industry Member routing an order away and the Industry Member accepting the order.	Refer to Section 2.6.3 below for more detailed descriptions.
Quote Route Key	Links quote events reported by an Industry Member routing a quote to an IDQS and the IDQS receiving the quote.	Refer to see Section 2.6.3 below for more detailed descriptions.

2.6.2. Reporting Responsibilities of Sender/Receiver

Industry Members are responsible for reporting routes, modifications, and cancellations in line with OATS guidance ([OATS FAQ C35]). Below is a list of sample scenarios and the reporting responsibilities of the sender (Broker A) and the receiver (Broker B). This guidance is also applicable to the sender (Broker A) when routing to an Exchange instead of another Industry Member Broker-Dealer.

Table 6: Reporting Responsibilities of Sender/Receiver

	Sender (Broker A)		Receiver (Broker B or Exchange)	
Scenario	**Action**	**CAT Report**	**Action**	**CAT Report**
Routing an Order				
Broker A routes an order to Broker B	1) Routes the order to Broker B	Order Route	2) Accepts the order from Broker A	Order Accepted
An Order routed from Broker A to Broker B is rejected by Broker B	1) Routes the order to Broker B	Order Route with *routeRejectedFlag* populated as 'true'	2) Rejects the order from Broker A	N/A
Customer/Client Modification/Cancellation of a Previously Routed Order				
Customer/client of Broker A requests to modify an order previously routed to Broker B	1) Receives the customer/client order modification request (as either modification or cancel/replace request) and routes modification request to Broker B	Modification Request (or *requestTimestamp* in MEOM) (Phase 2d)	2) Receives Request from Broker A	Order Modification Request (or *requestTimestamp* in MEOM) (Phase 2d)
	4) Receives confirmation from Broker B and updates OMS/EMS	Order Modified event (*eventTimestamp* in MEOM is the confirmation time) and Route Modified event (Phase 2d)	3) Confirms modification to Broker A	Order Modified event (*eventTimestamp* is the confirmation time)
Customer/client of Broker A requests to modify an order previously routed to Broker B Broker A cancels the route and sends a new route to Broker B	1) Receives the customer modification request and routes cancel/new order request to Broker B	Modification Request (or *requestTimestamp* in MEOM) (Phase 2d)	2) Receives the cancel/new order request from Broker A	Order Cancel Request (or *requestTimestamp* in MEOC) (Phase 2d)
	4) Receives confirmation from Broker B and updates OMS/EMS	Order Modified (*eventTimestamp* in MEOM is the confirmation time), Order Route, and Route Cancelled (Phase 2d)	3) Confirms cancel/new order to Broker A	Order Cancelled (*eventTimestamp* is the confirmation time*)* and Order Accepted

Scenario	Sender (Broker A) Action	Sender (Broker A) CAT Report	Receiver (Broker B or Exchange) Action	Receiver (Broker B or Exchange) CAT Report
Customer/client of Broker A requests to cancel an order that was previously routed to Broker B.	1) Receives the customer cancellation requests and sends to Broker B	Order Cancel Request (or *requestTimestamp* in MEOC) (Phase 2d)	2) Receives the request from Broker A	Order Cancel Request (or *requestTimestamp* in MEOC) (Phase 2d)
	4) Receives confirmation from Broker B and updates OMS/EMS	Order Cancelled (*eventTimestamp* is the confirmation time*)* and Route Cancelled (Phase 2d)	3) Confirms cancellation to Broker A	Order Cancelled (*eventTimestamp* is the confirmation time*)*
Modification/Cancellation of a Previously Routed Firm Order				
Broker A requests to modify a firm order previously routed to Broker B	1) Broker A sends request to Broker B to modify the route (as either modification or cancel/replace request)	N/A	2) Receives Request from Broker A	Order Modification Request (or *requestTimestamp* in MEOM) (Phase 2d)
	4) Receives the confirmation from Broker B and updates OMS/EMS	Order Modified event (*eventTimestamp* in MEOM is the confirmation time) and Route Modified event (Phase 2d)	3) Confirms modification to Broker A	Order Modified event (*eventTimestamp* is the confirmation time)
Broker A requests to modify an order previously routed to Broker B Broker A cancels the route and sends a new route to Broker B	1) Broker A routes cancel/new order request to Broker B	N/A	2) Receives the cancel/new order request from Broker A	Order Cancel Request (or *requestTimestamp* in MEOC) (Phase 2d)
	4) Receives the confirmation from Broker B and updates OMS/EMS	Order Modified (*eventTimestamp* in MEOM is the confirmation time), Order Route, and Route Cancelled (Phase 2d)	3) Confirms cancel/new order to Broker A	Order Cancelled (*eventTimestamp* is the confirmation time*)* and Order Accepted
Broker A requests to cancel an order that was previously routed to Broker B.	1) Broker A sends request to Broker B to cancel the order	N/A	2) Receives the request from Broker A	Order Cancel Request (or *requestTimestamp* in MEOC) (Phase 2d)
	4) Receives the confirmation from Broker B and updates OMS/EMS	Order Cancelled *(eventTimestamp* is the confirmation time) and Route Cancelled (Phase 2d)	3) Confirms cancellation to Broker A	Order Cancelled (*eventTimestamp* is the confirmation time*)*
Firm Initiated Cancellation/Modification of a Previously Routed Order Without a Corresponding Modification/Cancellation of the Originating Order				

Scenario	Sender (Broker A)		Receiver (Broker B or Exchange)	
	Action	CAT Report	Action	CAT Report
Broker A initiates a modification on a previously routed order	1) Sends modification request to Broker B	N/A	2) Receives the request from Broker A	Order Modification Request (or *requestTimestamp* in MEOM) (Phase 2d)
	4) Receives the confirmation from Broker B and updates OMS/EMS	Route Modified (Phase 2d)	3) Confirms modification to Broker A	Order Modified (*eventTimestamp* is confirmation time)
Broker A initiates a cancellation on a previously routed order	1) Sends cancellation request to Broker B	N/A	2) Receives the request from Broker A	Order Cancel Request (or *requestTimestamp* in MEOC) (Phase 2d)
	4) Receives the confirmation from Broker B and updates OMS/EMS	Order Route Cancelled (Phase 2d)	3) Confirms cancellation to Broker A	Order Cancelled (*eventTimestamp* is confirmation time)
Unsolicited Modification/Cancellation of a Previously Routed Order by the Receiving Firm Without a Corresponding Modification/Cancellation of the Originating Order				
Broker B initiates a modification of an order received from Broker A	2) Receives the unsolicited update from Broker B and updates OMS/EMS	Route Modified (Phase 2d)	1) Modifies the order and sends unsolicited update to Broker A	Order Modified (*eventTimestamp* is confirmation time)
Broker B initiates a cancellation of an order received from Broker A	2) Receives the unsolicited cancel from Broker B and updates OMS/EMS	Route Cancelled (Phase 2d)	1) Cancels the order and sends unsolicited cancellation to Broker A	Order Cancelled (*eventTimestamp* is confirmation time)

2.6.3. Summary of Route and TRF Linkage Keys

Table 7 below summarizes the required data elements to construct the Route Linkage Key, which is used for linking Route and Order Accepted events reported by different entities in CAT. The combination of the data elements that make up the Route Linkage Key must be unique for the sender and receiver. When the Route Linkage Key is not unique, unlinked errors will be returned for all records having the same Route Linkage Key.

The *routedOrderID* field, which participates in the Route Linkage Key, is defined as a Text field and may **not** include the following characters which serve as delimiters: comma, pipe, double quote, and the @ symbol. When reporting to CAT in JSON, backslash is a reserved printable character and must be escaped in order to participate in the *routedOrderID*. If a backslash is used in the *routedOrderID* field and is not escaped when reporting in JSON, route linkage errors may occur. Refer to Section 6.1.2.1 for additional guidance.

Table 7 below also summarizes the required data elements to construct the TRF Linkage Key, which is used for linking Trade events to the related media tape report in the TRF/ADF/ORF. Non-media trade reports are not included in TRF linkage. The combination of the data elements that make up the TRF Linkage Key must be unique. When the TRF Linkage Key is not unique, all events with the same TRF Linkage Key will be rejected.

Industry Members may link to either the Reporting Side or the Contra Side of the related Trade Report, but may not combine elements between the Reporting Side and the Contra side of the Trade Report. If the *CATReporterIMID* in the MEOT record matches to the Reporting Side, the *tapeTradeID* must also match the Reporting Side. If the *CATReporterIMID* in the MEOT record matches to the Contra Side, the *tapeTradeID* must also match the Contra Side.

For Participant related event details, refer to the CAT Reporting Technical Specifications for Plan Participants.

Table 7: Summary of Route and TRF Linkage Keys

Item	Description	Sender	Receiver
1	Routing Between Industry Members (IMs)	IM	IM
		senderIMID	senderIMID
		destination (IMID)	receiverIMID
		Event Date	Event Date
		symbol (or optionID)	symbol (or optionID)
		routedOrderID*	routedOrderID*
2	Routing from an Industry Member to an Exchange	IM	Participant
		senderIMID	routingParty
		destination (Exchange ID)	exchange (Exchange ID)
		Event Date	Event Date
		session	session
		symbol (or optionID)	symbol (or optionID)
		routedOrderID*	routedOrderID
3	Routing from an Exchange to the Exchange Affiliated/Routing Broker	Participant	IM
		exchange (Exchange ID)	senderIMID (Exchange ID)
		routingParty	receiverIMID
		Event Date	Event Date
		symbol (or optionID)	symbol (or optionID)

Item	Description	Sender	Receiver
		routedOrderID	routedOrderID*
4	Routing from an Industry Member to a non-reporting Foreign Entity	IM	Foreign Broker-Dealer
		No Linkage	
5	Routing a quote event from an Industry Member broker-dealer to an IDQS.	IM	IDQS
		senderIMID	senderIMID
		destination (IMID)	receiverIMID
		Event Date	Event Date
		symbol	symbol
		routedQuoteID*	receivedQuoteID*
6	Trade is executed and reported to both CAT and the TRF/ADF/ORF	IM	TRF/ADF/ORF
		Event Date	Event Date portion of Execution Timestamp
		CATReporterIMID	Reporting or Contra MPIDs
		symbol	symbol
		tapeTradeID	Reporting or Contra Branch Sequence Number or Compliance ID
		marketCenterID	Market Center ID
7	Trade is executed as a result of a quote sent to an IDQS and links to a Quote Received event reported by the IDQS	IM	IDQS
		quotingIDQS	receiverIMID
		CATReporterIMID	senderIMID
		Event Date	Event Date
		symbol	symbol
		quoteID	quoteID

* Not required for manual order route/receipt.

2.6.3.1. Routing Between Industry Members

The Route Linkage Key used to link events between Industry Members must be unique for the Event Date, *senderIMID*, *destination/receiverIMID*, *symbol/optionID* and *routedOrderID*. Session does not participate in the Route Linkage Key for routes between Industry Members when validating for uniqueness and when performing linkages. [2] These requirements apply to both the sending and receiving Industry Member.

[2] Industry Members commonly establish multiple connections or "sessions" between counterparties. If Industry Members have multiple points of connection or sessions established with counterparties, Industry Members should be aware that many

Order linkage between industry members requires that the Route Linkage Key is equal between the sender and receiver. The sending and receiving firms must mutually agree on the IMID to be used if they have multiple SRO assigned IMIDs. If there is no predetermined agreement between the sender and the receiver, firms may reference the default IMID list as outlined in Section 2.4.1.3. However, the default IMID list is not intended to replace communication between the sender and receiver.

Leading zeros will be removed from the *routedOrderID* field when constructing the Route Linkage Key. The *routedOrderID* field is not required for manual routes when the *manualFlag* is populated 'true'.

Example Route Linkage Key when routing between Industry Members: CAT Reporter ABCD (CRD 123) routes an order to DEFG (CRD 456). CAT Reporter DEFG receives the order. In this example, CAT Reporter ABCD uses the SRO assigned identifier of ABC when routing.

Table 8: Route Linkage Key Fields When Routing Between Industry Members

Sender – MEOR		Receiver – MEOA	
CATReporterIMID ABCD		CATReporterIMID DEFG	
senderIMID	123:ABC	senderIMID	123:ABC
destination	456:DEFG	receiverIMID	456:DEFG
Event Date (portion of eventTimestamp)	05012018	Event Date (portion of eventTimestamp)	05012018
Symbol	XYZ	symbol	XYZ
routedOrderID	ROID1234	routedOrderID	ROID1234

2.6.3.2. Routing to Exchanges

The Route Linkage Key used to link Routes to Exchanges must be unique for the Event Date, *senderIMID/routingParty*, *destination/exchange*, *symbol/optionID, routedOrderID and session*. Session participates in the Route Linkage Key for routes to an Exchange; it is used when validating for uniqueness and when performing linkages. The *session* represents the name of the connection used when routing an order to a national securities exchange.

When routing to exchanges, the destination must be the Exchange ID to which the order is routed. The *senderIMID* must be populated with the prefix equal to the CRD of the routing firm, and the suffix equal to exchange assigned identifier that was used in the order route message to the exchange. The identifier

common protocols (*i.e.* FIX), require unique order IDs on each order message per session. Industry Members should take proactive steps to ensure Route Linkage Key uniqueness when establishing additional trading sessions between counterparties.

populated in the suffix must equal the *routingParty* field value reported by the exchange on the Participant Order Accepted event. See CAT Reporting Technical Specifications for Plan Participants for more details.

The *senderIMID* in this scenario may be different from the *CATReporterIMID*. Refer to Section 2.4.1.1 for additional guidance on how to populate the *CATReporterIMID* and *senderIMID*. This requirement is consistent with current OATS guidance, which requires that the Exchange Participant ID field is populated with the exchange identifier used when entering the order.

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 CAT in the exact format as sent to the exchange. Firms should take note of each exchange's interface specifications regarding special characters or spaces, as some exchange transmission protocols may remove certain characters or spaces. Leading zeros will be removed from the *routedOrderID* and *session* fields when constructing the Route Linkage Key. This field value must match the value for *routedOrderID* reported by the exchange in their Order Accepted event.

Example Route Linkage Key when routing to an Exchange: CAT Reporter ABCD (CRD 123) routes an order to Exchange EXCH. ABCD's SRO identifier at EXCH is ABC.

Table 9: Route Linkage Key Fields When Routing to an Exchange

Sender – MEOR		Receiver – EOA	
CATReporterIMID ABCD		Exchange EXCH	
senderIMID	123:ABC	routingParty	ABC
destination	EXCH	exchange	EXCH
Event Date (portion of eventTimestamp)	05012018	Event Date (portion of eventTimestamp)	05012018
symbol	XYZ	symbol	XYZ
routedOrderID	ROID1234	routedOrderID	ROID1234
session	sess-01	session	sess-01

For additional information on the values to be provided based on the exchange the order is routed to and specific guidance related to each field required for Exchange Route Matching, refer to the Order Routing Field Mapping document published on the IM Technical Specifications page of the CAT Public Website.

2.6.3.3. Routing from an Exchange to the Exchange's Routing Broker

The Route Linkage Key used to link events between a route from an Exchange to the Exchange's Routing Broker must be unique for the Event Date, *exchange/senderIMID*, *routingParty/receiverIMID*, *symbol/optionID* and *routedOrderID*. Session does not participate in the Route Linkage Key for routes between an Exchange and the Exchange's Routing Broker when validating for uniqueness and when performing linkages.

When an Industry Member that is an exchange routing broker receives an order routed from the exchange, the *senderIMID* field must be the Exchange ID from which the order is received. Firms receiving an order from an exchange must populate the *receiverIMID* with the prefix equal to the CRD of the receiving firm, and the suffix equal to the identifier known by the exchange sending the order. The identifier populated in the suffix must equal the *routingParty* field value reported by the exchange on the Participant Order Route event. See CAT Reporting Technical Specifications for Plan Participants for more details.

The *receiverIMID* in this scenario may be different from the CAT Reporter IMID. Refer to Section 2.4.1.1 for additional guidance on how to populate the CAT Reporter IMID.

Example Route Linkage Key when receiving an order from an Exchange: Routing Broker ABCD (CRD 123) receives an order from Exchange EXCH. ABCD's SRO identifier at EXCH is ABC.

Table 10: Route Linkage Key Fields When Receiving an Order from an Exchange

Sender - EOR		Receiver – MEOA	
Exchange EXCH		CATReporterIMID ABCD	
routingParty	ABC	receiverIMID	123:ABC
exchange	EXCH	senderIMID	EXCH
Event Date (portion of eventTimestamp)	05012018	Event Date (portion of eventTimestamp)	05012018
Symbol	XYZ	Symbol	XYZ
routedOrderID	ROID1234	routedOrderID	ROID1234

2.6.3.4. Routing to Foreign Destinations

When an order is routed to a foreign non-CAT-reporting entity, the *destinationType* must be marked as 'N' (Foreign). When routing to a foreign non-CAT-reporting entity, there is no requirement to report *senderIMID*, *destination*, or *routedOrderID,* but an Industry Member may choose to populate these fields. When *destinationType* is 'N', a CRD Prefix is not required to be populated in the *destination* field if it is optionally populated.

If an Industry Member is unable to guarantee record level uniqueness of simultaneous routes to a foreign destination without populating the *senderIMID, destination,* or *routedOrderID* fields, then the Industry Member must populate any combination of these fields on its Order Route event that will guarantee record level uniqueness.

The *destinationType* and *senderType* values of 'O' are used to support linkage in scenarios where an order in an OTC equity symbol of a foreign security is routed between Industry Members, and the sender or receiver may not have had a CAT reporting obligation in accordance with Section I of the CAT FAQs. When *destinationType* or *senderType* 'O' is populated, linkage will be attempted on the Order Route or Order Accepted/Modified event. After linkage is attempted, if no link is found, the firm will not receive an unlinked error. Refer to the CAT Industry Member Reporting Scenarios document for detailed examples of reporting *destinationType* and *senderType* 'O' to CAT.

Refer to Section I of the CAT FAQs for additional information on routing orders to a foreign destination.

2.6.3.5. Routes Rejected by the Destination Venue

Industry Members are required to report an Order Route event with the *routeRejectedFlag* populated as 'true' if a sender receives notification from the destination venue that a route has been rejected by the recipient. If the sender has not received acknowledgment from the destination venue after a time period determined by the sender, and the sender "abandons" the route, the sender may mark the *routeRejectedFlag* as 'true'. Additionally, an Order Route Supplement event may be used to populate the *routeRejectedFlag* as 'true' if the route rejection is not known at the time of submission of the original Order Route event.

While Industry Members are responsible for accurately reporting the *routeRejectedFlag* to CAT, linkage will be attempted on all Order Route events that contain a *routeRejectedFlag* as 'true' in order to account for instances where there may be a miscommunication between venues as to whether or not an order was accepted or rejected. After linkage is attempted, if no link is found, the firm will not receive an unlinked error if the *routeRejectedFlag* is populated as 'true'.

3. Special Reporting Requirements

3.1. Alternative Trading Systems ("ATS") Reporting

ATSs are required to submit additional information in applicable CAT events. ATS fields must be populated if the *CATReporterIMID* is an ATS. Any ATS fields, such as *workingPrice*, that are not applicable to the event must be populated by the ATS using a value of "0". Industry Members that are not ATSs must leave these fields blank.

3.1.1. National Best Bid and Offer (NBBO)

ATSs are required to report NBBO information.

The NBBO must be reported to CAT from the perspective of the ATS. Specifically, the NBBO (or relevant reference price) reported must be the NBBO in effect at the time of the order event, and the timestamp of when the ATS captured the effective NBBO (or relevant reference price). In addition, the ATS must identify the market data feed (NBBO Source) it used to obtain the NBBO (or relevant reference price).

If another reference price, such as the primary market's BBO, is used by the ATS, then the applicable reference price must be reported instead of the NBBO. If there is no price, the ATS must populate the *nbbPrice* and *nboPrice* fields with a value of "0".

While the *nbbQty* and *nboQty* fields are optional for ATSs, if an ATS chooses not to populate a quantity in these fields, they must be populated with a value of "0".

FINRA Rule 4554 requires ATSs using an alternative NBBO feed from what was reported on its ATS data submission to notify FINRA of the fact that an alternative source was used, identify the alternative source, and specify the date(s), time(s) and securities for which the alternative source was used. In order to comply with FINRA Rule 4554 for the purpose of CAT reporting, Industry Members must submit an ATS NBBO Source Change Formvia email to FINRA CAT. Instructions for submitting this form is posted to www.catnmsplan.com.

3.1.2. ATS Order Types

For events reported by ATSs, *atsOrderType* field is used to capture ATS-specific order types. The *orderType* and *atsOrderType* fields are not mutually exclusive; ATSs must populate both fields on applicable events. Industry Members that are not ATSs must leave the *atsOrderType* field blank.

ATSs must register their order types with CAT at least 20 business days prior to the order type becoming effective using the CAT Reporter Portal. An order type must be registered before any relevant CAT events can be submitted. An Order Type Identifier shall not be required for market and limit orders that have no other special handling instructions. Specific instructions for registering *atsOrderTypes* are available in CAT Alert 2019-01 on www.catnmsplan.com.

3.1.3. Sequence Number

ATSs must also provide a sequence number assigned by the ATS's matching engine on all events reported to CAT by the ATS. Industry Members that are not ATSs are not required to populate the *seqNum* field.

3.1.4. Display and Non-Display ATSs

ATSs are required to populate the *atsDisplayInd* indicating if the order is displayed outside of the ATS to subscribers only, or via publicly disseminated quotation data. If the order is displayed (*atsDisplayInd* = 'S', 'Y', or 'A'), the ATS is required to populate both the *displayPrice* and *displayQty* fields indicating the price and quantity at which the order was displayed. If the order is not displayed (*atsDisplayInd* = 'N'), the ATS is required to populate the *displayPrice* and *displayQty* fields with a value of '0'. Industry Members that are not ATSs must leave the *atsDisplayInd, displayPrice,* and *displayQty* fields blank.

3.1.5. CAT Reporter IMID

When reporting to CAT, Industry Members operating an ATS must populate the *CATReporterIMID* using their FINRA assigned ATS MPID.

3.2. Manual Orders

The CAT NMS Plan defines a Manual Order Event as "non-electronic communication of order-related information for which CAT Reporters must record and report the time of the event." Manual CAT events must be marked as a manual event using the *manualFlag* field and must include an electronic capture time if the manual event is captured in an order management or execution system.

Manual option events are not required until Phase 2d. Refer to Section 4.15 for additional information regarding manual options events.

Proprietary orders (both equities and options) that are simultaneously entered into an OMS/EMS upon origination are always considered electronic. However, in Phase 2b it will be acceptable to report such options events as either manual or electronic. Therefore, if an Industry Member has interpreted proprietary options orders manually entered into an OMS/EMS as manual events for Phase 2b, it will be acceptable to treat such events as manual in Phase 2b. Accordingly, if a proprietary options order is routed electronically and the Order Route event is reported in Phase 2b, the priorUnlinked flag must be populated. Beginning in Phase 2d, proprietary options orders manually initiated and simultaneously entered into an OMS/EMS must be reported to CAT as electronic events.

3.2.1. Manually Received CAT Events Immediately Systematized

Orders which are non-electronically communicated but immediately systematized (e.g., a broker received a call and directly enters the order into the order management system) must be marked as a manual event using the *manualFlag*. In this scenario, the Industry Member is required to report both the manual time of order receipt and the electronic capture time, and the same timestamp must be reported in both fields in milliseconds[3].

Orders which are received or routed via instant message (IM) or email are considered manual events. Refer to CAT FAQ C7 for additional information.

Refer to Section G of the CAT FAQs for additional information on manual orders.

3.2.2. Manual CAT Events Followed by Separate Electronic Messages

If an Industry Member routes or receives an order manually and then subsequently sends or receives an electronic message to represent the manual instruction, the following reporting requirements apply:

- All material terms and conditions of a manually received or routed order, including time of route and receipt, must be reported to CAT on the required manual event, with all relevant timestamps representing when the manual CAT event occurred.
- Additional electronic messages related to a manual order or route that do not change any material term or condition of the original order are not required to be reported to CAT as they represent a duplicate of the original order.
- If the duplicate electronic message includes a routed order identifier that could be used to link the sender's route report to the receiver's new order, and the member has the ability to include this electronic information on the manual event (referred to as a "merged" event), the Industry Member must do so.
- If the Industry Member is not able to merge the manual and electronic information in a single manual event and elects to report the duplicate electronic message independently, such messages must be reported with the *electronicDupFlag* populated as *true*, and the *manualFlag* populated as *false*. Further, the *manualOrderID* may be populated with the *orderID* of the original manual order.

[3] Refer to CAT FAQ G4 for additional information.

3.2.3. Manual Trade events and Order Fulfillment events

Trade events and Order Fulfillment events must be marked as either manual or electronic using the *manualFlag* field.

A Trade event is considered manual when the trade is executed outside of an OMS/EMS and must be manually entered before it can be trade reported. The time of execution populated in the *eventTimestamp* field is the time all terms and conditions were agreed to between the two parties, consistent with SRO and SEC rules.

An Order Fulfillment event is considered manual if the fill of the customer order occurred outside of an OMS/EMS and was manually entered into an electronic system. The fulfillment time populated in the *eventTimestamp* field would be the time the firm gave the fill to the order. If a trader manually "drags and drops" or "clicks" in an OMS to fill an order, the time of the trader's action would be the fulfillment time, and the Order Fulfillment event could be considered either manual or electronic.

3.3. Allocation Events

3.3.1. Definition and Requirements

The CAT NMS Plan defines an Allocation Report as "a report made to the Central Repository by an Industry Member that identifies the Firm Designated ID for any account(s), including subaccount(s), to which executed shares are allocated". This includes the placement of shares/contracts into the same account for which an order was originally placed, and the placement of shares/contracts into an account based on allocation instructions (e.g., subaccount allocations). In accordance with the CAT NMS Plan, allocation events are not be required to be linked to particular orders or executions.

Allocation events must be reported to CAT for all allocations to a client account, including DVP account allocations. Allocations to accounts other than a client account (e.g. proprietary accounts, step outs, correspondent flips) may optionally be reported to CAT, but must be appropriately marked in the *allocationType* field.

3.3.2. Reporting Obligation

The CAT reporting obligation for allocation events is separate and distinct from other CAT events defined in this document. While the CAT reporting obligation for other CAT events belongs to the firm receiving or originating the order, the CAT reporting obligation for allocation events belongs to the firm performing the allocation, which is generally the clearing or self-clearing firm processing the allocation.

The firm with the reporting obligation for New Order events must register the FDIDs it uses for new order reporting, and the firm with the reporting obligation for allocation events report must register the FDIDs it uses for allocation reporting.

3.3.3. Cancelling an Allocation

The cancellation of an allocation can be reported to CAT using the *cancelFlag* and *cancelTimestamp* in the MEPA event, or the MEAA event. If the cancellation is reported using the MEPA event, the *eventTimestamp* must reflect the date/time that the allocation was processed, and the *cancelTimestamp* must reflect the time that the allocation was cancelled. If the cancellation cannot be captured in the original MEPA event, it must be captured in a correction to the MEPA event. Corrections reflecting the cancellation of an allocation event on a subsequent day will not be marked late by CAT.

If the cancellation is reported using the MEAA event, the cancel information may be captured on the last Amended Allocation event reported to CAT using the same method described above. The cancel information may also be captured by reported as a 'NEW' event reflecting an update to the status of the allocation, showing that the allocation is now cancelled. The *eventTimestamp* and the *cancelTimestamp* in this scenario would both reflect the time that the allocation was cancelled.

The cancellation of an amendment without cancelling the allocation itself is reported using a new MEAA event and is not reflected using the *cancelFlag* and *cancelTimestamp.* Refer to the CAT Industry Member Reporting Scenarios document for detailed examples of how allocation amendments and cancellations must be reported to CAT.

3.4. Responses to RFQs and Solicitation

3.4.1. Scope

While Industry Members are not required to report Requests for Quotes ("RFQs") or Indications of Interests ("IOIs") to CAT, Industry Members are required to report responses to RFQs and other forms of solicitation that are firm expressions of interest to trade as described in CAT FAQ B45.

Industry Members are required to report all responses communicated directly to an Industry Member's OMS/EMS in standard electronic format (e.g. FIX) that are immediately actionable, where no further action is required in order to route/execute the order. Such responses are reportable by both the CAT Reporter responding to the RFQ solicitation ("the Responder") and the CAT Reporter receiving the response ("the Solicitor"), including responses that were not ultimately selected, and the *solicitationFlag* must be populated as 'true' by both parties. These requirements apply to both equities activity beginning in Phase 2c and options activity beginning in Phase 2d.

Manual RFQ responses are considered manual/verbal, and in accordance with the November 12, 2020 Exemptive Order filed by the SEC[4], in Phase 2c/2d, Industry Members are not required to report any manual responses/receipts. However, manual/verbal responses are expected to become reportable in future phases of CAT, as this temporary exemptive relief expires on July 31, 2023.

Industry Members are not required to report the following manual activity in Phases 2c/2d:

- Responses not communicated in standard electronic format (e.g. phone call, IM/chat).
- Responses that are communicated in standard electronic format directly to an Industry Member's OMS/EMS with an understanding that further action is required before a trade can be executed/routed (not immediately actionable).

However, once a winning bid(s) has been selected, any subsequent reportable activity must be reported to CAT. Once an order is generated as a result of the winning response, the order is required to be reported by the party sending the order and the party receiving the order. This includes scenarios where the Solicitor is required to send an order to the Responder after selection of the winning bid, or where the Responder is required to send an order to the Solicitor after selection of the winning bid. The *solicitationFlag* is not required to be populated as 'true' on any events that occur after selection of the winning bid.

Table 11: Reporting Responsibilities of Responder and Solicitor

<table>
<tr><th>Scenario</th><th colspan="2">Responder</th><th colspan="2">Solicitor</th></tr>
<tr><td colspan="5">Response is immediately actionable, no further action is required before an order can be executed/routed</td></tr>
<tr><td>Response is communicated directly to the Solicitor's OMS/EMS in standard electronic format (e.g., FIX), and no additional action is required by the Responder before a trade can be executed*</td><td>(1) New Order with solicitationFlag as 'true'</td><td>(2) Order Route to Solicitor</td><td>(3) Order Accepted for all responses received</td><td>(4) Any subsequent actions taken on the winning order</td></tr>
<tr><td colspan="5">Response is NOT immediately actionable, further action is required before an order can be executed/routed</td></tr>
</table>

[4] https://www.sec.gov/rules/exorders/2020/34-90405.pdf

Scenario	Responder		Solicitor	
Response is communicated to Solicitor in standard electronic format (e.g., FIX), but after selection of the winning response, a separate order message must be sent to the Responder before an execution can occur*	(3) Order Accepted	(4) Any subsequent actions taken	(1) New Order	(2) Order Route to Responder
Response is communicated to Solicitor in standard electronic format (e.g., FIX), but after selection of the winning response, a separate order must be sent to the Solicitor before an execution can occur*	(1) New Order	(2) Order Route to Solicitor	(3) Order Accepted	(4) Any subsequent actions taken

*The specific events reported depends on the parties to the RFQ process (IM vs. Cust) and the specific workflow of the parties involved.

<u>Industry Members Operating RFQ Platforms</u>

Industry Members that provide RFQ platforms to other Industry Members generally are required to report CAT information for responses sent through these platforms (as they themselves would be considered the Responder/Solicitor), except under the following circumstances:

1. The Industry Member providing the RFQ platform is doing so solely in a technology vendor capacity and not as a broker-dealer (e.g., the Industry Member has no involvement relating to the solicitations or responses other than providing the solicitation mechanism technology);
2. The Solicitor must have a direct relationship with the Responders and understands that the Industry Member providing the RFQ platform is doing so solely in a technology vendor capacity and not as a broker-dealer; and
3. Responders view solicitations as coming directly from the Solicitor and not the Industry Member providing the RFQ platform, for all purposes, including, but not limited to, CAT reporting, trade reporting, applicable fees, etc.

3.4.2. Reporting

If an RFQ or solicitation response was provided as an order, the responder must report its response to CAT using a New Order event and Order Route event to the solicitor. The solicitor must report the receipt of each response using an Order Accepted event.

If an RFQ or solicitation response was provided as a quote, the response would be reported to CAT using quote events. However, FINRA CAT is unaware of any workflows involving an immediately actionable quote message.

Industry Members are not required to report cancellation events for responses to an RFQ or solicitation that were ultimately not selected if the *solicitationFlag* is correctly populated as *true*.

3.5. Stop Orders

3.5.1. Stop Loss Orders

When reporting stop loss orders to CAT, Industry members must indicate the type of stop loss order that was received/originated or routed through a combination of the *handlingInstructions* and *orderType* fields.

The *handlingInstructions* value of ‘STOP’ is a Name/Value Pair that denotes the stop price and requires a numeric value representing the stop price (e.g., STOP=1.00). In instances where it is known that the order is a stop order, but the exact stop price is unknown because it is either based on an underlying condition or will be determined by the destination venue, Industry Members may populate a *handlingInstructions* value of ‘STOPF’.

When reporting *handlingInstructions* values of ‘SOQ’ (Stop on Quote), ‘SLQ’ (Stop Limit on Quote), the ‘STOP’ instruction must be reported in addition to these values to indicate the stop price on the order if it is known.

The *orderType* field for orders received/originated or routed as Stop orders must be populated as ‘MKT’, and the *orderType* field for orders received/originated or routed as Stop Limit orders must be populated as ‘LMT’. Refer to Table 12 below for additional information.

Table 12: Reporting Requirements for Stop Orders

Type of Stop Order	Description	orderType	handlingInstructions
Stop	An order that is triggered by the last sale price at which point the stopped order becomes a market order.	MKT	STOP=1.00 (or STOPF if the price is not known)
Stop Limit	An order that is triggered by the last sale price at which point the stopped order becomes a limit order.	LMT	STOP=1.00 (or STOPF if the price is not known)
Stop on Quote	An order that is triggered by a quotation at which point the stopped order becomes a market order.	MKT	STOP=1.00 (or STOPF if the price is not known) and SOQ
Stop Limit on Quote	An order that is triggered by a quotation at which point the stopped order becomes a limit order.	LMT	STOP=1.00 (or STOPF if the price is not known) and SLQ
Trailing Stop	An order that allows the stop price to increase (or decrease) by a predetermined amount or formula (e.g., a specified dollar amount, a percentage of the market price, or some other predetermined criteria) as the market price of the security advances (or declines). Once triggered, stopped order becomes a market order. Refer to CAT FAQ B61 for additional information.	MKT	TS
Trailing Stop Limit	An order that allows the stop price to increase (or decrease) by a predetermined amount or formula (e.g., a specified dollar amount, a percentage of the market price, or some other predetermined criteria) as the market price of the security advances (or declines). Once triggered, stopped order becomes a limit order. Refer to CAT FAQ B61 for additional information.	LMT	TS

In addition to reporting the receipt or origination of the order with applicable *handlingInstructions*, Industry Members are required to report an Order Effective event (MEOE) when all underlying conditions of an order (e.g., the Stop) are met, and the order becomes and remains effective until it is fully executed or cancelled. The party that was holding the order at the time the order or underlying condition became effective has the obligation to report to CAT the Order Effective event (MEOE). In scenarios where the trigger price was not explicitly captured in the *handlingInstructions* field on the related new order (e.g. Stop Formula, Trailing Stop), the *triggerPrice* field must be populated on the MEOE event.

Refer to the CAT Industry Member Reporting Scenarios document for specific examples of how these orders should be reported to CAT.

3.5.2. Stop Stock Orders

When reporting stop stock orders to CAT, Industry Members are required to report the 'SW' *handlingInstructions* indicating that the transaction resulted from an order for which a member and another party agreed that the order will be executed at stop stock price or better. The ‘SW’ *handlingInstructions* value must be paired with the stop stock price (e.g., SW=$35.00).

For stop stock orders where the entire shares quantity of the order is not being stopped, the *handlingInstructions* field must also be populated with a value of ‘SWQ’ paired with the quantity of shares being stopped (e.g., SWQ=100). When a *handlingInstructions* value of ‘SWQ’ is populated, the value of ‘SW’ paired with the stop stock price must also be populated, otherwise the record will reject for invalid *handlingInstructions*.

An MEOE event is not required when reporting stop stock transactions to CAT. Refer to the CAT Industry Member Reporting Scenarios document for specific examples of how these orders should be reported to CAT.

3.6. Conditional Orders

When reporting conditional orders to CAT, Industry Members must indicate if the order is contingent on the execution of another order using *handlingInstructions* value ‘CND’, or if the order is contingent on the occurrence of a market condition using *handlingInstructions* value ‘CMC’ (e.g., once symbol ABCD trades X# of shares, the order becomes executable). Industry members may populate both values if applicable to the order.

In addition to reporting the receipt or origination of the conditional order with applicable *handlingInstructions*, Industry Members are required to report an Order Effective event (MEOE) when all underlying conditions of the order are met and the order remains effective until it is fully executed or cancelled. The party that was holding the order at the time the order or underlying condition became effective has the obligation to report to CAT the Order Effective event. The *triggerPrice* field is not required to be reported on MEOE events for orders that are conditional on another order, a market condition, or a spread condition.

When determining if the CND or CMC *handlingInstructions* must be populated, Industry Members must consider the date and time the firm determines it has received/originated an order in its books and records. A conditional order becomes reportable once it is firmed up/confirmed. The time of receipt/origination for the sender would be the time the order was firmed up/confirmed by the sender, and the time of receipt for the receiver would be the time the firmed up/confirmed order is received from the sender. Refer to CAT FAQ B40 for additional information.

The CND and CMC *handlingInstructions* value must only be used in instances where an order is received and cannot be actioned because it does not become effective until the underlying condition is met. If the Industry Member does not consider an order to be received until the underlying condition is met and the order has become effective, then the guidance relating to the CND/CMC *handlingInstructions* and MEOE event would not apply, as the order would be considered effective upon receipt/origination. In this scenario, a New Order event must be reported to CAT reflecting the terms and conditions of the order that were applicable upon receipt, and the CND/CMC *handlingInstructions* must not be populated.

If the Industry Member receives an order that can be immediately actioned upon receipt, but the order also has underlying conditions that will change the material terms of the order when the conditions are met, then the guidance relating to the CND/CMC *handlingInstructions* and MEOE event would not apply, as the order would be considered effective upon receipt. In this scenario, a New Order event must be reported to CAT reflecting the terms and conditions of the order that were applicable upon receipt, and the CND/CMC *handlingInstructions* must not be populated. Any changes to the material terms of the order that occur as the result of an underlying condition must be reported as an Order Modified event.

If the Industry Member receives an order with a condition that may cause the order to become active or inactive multiple times throughout the day, the Industry Member must populate a value of 'CSC' (Contingent on Spread Condition) on its New Order event, and the Industry Member is not required to report an Order Effective or Order Modified event as the order becomes effective or ineffective throughout the day.

3.7. Multi-Leg Orders and Paired Orders

Paired Orders are defined for CAT reporting purposes as orders that contain both the buy and sell side that are routed to another Industry Member or exchange for crossing and/or price improvement. Orders routed or received as a pair must be reported to CAT, and all Order Route, Option Order Route, and Multi-Leg Order Route events routed in the pair must be identified using a *pairedOrderID* beginning in Phase 2d.

Paired Orders Do Not Include:

- Orders that are not treated as a paired order by the recipient such as "post and wait"
- Preferenced or directed orders that that do not contain both the buy side and the sell side

Multi-Leg orders must be reported using Multi-Leg Order events beginning in Phase 2d.

3.8. Orders Tied at a Net Price

If an equity order is tied to stock, fixed income, futures, or another product that is not reportable to CAT at a net price, Industry Members must populate the appropriate *handlingInstructions* value of 'TTS', 'TTF', 'TTO', 'TTU', or 'FUT'. This activity does not meet the definition of a multi-leg order, as these trading strategies do not contain an option leg, and must continue to be reported to CAT as equity order events in Phase 2d.

If a simple equity is tied to a simple option at a net price as part of a pairs trading strategy that does not meet the definition of a multi-leg order, the equity order must contain a *handlingInstructions* value of ‘TTSO’, and the option must contain a *handlingInstructions* value of ‘TTS’.

The equity leg of a multi-leg order is reportable in Phase 2c, and must include the *handlingInstructions* value of 'OPT', as outlined in CAT FAQ B12. This activity will be reported to CAT as multi-leg order events in Phase 2d, and the *handlingInstructions* values ‘OPT’ and ‘TTSO’ will not be required to be captured on multi-leg order events.

If a single, simple option order is tied to futures, fixed income, or another product that is not reportable to CAT, Industry Members must populate the appropriate *handlingInstructions* values of ‘TTF’, ‘TTO’, or ‘FUT’.

If an option order is tied to stock and meets the definition of a multi-leg order, Industry Members will be required to report this activity to CAT in Phase 2d. The *handlingInstructions* value of ‘TTS’ will not be required to be captured on multi-leg order events.

While this multi-leg activity may be optionally reported to CAT beginning in Phase 2b, the option legs must be reported as simple option events with a *handlingInstructions* value of ‘CMPX’. The *handlingInstructions* value of ‘TTS’ is not required.

Beginning in Phase 2d, Industry Members will be required to populate the netPrice field on equity or simple option order events with the net price of the order if the order is tied to stock, fixed income, futures, or another product that is not reportable to CAT.

4. Equity Events

This section describes Reportable Events for equities that are Eligible Securities. The following table lists each equity event type with its corresponding Message Type code.

Events and data elements that are greyed out do not apply to Phases 2a or 2c. Fields specified as Reserved for Future Use are also greyed out and must remain blank. Future enhancements to Message Types with positions that are Reserved for Future Use will occupy the available position before adding a new position.

Table 13: Equity Events

Sec	Event	Message Type	Description
4.1	New Order Event	MENO	Reported when an Industry Member originates an order, receives a customer order, originates a bunched, representative or proprietary order, or receives an order from a non-reporting foreign entity.
4.2	New Order Supplement Event	MENOS	Supplement to the New Order event, used when the New Order event exceeds the maximum length allowed, or when the orders being represented are not captured in the New Order Event. Also used to provide an FDID once known if not available at time of reporting a MENO.
4.3	Order Route Event	MEOR	Reported when an Industry Member routes an order to another broker-dealer, exchange or ATS.
4.3.1	Route Modified	MEMR	Deferred – event not required for Phase 2c.
4.3.2	Route Cancelled	MECR	Deferred – event not required for Phase 2c.
4.3.3	Order Route Supplement Event	MEORS	Supplement to the Order Route event, optionally used to populate the *routeRejectedFlag* if the route rejection is not known at the time of submission of the original Order Route event.
4.4	Order Accepted	MEOA	Reported when an Industry Member, including an ATS, accepts a routed order that originated at another broker-dealer.
4.5.1	Order Internal Route Accepted	MEIR	Reported when an order moves within an Industry Member to another desk or other department.
4.5.2	Order Internal Route Modified	MEIM	Reported when an Order Internal Route Accepted was modified.
4.5.3	Order Internal Route Cancelled	MEIC	Reported when an Order Internal Route Accepted was cancelled.
4.6.1	Child Order	MECO	Reported when an order is sliced within the desk or department it is being worked, and is assigned a new order identifier.

Sec	Event	Message Type	Description
4.6.2	Child Order Modified	MECOM	Reported when a Child Order is modified.
4.6.3	Child Order Cancelled	MECOC	Reported when a Child Order is cancelled.
4.7	Order Modified	MEOM	Reported when changes to the Material Terms of an order are made, or an order is cancel/replaced.
4.7.1	Order Modification Request	MEOMR	Deferred – event not required for Phase 2c. Reported when a customer has requested the modification of an order.
4.8	Order Modified Supplement Event	MEOMS	Supplement to the Order Modified event, used when the Order Modified event exceeds the maximum length allowed, or when the orders being represented are not captured in the Order Modified Event.
4.9	Order Adjusted	MEOJ	Used to report simple order modifications including changes to the price or quantity of the order.
4.10	Order Cancelled	MEOC	Reported when an Industry Member fully or partially cancels an order.
4.10.1	Order Cancel Request	MEOCR	Deferred – event not required for Phase 2c. Reported when a customer has requested the cancellation of an order.
4.11.1	New Quote	MENQ	Reported when quotations on equity Eligible Securities sent to a quote display facility or quote driven ATS, or a quote sent to a customer or broker-dealer that resulted in a trade.
4.11.2	Quote Received	MEQR	Reported when a quote is received by an Industry Member.
4.11.3	Quote Cancelled	MEQC	Reported when a quote is cancelled.
4.12.1	Trade Event	MEOT	Reported by the executing venue where the trade occurred, with details associated with each side of the trade.
4.12.2	Trade Supplement Event	MEOTS	Reported when there is more than one order associated with one side of a trade.
4.13.1	Order Fulfillment	MEOF	Reported when the execution of a customer/client order is not required to be reported for public dissemination. The event includes details associated with the client/customer side and firm side.
4.13.2	Order Fulfillment Supplement	MEOFS	Reported when there is more than one representative proprietary order associated with the fill of a customer order.
4.13.3	Order Fulfillment Amendment	MEFA	Reports the amendment of a previously reported fulfillment, including the full restatement of the event with applicable changes represented.
4.14.1	Post Trade Allocation	MEPA	Reported when executed shares are allocated to end customer accounts during post-trade processing.
4.14.2	Amended Allocation	MEAA	Reported when an amendment occurs to a previously reported post trade allocation.

Sec	Event	Message Type	Description
4.15	Order Effective	MEOE	Reported when an order or an underlying condition of an order becomes effective.

4.1. New Order Event

New Order events represent the beginning of the order lifecycle in CAT. An Industry Member must report a New Order event to CAT when an order is received or originated including:

- New customer orders
- Representative orders
- Proprietary orders
- Order(s) received from a foreign broker-dealer or affiliate that is not a CAT Reporter.

An order received from another CAT Reporter (US broker-dealer, ATS or an exchange) must be reported as an Order Accepted event.

Representative Orders

Industry Members are required to link representative street-side orders with the related customer order or client order being represented. The Industry Member must report a New Order event for the creation of the representative order, and populate the *representativeInd* field to indicate that it is a representative order. The Industry Member must also populate the *aggregatedOrders* field linking the representative order to the underlying orders.

Appendix C contains detailed descriptions of representative order scenarios and illustrates when marking of the representative order, linkage between the represented order and the representative order, and Order Fulfillment linkage is required.

Table 14: New Order Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE	R

Seq #	Field Name	Data Type	Description	Include Key
			Identifier> Must be unique for the Event Date and CAT Reporter IMID.	
4	type	Message Type	MENO	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	orderKeyDate	Timestamp	The date and time the *orderID* was assigned.	R
7	orderID	Text (64)	The internal order ID assigned to the order by the Industry Member. Must be unique within *orderKeyDate, CATReporterIMID*, and *symbol* combination.	R
8	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
9	eventTimestamp	Timestamp	The date/time of receipt of the order. If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or a finer increment up to nanoseconds.	R
10	manualFlag	Boolean	Must be marked as *true* if the order is received or captured manually.	R
11	electronicDupFlag	Boolean	Indicates whether this is a duplicative electronic message of a manual event.	R
12	electronicTimestamp	Timestamp	The time at which the event is systematized. Required when *manualFlag* is *true* and the event is systematized.	C
13	manualOrderKeyDate	Timestamp	The *orderKeyDate* of the related manual order. Required when *manualOrderID* is populated.	C
14	manualOrderID	Text (64)	When this is a duplicative electronic message of a previously (separately) reported manual New Order event, this field is to capture the internal *orderID* of the manual order. Required when *electronicDupFlag* is *true*.	C
15	deptType	Choice	This is the category of internal department, unit or desk originating or receiving the order.	R
16	solicitationFlag	Boolean	Indicates if the order was originated in response to an RFQ or other solicitation process. This field is not used to indicate if a registered representative of the firm solicited a client order.	R
17	RFQID	Text (64)	For New Order events representing a response to an RFQ or solicitation, the ID assigned to the related RFQ or solicitation being responded to. Must be populated when	C

Seq #	Field Name	Data Type	Description	Include Key
			available.	
18	side	Choice	The side of the order.	R
19	price	Price	The limit price of the order, required when *orderType* is 'LMT'. Must be blank when *orderType* is 'MKT'.	C
20	quantity	Real Quantity	The order quantity.	R
21	minQty	Whole Quantity	The minimum quantity of an order to be executed, required when applicable. Must be > 0.	C
22	orderType	Choice	The type of order being submitted.	R
23	timeInForce	Name/Value Pairs	The time-in-force for the order.	R
24	tradingSession	Choice	The trading session(s) during which an order is eligible to trade.	R
25	handlingInstructions	Name/Value Pairs	The order handling instructions for the order.	C
26	custDspIntrFlag	Boolean	Indicates if a customer has instructed that a limit order should not be displayed or that a block size order should be displayed.	R
27	firmDesignatedID	Text (40)	Refer to the Data Dictionary for definition and guidance for populating this field.	R
28	accountHolderType	Choice	Represents the type of beneficial owner of the account for which the order was received or originated.	R
29	affiliateFlag	Boolean	Indicates if the routing party is an affiliate of the Industry Member.	R
30	infoBarrierID	Text (20)	Specifies the identifier of the information barrier in place for a trading unit that will meet the criteria of the "no-knowledge" exception in FINRA Rule 5320.02. Any alphanumeric not containing a delimiter.	C
31	aggregatedOrders	Aggregated Orders	When applicable, the order ID of each customer order being represented. Refer to Appendix C for representative order linkage requirements.	C
Aggregated Orders – Start For each order being represented *n*, the following values are required.				
31.*n*.1	orderID	Text (64)	*orderID* of the order being represented.	R
31.*n*.2	orderKeyDate	Timestamp	*orderKeyDate* of the order being represented.	R
31.*n*.3	quantity	Real Quantity	Required when a partial quantity of the order is being represented.	C
31.*n*.4	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a	C

Seq #	Field Name	Data Type	Description	Include Key
			different *CATReporterIMID.*	
Aggregated Orders – End				
32	negotiatedTradeFlag	Boolean	Indicates whether the trade is a result of a negotiation.	R
33	representativeInd	Choice	Indicates if the order is a representative order and if linkage is required.	R
34	seqNum	Alphanumeric (40)	The sequence number assigned to the CAT event by the ATS's matching engine. Any alphanumeric not containing a delimiter. Only required for ATSs.	A
35	atsDisplayInd	Choice	Indicates if the order is displayed outside of the ATS to subscribers only, or via publicly disseminated quotation data.	A
36	displayPrice	Price	The displayed price for this order. If *atsDisplayInd* is populated as 'Y', 'S', or 'A', *displayPrice* must be the price at which the order was displayed. If the *atsDisplayInd* is 'N', *displayPrice* must be "0".	A
37	workingPrice	Price	The working price of the order at the time it was accepted. If no current *workingPrice*, value must be "0".	A
38	displayQty	Whole Quantity	The displayed quantity for this order. If the *atsDisplayInd* is populated as 'Y', 'S', or 'A', *displayQty* must be the quantity at which the order was displayed. If the *atsDisplayInd* is 'N', *displayQty* must be "0".	A
39	atsOrderType	Array	Shows the ATS-specific order type as selected from a list of order types defined by this reporter via the CAT Reporter Portal.	A
40	nbbPrice	Price	The NBBO at the moment the order was originated or received. Prices are required, quantities are optional. If no price or quantity, fields must be populated with a value of '0'.	A
41	nbbQty	Whole Quantity		A
42	nboPrice	Price		A
43	nboQty	Whole Quantity		A
44	nbboSource	Choice	Source of the NBBO data used. If *nbboSource* is 'NA', NBBO price and quantity fields must be populated with a value of '0' and the *nbboTimestamp* must be blank.	A
45	nbboTimestamp	Timestamp	The date/time at which the NBBO was referenced upon the receipt of the order. Must be blank if *nbboSource* is 'NA'.	A

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate, CATReporterIMID*, *symbol*, *orderID*
- Order Key: *aggregatedOrders.orderKeyDate, CATReporterIMID*, *symbol*, *aggregatedOrders.orderID*

- Manual Order Key: *manualOrderKeyDate*, *CATReporterIMID, symbol, manualOrderID*

4.2. New Order Supplement Event

The New Order Supplement event is a supplement to the New Order event. One New Order event can have multiple New Order Supplement events. Multiple New Order Supplement events are considered as additions, not replacements or modifications.

This event accommodates reporting in the following scenarios:

Aggregated Orders

This event accommodates reporting in scenarios when the number of Aggregated Orders included in the *aggregatedOrders* field causes the New Order event to exceed the maximum allowed message length, or when the orders being represented are not captured in the New Order Event. The *aggregatedOrders* field in the New Order Supplement event must contain the additional Aggregated Orders that were not captured in the original New Order event, or another Supplement event for the same order.

FDID

This event accommodates reporting in scenarios when an Industry Member receives an order for a new account and the new account number, on which the FDID is based, is not yet available for creation and reporting of the CAT new order event. If an FDID has not yet been created when an order has been received, the Industry Member must populate the *firmDesignatedID* field in its New Order event with a value of 'PENDING'.

Once the FDID becomes available, the Industry Member must report the actual FDID in the *firmDesignatedID* field in a New Order Supplement event. Any New Order Supplement event with an FDID populated will not be considered late for CAT reporting purposes if it is received by 8AM on T+3. Refer to the CAT CAIS Industry Member Reporting Scenarios for additional information on how the *firmDesignatedID* will be reflected in the CAIS.

Table 15: New Order Supplement Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C

Seq #	Field Name	Data Type	Description	Include Key
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MENOS	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	orderKeyDate	Timestamp	The *orderKeyDate* of the related New Order event which this event is Supplementing.	R
7	orderID	Text (64)	The *orderID* of the related New Order event which this event is Supplementing.	R
8	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
9	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
10	eventTimestamp	Timestamp	The date/time of the related New Order event which this event supplements (including scenarios in which the supplement is created at a later time).	R
11	aggregatedOrders	Aggregated Orders	When applicable, the order ID of each customer order being represented. Refer to Appendix C for representative order linkage requirements.	C
Aggregated Orders – Start For each order being represented *n*, the following values are required.				
11.*n*.1	orderID	Text (64)	*orderID* of the order being represented.	R
11.*n*.2	orderKeyDate	Timestamp	*orderKeyDate* of the order being represented.	R
11.*n*.3	quantity	Real Quantity	Required when a partial quantity of the order is being represented.	C
11.*n*.4	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
Aggregated Orders – End				
12	firmDesignatedID	Text (40)	Required when reporting a supplement to an	C

Seq #	Field Name	Data Type	Description	Include Key
			MENO event that was reported prior to the FDID being available. Refer to the Data Dictionary for definition and guidance for populating this field.	

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate, CATReporterIMID*, *symbol, orderID*
- Order Key: *aggregatedOrders.orderKeyDate, CATReporterIMID, symbol, aggregatedOrders.orderID*

4.3. Order Route

Industry Members are required to report an Order Route event to CAT in the following scenarios when an order is routed in full or in part:

- Routing to another Industry Member
- Routing to foreign broker-dealers
- Routing to exchanges
- Routing between two IMIDs (e.g. two different FINRA MPIDs) attributed to the same legal entity (i.e. the same CRD).

When routing between two IMIDs of the same legal entity, the *affiliateFlag* must be populated as *true* in accordance with CAT FAQ E27. Internal routes to another desk or department within an Industry Member are reported using an Order Internal Route Accepted event. Refer to the Order Internal Route Accepted section for more details.

Handling Instructions on Order Route Events

Handling Instructions are required to be reported on the Order Route event. The handling instructions included in this event must represent the handling instructions sent by the routing firm to the receiving destination. If the handling instructions do not change when the order is routed from the handling instructions received by the Industry Member and reported on the Order Accepted or New Order associated with the order, Industry Members may use the handling instruction code "RAR" (Routed as Received) instead of repeating each individual handling instruction.

Table 16: Order Route Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MEOR	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	orderKeyDate	Timestamp	The *orderKeyDate* of the event which is being routed.	R
7	orderID	Text (64)	The *orderID* of the order event which is being routed.	R
8	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
9	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
10	eventTimestamp	Timestamp	The date/time of the Order Route. If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or a finer increment up to nanoseconds.	R
11	manualFlag	Boolean	Must be marked as *true* if the order is routed manually.	R
12	electronicDupFlag	Boolean	Indicates whether this is a duplicative electronic message of a manual event.	R
13	electronicTimestamp	Timestamp	The time at which the event is systematized. Required when *manualFlag* is *true* and the event is systematized.	C
14	senderIMID	Industry Member ID	The IMID used to identify the Industry Member that is routing the order, known by the destination. When *destinationType* is 'F', this value must equal the *senderIMID* on the Order Accepted	C

Seq #	Field Name	Data Type	Description	Include Key
			event reported by the destination. When *destinationType* is ‘O’, this value must equal the *senderIMID* on the Order Accepted event if an Order Accepted event is reported by the destination. When *destinationType* is ‘E’, this value must equal the *routingParty* reported by the exchange on the Participant Order Accepted event. Not required when *destinationType* is ‘N’.	
15	destination	Industry Member ID / Exchange ID	When *destinationType* is ‘F’, this value is the IMID used to identify the Industry Member that is receiving this routed order, and it must equal the *receiverIMID* field on the Order Accepted event reported by the destination Industry Member. When *destinationType* is ‘O’, this value is the IMID used to identify the Industry Member that is receiving this routed order, and it must equal the *receiverIMID* field on the Order Accepted event if an Order Accepted event is reported by the destination Industry Member. When *destinationType* is ‘E’, this value is the Exchange ID of the destination exchange, and it must equal the *exchange* field on the Order Accepted event reported by the destination exchange. Not required if *destinationType* is ‘N’. If optionally populated when *destinationType* is ‘N’, CRD Prefix is not required.	C
16	destinationType	Choice	Indicates whether the destination of the route is an Industry Member, an exchange or a foreign broker-dealer. *destinationType* ‘O’ must only be populated if the *symbol* is an OTC symbol in a foreign equity security.	R
17	routedOrderID	Text (64)	The ID assigned to the order by the Industry Member when routing the order to the destination. This value must match the value for *routedOrderID* reported by the destination in their Order Accepted report. Must be unique per combination of Event Date, symbol (or optionID), *destination, senderIMID*, and *session* (applicable only on routes to exchanges). Required when *destinationType* is ‘F’, ‘E’, or ‘O’, and *manualFlag* is *false*.	C
18	session	Text (40)	The session ID used when routing the order. Must only be populated when *destinationType* is ‘E’. This must match the session ID reported in the Participant Order Accepted event by the receiving exchange.	C
19	side	Choice	The side of the order.	R

Seq #	Field Name	Data Type	Description	Include Key
20	price	Price	The limit price of the order, required when *orderType* is 'LMT'. Must be blank when *orderType* is 'MKT'.	C
21	quantity	Real Quantity	The order quantity.	R
22	minQty	Whole Quantity	The minimum quantity of an order to be executed. Required when applicable. Must be > 0.	C
23	orderType	Choice	The type of order being routed.	R
24	timeInForce	Name/Value Pairs	The Time-in-Force for the order.	R
25	tradingSession	Choice	The trading session(s) during which an order is eligible to trade.	R
26	affiliateFlag	Boolean	Indicates if the order is being routed to an affiliate of the Industry Member.	R
27	isoInd	Choice	Indicates the order was routed as an Intermarket Sweep Order.	R
28	handlingInstructions	Name/Value Pairs	The order handling instructions for the order.	C
29	routeRejectedFlag	Boolean	Indicates the routed order was not accepted by the destination (rejected or no response) when marked *true*.	R
30	dupROIDCond	Boolean	Indicates when a modification to an order previously routed to a national securities exchange requires the use of the original *routedOrderID*. This field can only be populated as *true* on Order Route events when d*estinationType* is 'E'.	R
31	seqNum	Alphanumeric (40)	The sequence number assigned to the CAT event by the ATS's matching engine. Any alphanumeric not containing a delimiter.	A

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate, CATReporterIMID, symbol, orderID*
- Route Linkage Key: Event Date, *senderIMID, destination, symbol, session, routedOrderID*

4.3.1. Route Modified Event (Phase 2d)

<Deferred – event not required for Phase 2c.>

4.3.2. Route Cancelled Event (Phase 2d)

<Deferred – event not required for Phase 2c.>

4.3.3. Order Route Supplement Event

The Order Route Supplement event is a supplement to the Order Route event. Order Route Supplement events are considered as additions to an Order Route event, not replacements or modifications. This event accommodates reporting in scenarios where a route is rejected by the venue to which an order was routed, and the Industry Member chooses to report the *routeRejectedFlag* in this separate Order Route Supplement event created at a later time on the same day.

Table 17: Order Route Supplement Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MEORS	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	orderKeyDate	Timestamp	The *orderKeyDate* of the related Order Route event this event is supplementing.	R
7	orderID	Text (64)	The *orderID* of the related Order Route event which this event is supplementing.	R
8	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
9	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
10	eventTimestamp	Timestamp	The date/time of the related Order Route event this event supplements (including scenarios in which the supplement is created at a later time).	R
11	manualFlag	Boolean	The *manualFlag* of the related Order Route event this event supplements. Must be	R

Seq #	Field Name	Data Type	Description	Include Key
			marked as *true* if the order is routed manually.	
12	senderIMID	Industry Member ID	The *senderIMID* of the Order Route event that this event supplements. When *destinationType* is ‘F’, this value must equal the *senderIMID* on the Order Accepted event reported by the destination. When *destinationType* is ‘O’, this value must equal the *senderIMID* on the Order Accepted event if an Order Accepted event is reported by the destination. When *destinationType* is ‘E’, this value must equal the *routingParty* reported by the exchange on the Participant Order Accepted event. Not required when *destinationType* is ‘N’.	C
13	destination	Industry Member ID / Exchange ID	The *destination* of the Order Route event that this event supplements. When *destinationType* is ‘F’, this value is the IMID used to identify the Industry Member that is receiving this routed order, and it must equal the *receiverIMID* field on the Order Accepted event reported by the destination Industry Member. When *destinationType* is ‘O’, this value is the IMID used to identify the Industry Member that is receiving this routed order, and it must equal the *receiverIMID* field on the Order Accepted event if an Order Accepted event is reported by the destination Industry Member. When *destinationType* is ‘E’, this value is the Exchange ID of the destination exchange, and it must equal the *exchange* field on the Order Accepted event reported by the destination exchange. Not required if *destinationType* is ‘N’.	C
14	destinationType	Choice	The *destinationType* of the Order Route event that this event supplements. Indicates whether the destination of the route is an Industry Member, an exchange or a foreign broker-dealer. *destinationType* ‘O’ must only be populated if the *symbol* is an OTC symbol in a foreign equity security.	R
15	routedOrderID	Text (64)	The ID assigned to the order by the Industry Member when routing the order to the destination. Must match the *routedOrderID* of the Order Route event that this event supplements. Required when *destinationType* is ‘F’, ‘E’, or ‘O’, and *manualFlag* is *false*.	C
16	session	Text (40)	The *session* of the Order Route event that this event supplements. Must only be populated when *destinationType*	C

Seq #	Field Name	Data Type	Description	Include Key
			is ‘E’. This must match the session ID reported in the Participant Order Accepted event by the receiving exchange.	
17	routeRejectedFlag	Boolean	Indicates the routed order was not accepted by the destination (rejected or no response) when marked *true*.	R

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate, CATReporterIMID, symbol, orderID*
- Route Linkage Key: Event Date, *senderIMID, destination, symbol, session, routedOrderID*

4.4. Order Accepted

An Order Accepted event must be reported to CAT when an Industry Member receives an order from another CAT Reporter (i.e., Industry Member, ATS or exchange), or from another IMID belonging to the same Industry Member (i.e., the same CRD).

Until Phase 2d, there will be some lifecycles beginning at the Order Accepted event, as small non-OATS reporting Industry Members are not required to report until December 2021.

New customer orders, orders received from a non-broker-dealer affiliate, and orders received from a non-reporting foreign broker-dealer must be reported using a New Order event.

Table 18: Order Accepted Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is ‘RPR’. Must be blank when *actionType* is ‘NEW’.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MEOA	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the	O

Seq #	Field Name	Data Type	Description	Include Key
			filename.	
6	orderKeyDate	Timestamp	The date and time the *orderID* was assigned.	R
7	orderID	Text (64)	Order ID assigned to the order by the Industry Member upon acceptance. Must be unique within *orderKeyDate, CATReporterIMID*, and *symbol* combination.	R
8	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
9	eventTimestamp	Timestamp	The date/time of receipt of the order. If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or a finer increment up to nanoseconds.	R
10	manualFlag	Boolean	Must be marked as *true* if the order is received or captured manually.	R
11	electronicDupFlag	Boolean	Indicates whether this is a duplicative electronic message of a manual event.	R
12	electronicTimestamp	Timestamp	The time at which the event is systematized. Required when *manualFlag* is *true* and the event is systematized.	C
13	receiverIMID	Industry Member ID	The IMID of the Industry Member receiving the order. When *senderType* is 'F', this value must equal the *destination* field on the Order Route event reported by the routing Industry Member. When *senderType* is 'O', this value must equal the *destination* on the Order Route event if an Order Route event is reported by the destination. When *senderType* is 'E', this value must equal the *routingParty* on the Order Route event reported by the exchange.	R
14	senderIMID	Industry Member ID / Exchange ID	When *senderType* is 'F', this value is the IMID of the sending Industry Member from which the order is routed, and must equal *senderIMID* in the Order Route event reported by the routing Industry Member. When *senderType* is 'O', this value is the IMID of the sending Industry Member from which the order is routed, and must equal the *senderIMID* in the Order Route event if an Order Route event is reported by the routing Industry Member. When *senderType* is 'E', this value is the Exchange ID of the sending entity from which the order is routed, and must equal the *exchange* field in the Order Route event reported by the exchange.	R
15	senderType	Choice	Indicates the type of origin from which the	R

Seq #	Field Name	Data Type	Description	Include Key
			order is routed. *senderType* 'O' must only be populated if the *symbol* is an OTC symbol in a foreign equity security.	
16	routedOrderID	Text (64)	The ID for the order as sent by the routing entity. Must be unique per combination of Event Date, symbol (or optionID), *senderIMID*, and *receiverIMID.* Required when *manualFlag* is *false*.	C
17	manualOrderKeyDate	Timestamp	The *orderKeyDate* of the related manual order. Required when *manualOrderID* is populated.	C
18	manualOrderID	Text (64)	When this is a duplicative electronic message of a previously (separately) reported manual Order Accepted event, this field is to capture the internal order ID of the manual order. Required when *electronicDupFlag* is *true.*	C
19	affiliateFlag	Boolean	Indicates if the routing party is an affiliate of the Industry Member.	R
20	deptType	Choice	This is the category of internal department, unit or desk receiving the order.	R
21	side	Choice	The side of the order.	R
22	price	Price	The limit price of the order, required when *orderType* is 'LMT'. Must be blank when *orderType* is 'MKT'.	C
23	quantity	Real Quantity	The order quantity.	R
24	minQty	Whole Quantity	The minimum quantity of an order to be executed. Required when applicable. Must be > 0.	C
25	orderType	Choice	The type of order as routed to the destination reporting the accepted event.	R
26	timeInForce	Name/Value Pairs	The Time-in-Force for the order.	R
27	tradingSession	Choice	The trading session(s) during which an order is eligible to trade.	R
28	isoInd	Choice	Indicates the order was accepted as an Intermarket Sweep Order.	R
29	handlingInstructions	Name/Value Pairs	The order handling instructions for the order.	C
30	custDspIntrFlag	Boolean	Indicates if a customer has instructed that a limit order should not be displayed or that a block size order should be displayed.	R
31	infoBarrierID	Text (20)	Specifies the identifier of the information barrier in place for a trading unit that will meet the criteria of the "no-knowledge" exception in FINRA Rule 5320.02. Any alphanumeric not containing a delimiter.	C
32	seqNum	Alphanumeric (40)	The sequence number assigned to the CAT event by the ATS's matching engine. Any	A

Seq #	Field Name	Data Type	Description	Include Key
			alphanumeric not containing a delimiter.	
33	atsDisplayInd	Choice	Indicates if the order is displayed outside of the ATS to subscribers only, or via publicly disseminated quotation data.	A
34	displayPrice	Price	The displayed price for the order. If *atsDisplayInd* is populated as 'Y', 'S', or 'A', *displayPrice* must be the price at which the order was displayed. If the *atsDisplayInd* is 'N', *displayPrice* must be "0".	A
35	workingPrice	Price	The working price of the order at the time it was accepted. If no current *workingPrice*, value must be "0".	A
36	displayQty	Whole Quantity	The displayed quantity of the order. If the *atsDisplayInd* is populated as 'Y', 'S', or 'A', *displayQty* must be the quantity at which the order was displayed. If the *atsDisplayInd* is 'N', *displayQty* must be "0".	A
37	atsOrderType	Array	Shows the ATS-specific order type as selected from a list of order types defined by this Industry Member via the CAT Reporter Portal.	A
38	nbbPrice	Price	The NBBO at the moment the order was received. Prices are required, quantities are optional. If no price or quantity, fields must be populated with a value of '0'.	A
39	nbbQty	Whole Quantity		A
40	nboPrice	Price		A
41	nboQty	Whole Quantity		A
42	nbboSource	Choice	Source of the NBBO data used. If *nbboSource* is 'NA', NBBO price and quantity fields must be populated with a value of '0' and the *nbboTimestamp* must be blank.	A
43	nbboTimestamp	Timestamp	The date/time at which the NBBO was referenced upon the receipt of the order. Must be blank if *nbboSource* is 'NA'.	A
44	solicitationFlag	Boolean	Indicates if the order was received in response to an RFQ or other solicitation process. This field is not used to indicate if a registered representative of the firm solicited a client order.	R

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate, CATReporterIMID, symbol, orderID*
- Route Linkage Key: Event Date, *senderIMID, receiverIMID, symbol, routedOrderID*
- Manual Order Key: *manualOrderKeyDate*, *CATReporterIMID, symbol, manualOrderID*

4.5. Order Internal Route Accepted

An Order Internal Route Accepted event must be reported when an order is passed to a different department or desk within the *CATReporterIMID*. Routes between different IMIDs attributed to the same Industry Member must be reported as Order Route and Order Accepted events.

An Order Internal Route Accepted event is required to be reported from the perspective of the recipient desk, and indicates that an order was received by an internal destination. In Phase 2c, Industry Members may choose to assign a new Order Key to an Order Internal Route Accepted event. If a new *orderID* is assigned, the *parentOrderID* must be populated with the *orderID* of the event that was internally routed, and the *parentOrderKeyDate* must be populated. In Phase 2d, Industry Members will be required to assign a new Order Key to all Internal Route Accepted events. A unique *orderID* must be assigned, the *parentOrderID* must be populated with the *orderID* of the event that was internally routed, and the *parentOrderKeyDate* must be populated.

An Industry Member may generate child orders using the Child Order event prior to routing internally to another desk. This approach is acceptable for CAT reporting and will not result in unlinked events.

4.5.1. Order Internal Route Accepted

Table 19: Internal Route Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MEIR	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	orderKeyDate	Timestamp	The date and time the *orderID* was assigned.	R
7	orderID	Text (64)	When a new Order Key is assigned, the internal order ID assigned to the order by the Industry Member. Must be unique within	R

Seq #	Field Name	Data Type	Description	Include Key
			orderKeyDate, CATReporterIMID, and *symbol* combination. When a new Order Key is not assigned, the *orderID* of the event that was internally routed. In Phase 2d, Industry Members will be required to assign a new Order Key to events that were routed internally.	
8	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
9	parentOrderKeyDate	Timestamp	If a new Order ID has been assigned, this is the *orderKeyDate* of the event from which the Order Internal Route Accepted event originated. Required when the *parentOrderID* is populated.	C
10	parentOrderID	Text (64)	If a new Order ID has been assigned, this is the *orderID* of the event from which the Order Internal Route Accepted event originated. When populated, the *parentOrderID* must not be equal to the *orderID* within the record. Required when the *parentOrderKeyDate* is populated. In Phase 2d, Industry Members will be required to assign a new Order Key to orders routed internally.	C
11	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
12	eventTimestamp	Timestamp	The date/time of receipt by the receiving desk. If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or a finer increment up to nanoseconds.	R
13	manualFlag	Boolean	Must be marked as *true* if the order is routed to another desk manually.	R
14	electronicTimestamp	Timestamp	The time at which the event is systematized. Required when *manualFlag* is *true* and the event is systematized.	C
15	deptType	Choice	The category of department, unit, or desk that received this Order Internal Route Accepted event.	R
16	receivingDeskType	Choice	Indicates the type of desk or department receiving the order. More granular than the field *deptType*.	R
17	infoBarrierID	Text (20)	Specifies the identifier of the information	C

Seq #	Field Name	Data Type	Description	Include Key
			barrier in place for the desk to which the order was routed that will meet the criteria of the "no-knowledge" exception in FINRA Rule 5320.02. Any alphanumeric not containing a delimiter.	
18	side	Choice	The side of the order.	R
19	price	Price	The limit price of the order, required when *orderType* is 'LMT'. Must be blank when *orderType* is 'MKT'.	C
20	quantity	Real Quantity	The order quantity.	R
21	minQty	Whole Quantity	The minimum quantity of an order to be executed. Required when applicable. Must be > 0.	C
22	orderType	Choice	The type of order received from the routing desk or department.	R
23	handlingInstructions	Name/Value Pairs	The order handling instructions for the order.	C
24	timeInForce	Name/Value Pairs	The Time-in-Force for the order.	R
25	tradingSession	Choice	The trading session(s) during which an order is eligible to trade.	R

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate, CATReporterIMID, symbol, orderID*
- Parent Order Key: *parentOrderKeyDate, CATReporterIMID, symbol*, and *parentOrderID*

4.5.2. Order Internal Route Modified

Industry Members must report an Order Internal Route Modified event to CAT when the Material Terms of the internal route have been changed (e.g., price, quantity). All attributes and Material Terms of the modified internal route listed on this event must be restated with the modification(s) reflected.

Table 20: Internal Route Modified Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE	R

Seq #	Field Name	Data Type	Description	Include Key
			Identifier> Must be unique for the Event Date and CAT Reporter IMID.	
4	type	Message Type	MEIM	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	orderKeyDate	Timestamp	When a new Order Key is assigned, the date and time the *orderID* was assigned. When a new Order Key is not assigned, the *orderKeyDate* of the order that was internally routed.	R
7	orderID	Text (64)	When a new Order Key is assigned, the internal order ID assigned to the order by the Industry Member. Must be unique within *orderKeyDate, CATReporterIMID*, and *symbol* combination. When a new Order Key is not assigned, the *orderID* of the event that was internally routed.	R
8	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
9	priorOrderKeyDate	Timestamp	If a new Order ID has been assigned, this is the *orderKeyDate* of the event being modified.	C
10	priorOrderID	Text (64)	If a new Order ID has been assigned, this is the *orderID* of the event being modified.	C
11	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
12	eventTimestamp	Timestamp	The date/time the internal route was modified (e.g., the time that the order was confirmed to be modified in the firm's OMS/EMS). If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or a finer increment up to nanoseconds.	R
13	manualFlag	Boolean	Must be marked as *true* if the internal route is modified manually.	R
14	electronicTimestamp	Timestamp	The time at which the event is systematized. Required when *manualFlag* is *true* and the event is systematized.	C
15	deptType	Choice	The category of department, unit, or desk that received the internal route.	R

Seq #	Field Name	Data Type	Description	Include Key
16	receivingDeskType	Choice	Indicates the type of desk that received the internal route. More granular than the field *deptType*.	R
17	infoBarrierID	Text (20)	Specifies the identifier of the information barrier in place for the desk to which the order was routed that will meet the criteria of the “no-knowledge” exception in FINRA Rule 5320.02. Any alphanumeric not containing a delimiter.	C
18	initiator	Choice	Indicates who initiated the internal route modification.	R
19	side	Choice	The side of the order.	R
20	price	Price	The limit price of the order, required when *orderType* is ‘LMT’. Must be blank when *orderType* is ‘MKT’.	C
21	quantity	Real Quantity	The order quantity.	R
22	minQty	Whole Quantity	The minimum quantity of an order to be executed. Required when applicable. Must be > 0.	C
23	leavesQty	Real Quantity	The number of shares of the order left open at the receiving desk after the modification has occurred. Must be less than or equal to *quantity*.	R
24	orderType	Choice	The type of order received from the routing desk or department.	R
25	handlingInstructions	Name/Value Pairs	The order handling instructions for the order.	C
26	timeInForce	Name/Value Pairs	The Time-in-Force for the order.	R
27	tradingSession	Choice	The trading session(s) during which an order is eligible to trade.	R

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate, CATReporterIMID*, *symbol, orderID*
- Prior Order Key: *priorOrderKeyDate*, *CATReporterIMID, symbol*, and *priorOrderID*

4.5.3. Order Internal Route Cancelled

If an internal route is cancelled, an Order Internal Route Cancelled event must be reported. Partial cancellations may be reported using an Order Internal Route Modified event or Order Internal Route Cancelled event with *leavesQty*.

Table 21: Internal Route Cancelled Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MEIC	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	orderKeyDate	Timestamp	The *orderKeyDate* of the internal route which is being cancelled.	R
7	orderID	Text (64)	The *orderID* of the internal route which is being cancelled.	R
8	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
9	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
10	eventTimestamp	Timestamp	The date/time the internal route was cancelled (e.g., the time that the order was confirmed to be cancelled in the firm's OMS/EMS). If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or a finer increment up to nanoseconds.	R
11	manualFlag	Boolean	Must be marked as *true* if the order is cancelled manually.	R
12	electronicTimestamp	Timestamp	The time at which the event is systematized. Required when *manualFlag* is *true* and the event is systematized.	C
13	cancelQty	Real Quantity	The quantity being cancelled.	R
14	leavesQty	Real Quantity	The number of shares of the order left open at the receiving desk after the modification has occurred.	R

Seq #	Field Name	Data Type	Description	Include Key
15	initiator	Choice	Indicates who initiated the internal route cancellation.	R

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate, CATReporterIMID, symbol, orderID*

4.6. Child Order

The Child Order is used to represent instances when an order is sliced within the desk or department it is being worked, and is assigned a new order identifier. While all CAT reportable activity must be reported to CAT in applicable phases, Child Order events are not required to be utilized for CAT reporting. These event types are for the convenience of Industry Members to help model these types of order handling scenarios.

Child Order events are defined to include only the key data elements that may be changed when the event is created including fields to link to the parent order. The following rules apply with respect to Child Orders:

1. Child Order events can only be reported when new order IDs are assigned within the same desk. An Order Internal Route Accepted event must be reported when routed to another desk.
2. A child order may be generated off of another child order without limitation.
3. Child Orders must belong to the same FDID as the parent order. Child Orders must not be used to create representative orders. If the FDID changes, a representative New Order event must be reported and not a Child Order.
4. Child Orders must ***not*** be used for reporting equity legs of a multi-leg option order.

4.6.1. Child Order Event

Table 22: Child Order Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm.	R

Seq #	Field Name	Data Type	Description	Include Key
			Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	
4	type	Message Type	MECO	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	orderKeyDate	Timestamp	The date and time the *orderID* was assigned.	R
7	orderID	Text (64)	The internal order ID assigned to the child order by the Industry Member. Must be unique with the *orderKeyDate*, *CATReporterIMID*, and *symbol* combination.	R
8	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
9	parentOrderKeyDate	Timestamp	The *orderKeyDate* of the event from which the Child Order originated.	R
10	parentOrderID	Text (64)	The *orderID* of the event from which the Child Order originated. The *parentOrderID* must not be equal to the *orderID* within the record.	R
11	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
12	eventTimestamp	Timestamp	The date/time at which the child order was originated.	R
13	side	Choice	The side of the order.	R
14	price	Price	The limit price of the order, required when *orderType* is ‘LMT’. Must be blank when *orderType* is ‘MKT’.	C
15	quantity	Real Quantity	The Child order quantity.	R
16	minQty	Whole Quantity	The minimum quantity of an order to be executed. Required when applicable. Must be > 0.	C
17	orderType	Choice	The type of order.	R
18	timeInForce	Name/Value Pairs	The Time-in-Force for the order.	R
19	tradingSession	Choice	The trading session(s) during which an order is eligible to trade.	R
20	handlingInstructions	Name/Value Pairs	The order handling instructions for the order.	C
21	seqNum	Alphanumeric (40)	The sequence number assigned to the CAT event by the ATS’s matching engine. Any alphanumeric not containing a delimiter.	A

Seq #	Field Name	Data Type	Description	Include Key
22	atsDisplayInd	Choice	Indicates if the order is displayed outside of the ATS to subscribers only, or via publicly disseminated quotation data.	A
23	displayPrice	Price	The displayed price for this order. If *atsDisplayInd* is populated as 'Y', 'S', or 'A', *displayPrice* must be the price at which the order was displayed. If the *atsDisplayInd* is 'N', *displayPrice* must be "0".	A
24	workingPrice	Price	The working price of the order at the time it was originated or received. If no current *workingPrice*, value must be "0".	A
25	displayQty	Whole Quantity	The displayed quantity for this order. If the *atsDisplayInd* is populated as 'Y', 'S', or 'A', *displayQty* must be the quantity at which the order was displayed. If the *atsDisplayInd* is 'N', *displayQty* must be "0".	A
26	nbbPrice	Price	The NBBO at the moment the order was originated or received. Prices are required, quantities are optional. If no price or quantity, fields must be populated with a value of '0'.	A
27	nbbQty	Whole Quantity		A
28	nboPrice	Price		A
29	nboQty	Whole Quantity		A
30	nbboSource	Choice	Source of the NBBO data used. If *nbboSource* is 'NA', NBBO price and quantity fields must be populated with a value of '0' and the *nbboTimestamp* must be blank.	A
31	nbboTimestamp	Timestamp	The date/time at which the NBBO was referenced upon the receipt of the order. Must be blank if *nbboSource* is 'NA'.	A

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate, CATReporterIMID, symbol, orderID*
- Parent Order Key: *parentOrderKeyDate, CATReporterIMID, symbol, parentOrderID*

4.6.2. Child Order Modified

Industry Members must report a Child Order Modified event to CAT when the Material Terms of the child order have been changed (e.g., price, quantity). All attributes and Material Terms of the modified child order listed on this event must be restated with the modification(s) reflected. A Child Order Modified event may not be used when modifying an Order Internal Route Accepted event.

Table 23: Child Order Modified Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MECOM	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	orderKeyDate	Timestamp	When a new Order Key is assigned, the date and time the *orderID* was assigned. When a new Order Key is not assigned, the *orderKeyDate* of the Child Order event which is being modified.	R
7	orderID	Text (64)	When a new Order Key is assigned, the internal order ID assigned to the order by the Industry Member. Must be unique within *orderKeyDate, CATReporterIMID*, and *symbol* combination. When a new Order Key is not assigned, the *orderID* of the Child Order being modified.	R
8	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
9	priorOrderKeyDate	Timestamp	If a new Order ID has been assigned, this is the *orderKeyDate* of the event being modified.	C
10	priorOrderID	Text (64)	If a new Order ID has been assigned, this is the *orderID* of the event being modified. When populated, the *priorOrderID* must not be equal to the *orderID* within the record.	C
11	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
12	eventTimestamp	Timestamp	The date/time at which the child order was modified (e.g., the time that the child order was confirmed to be modified in the firm's	R

Seq #	Field Name	Data Type	Description	Include Key
			OMS/EMS).	
13	side	Choice	The side of the order.	R
14	price	Price	The limit price of the order, required when *orderType* is ‘LMT’. Must be blank when *orderType* is ‘MKT’.	C
15	quantity	Real Quantity	The Child order quantity.	R
16	minQty	Whole Quantity	The minimum quantity of an order to be executed. Must be > 0.	C
17	leavesQty	Real Quantity	The number of shares of the Child Order left open after the modification has occurred. Must be less than or equal to *quantity*.	R
18	orderType	Choice	The type of order.	R
19	timeInForce	Name/Value Pairs	The Time-in-Force for the order.	R
20	tradingSession	Choice	The trading session(s) during which an order is eligible to trade.	R
21	handlingInstructions	Name/Value Pairs	The order handling instructions for the order.	C
22	seqNum	Alphanumeric (40)	The sequence number assigned to the CAT event by the ATS’s matching engine. Any alphanumeric not containing a delimiter.	A
23	atsDisplayInd	Choice	Indicates if the order is displayed outside of the ATS to subscribers only, or via publicly disseminated quotation data.	A
24	displayPrice	Price	The displayed price of this order. If *atsDisplayInd* is populated as ‘Y’, ‘S’, or ‘A’, *displayPrice* must be the price at which the order was displayed. If the *atsDisplayInd* is ‘N’, *displayPrice* must be “0”.	A
25	workingPrice	Price	The working price of the order at the time it was originated. If no current *workingPrice*, value must be “0”.	A
26	displayQty	Whole Quantity	The displayed quantity of the order. If the *atsDisplayInd* is populated as ‘Y’, ‘S’, or ‘A’, *displayQty* must be the quantity at which the order was displayed. If the *atsDisplayInd* is ‘N’, *displayQty* must be “0”.	A
27	nbbPrice	Price	The NBBO at the moment the order was routed. Prices are required, quantities are optional. If no price or quantity, fields must be populated with a value of ‘0’.	A
28	nbbQty	Whole Quantity		A
29	nboPrice	Price		A
30	nboQty	Whole Quantity		A
31	nbboSource	Choice	Source of the NBBO data used. If *nbboSource* is ‘NA’, NBBO price and quantity fields must be populated with a value of ‘0’ and the *nbboTimestamp* must be blank.	A
32	nbboTimestamp	Timestamp	The date/time at which the NBBO was referenced upon the receipt of the order. Must be blank if *nbboSource* is ‘NA’.	A

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate, CATReporterIMID*, *symbol, orderID*
- Prior Order Key: *priorOrderKeyDate*, *CATReporterIMID, symbol*, and *priorOrderID*

4.6.3. Child Order Cancelled

If a child order is cancelled, a Child Order Cancelled event must be reported. Partial cancellations may be reported using a Child Order Modified event or Child Order Cancelled event with *leavesQty*.

Table 24: Child Order Cancelled Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MECOC	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	orderKeyDate	Timestamp	The *orderKeyDate* of the Child Order event which is being cancelled.	R
7	orderID	Text (64)	The *orderID* of the Child Order event which is being cancelled.	R
8	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
9	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
10	eventTimestamp	Timestamp	The date/time at which the child order was cancelled (e.g., the time that the child order	R

Seq #	Field Name	Data Type	Description	Include Key
			was confirmed to be cancelled in the firm's OMS/EMS).	
11	side	Choice	The side of the order.	R
12	cancelQty	Real Quantity	The quantity of the Child order being cancelled.	R
13	leavesQty	Real Quantity	The number of shares of the Child Order left open after the cancellation. Full cancellation will result in a zero in this field.	R
14	reservedForFutureUse		Field is Reserved for Future Use and must remain blank.	
15	seqNum	Alphanumeric (40)	The sequence number assigned to the CAT event by the ATS's matching engine. Any alphanumeric not containing a delimiter.	A

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate, CATReporterIMID, symbol, orderID*

4.7. Order Modified and Cancel/Replace Event

Industry Members must report an Order Modified event to CAT when the Material Terms of an order have been changed (e.g., price, quantity) or when an order is cancel/replaced. All attributes and Material Terms of the modified order listed on this event must be restated with the modification(s) reflected. If the order is a representative order, the *aggregatedOrders* field must be restated every time the order is modified or cancel/replaced. Changes to the orders being represented in the *aggregatedOrders* field are considered a modification to the order. The *side* field is required to be reported, but side adjustments are only allowed for same-side changes, including changes between Short Sale and Sell Long.

If a modification results in the generation of new order with a new Order ID which replaces the prior order, the *orderID* field must capture the identifier for the new order, and the prior order fields must reflect the order that is being replaced. If the order has been modified more than once with a new *orderID* assigned with each modification, the *priorOrderID* must refer to *orderID* of the immediately preceding modification which will not be the original Order ID. If the *orderID* remains the same during the modification, the *priorOrderID* must remain blank.

Table 25: Order Modified and Cancel/Replace Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MEOM	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	orderKeyDate	Timestamp	When a new Order Key is assigned, the date and time the *orderID* was assigned. When a new Order Key is not assigned, the *orderKeyDate* of the CAT event which is being modified.	R
7	orderID	Text (64)	When a new Order Key is assigned, the internal order ID assigned to the order by the Industry Member. Must be unique within *orderKeyDate, CATReporterIMID*, and *symbol* combination. When a new Order Key is not assigned, the *orderID* of the Order Modified and Cancel/Replace event which is being modified.	R
8	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
9	priorOrderKeyDate	Timestamp	If a new Order Key has been assigned, this is the *orderKeyDate* of the event being modified.	C
10	priorOrderID	Text (64)	If a new Order Key has been assigned, this is the *orderID* of the event being modified. When populated, the *priorOrderID* must not be equal to the *orderID* within the record.	C
11	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C

Seq #	Field Name	Data Type	Description	Include Key
12	eventTimestamp	Timestamp	The date/time the order was modified (e.g., the time that the order was confirmed to be modified in the firm's OMS/EMS). If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or a finer increment up to nanoseconds.	R
13	manualFlag	Boolean	Must be marked as *true* if the order is modified or replaced manually.	R
14	manualOrderKeyDate	Timestamp	The *orderKeyDate* of the related manual order. Required when *manualOrderID* is populated.	C
15	manualOrderID	Text (64)	When this is a duplicative electronic message of a previously (separately) reported manual Order Modified and Cancel/Replaced event, this field is to capture the internal order ID of the manual order. Required when *electronicDupFlag* is *true.*	C
16	electronicDupFlag	Boolean	Indicates whether this is a duplicative electronic message of a manual event.	R
17	electronicTimestamp	Timestamp	The time at which the event is systematized. Required when *manualFlag* is *true* and the event is systematized.	C
18	receiverIMID	Industry Member ID	Required when the modification is received from an Industry Member or an exchange. The IMID of the Industry Member receiving the routed order modification. When *senderType* is 'F', this value must equal the *destination* field on the Order Route event reported by the routing Industry Member. When *senderType* is 'O', this value must equal the *destination* on the Order Route event if an Order Route event is reported by the destination. When *senderType* is 'E', this value must equal the *routingParty* on the Participant Order Modify Route reported by the exchange.	C
19	senderIMID	Industry Member ID / Exchange ID	Required when the modification is received from an Industry Member or an exchange. When *senderType* is 'F', this value is the IMID of the sending Industry Member from which the order is routed, and must equal the *senderIMID* in the Order Route event reported by the routing Industry Member. When *senderType* is 'O', this value is the IMID of the sending Industry Member from which the order is routed, and must equal the *senderIMID* in the Order Route event if an Order Route event is reported by the routing Industry Member.	C

Seq #	Field Name	Data Type	Description	Include Key
			When *senderType* is ‘E’, this value is the Exchange ID of the sending entity from which the order is routed, and must equal the *exchange* field in the Participant Order Modify Route event reported by the exchange.	
20	senderType	Choice	Required when the modification is received from an Industry Member or an exchange. Indicates the type of origin from which the order is routed. *senderType* ‘O’ must only be populated if the *symbol* is an OTC symbol in a foreign equity security.	C
21	routedOrderID	Text (64)	The ID for the order as sent by the routing entity. Must be unique per combination of Event Date, symbol (or optionID), *senderIMID*, and *receiverIMID.* Required when *senderType* is ‘F’, ‘E’, or ‘O’, and *manualFlag* is *false*.	C
22	reservedForFutureUse		Field is Reserved for Future Use and must remain blank.	
23	reservedForFutureUse		Field is Reserved for Future Use and must remain blank.	
24	reservedForFutureUse		Field is Reserved for Future Use and must remain blank.	
25	reservedForFutureUse		Field is Reserved for Future Use and must remain blank.	
26	initiator	Choice	Indicates who initiated the order modification.	R
27	side	Choice	The side of the order. For this Reportable Event, only same-side adjustments are allowed (e.g., sell long to short sell).	R
28	price	Price	The limit price of the order, required when *orderType* is ‘LMT’. Must be blank when *orderType* is ‘MKT’.	C
29	quantity	Real Quantity	The order quantity.	R
30	minQty	Whole Quantity	The minimum quantity of an order to be executed. Required when applicable. Must be > 0.	C
31	leavesQty	Real Quantity	The number of shares of the order left open after the modification has occurred. Must be less than or equal to *quantity*.	R
32	orderType	Choice	The type of order being submitted (e.g., market, limit).	R
33	timeInForce	Name/Value Pairs	The time-in-force for the order (e.g. DAY, IOC, GTC).	R
34	tradingSession	Choice	The trading session(s) during which an order is eligible to trade.	R
35	isoInd	Choice	Indicates the order was an Intermarket Sweep Order.	R

Seq #	Field Name	Data Type	Description	Include Key
36	handlingInstructions	Name/Value Pairs	The order handling instructions for the order.	C
37	custDspIntrFlag	Boolean	Indicates if a customer has instructed that a limit order should not be displayed or that a block size order should be displayed.	R
38	infoBarrierID	Text (20)	Specifying the identifier of the information barrier in place for a trading unit that will meet the criteria of the "no-knowledge" exception in FINRA Rule 5320.02. Any alphanumeric not containing a delimiter.	C
39	aggregatedOrders	Aggregated Orders	When applicable, the order ID of each customer order being represented. Refer to Appendix C for representative order linkage requirements.	C
Aggregated Orders – Start For each order being represented *n*, the following values are required.				
39.*n*.1	orderID	Text (64)	*orderID* of the order being represented.	R
39.*n*.2	orderKeyDate	Timestamp	*orderKeyDate* of the order being represented.	R
39.*n*.3	quantity	Real Quantity	Required when a partial quantity of the order is being represented.	C
39.*n*.4	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
Aggregated Orders – End				
40	representativeInd	Choice	Indicates if the order is a representative order and if linkage is required.	R
41	seqNum	Alphanumeric (40)	The sequence number assigned to the CAT event by the ATS's matching engine. Any alphanumeric not containing a delimiter.	A
42	atsDisplayInd	Choice	Indicates if the order is displayed outside of the ATS to subscribers only, or via publicly disseminated quotation data.	A
43	displayPrice	Price	The displayed price of this order. If *atsDisplayInd* is populated as 'Y', 'S', or 'A', *displayPrice* must be the price at which the order was displayed. If the *atsDisplayInd* is 'N', *displayPrice* must be "0".	A
44	workingPrice	Price	The working price of the order at the time of the modification. If no current *workingPrice*, value must be "0".	A
45	displayQty	Whole Quantity	The displayed quantity for this order at the time the order was modified. If the *atsDisplayInd* is populated as 'Y', 'S', or 'A', *displayQty* must be the quantity at which the order was displayed. If the *atsDisplayInd* is	A

Seq #	Field Name	Data Type	Description	Include Key
			‘N’, *displayQty* must be “0”.	
46	atsOrderType	Array	Shows the ATS-specific order types as selected from a list of order types defined by this ATS.	A
47	nbbPrice	Price	The NBBO at the moment the order was modified. Prices are required, quantities are optional. If no price or quantity, fields must be populated with a value of ‘0’.	A
48	nbbQty	Whole Quantity		A
49	nboPrice	Price		A
50	nboQty	Whole Quantity		A
51	nbboSource	Choice	Source of the NBBO data used. If *nbboSource* is ‘NA’, NBBO price and quantity fields must be populated with a value of ‘0’ and the *nbboTimestamp* must be blank.	A
52	nbboTimestamp	Timestamp	The date/time at which the NBBO was referenced upon the receipt of the order. Must be blank if *nbboSource* is ‘NA’.	A

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate, CATReporterIMID*, *symbol, orderID*
- Order Key: *aggregatedOrders.orderKeyDate, CATReporterIMID, symbol, aggregatedOrders.orderID*
- Prior Order Key: *priorOrderKeyDate*, *CATReporterIMID, symbol*, and *priorOrderID*
- Route Linkage Key: Event Date, *symbol, receiverIMID, senderIMID*, *routedOrderID*
- Manual Order Key: *manualOrderKeyDate*, *CATReporterIMID, symbol, manualOrderID*

4.7.1. Order Modification Request

The Order Modification Request event is required when a customer has requested the modification to the Material Terms of an order. Not required until Phase 2d.

Table 26: Order Modification Request Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is ‘RPR’. Must be blank when *actionType* is ‘NEW’.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm.	R

Seq #	Field Name	Data Type	Description	Include Key
			Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	
4	type	Message Type	MEOMR	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	orderKeyDate	Timestamp	The *orderKeyDate* of the order event for which the modification was requested.	R
7	orderID	Text (64)	The *orderID* of the order event for which the modification was requested.	R
8	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
9	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
10	eventTimestamp	Timestamp	The date/time of receipt of the modification request. If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or a finer increment up to nanoseconds.	R
11	manualFlag	Boolean	Must be marked as *true* if the order is modified or replaced manually.	R
12	electronicTimestamp	Timestamp	The time at which the event is systematized. Required when *manualFlag* is *true* and the event is systematized.	C
13	receiverIMID	Industry Member ID	Required when the modification request is received from an Industry Member or an exchange (*senderType* is 'F', 'E', or 'O'). The IMID of the Industry Member receiving the routed order modification. When *senderType* is 'F', this value must equal the *destination* field on the Order Route event reported by the routing Industry Member. When *senderType* is 'O', this value must equal the *destination* on the Order Route event if an Order Route event is reported by the destination. When *senderType* is 'E', this value must equal the *routingParty* on the Participant Order Modify Route reported by the exchange.	C

Seq #	Field Name	Data Type	Description	Include Key
14	senderIMID	Industry Member ID / Exchange ID	Required when the modification request is received from an Industry Member or an exchange. When *senderType* is 'F' or 'O', this value is the IMID of the sending Industry Member from which the order is routed. When *senderType* is 'E', this value is the Exchange ID of the sending entity from which the order is routed.	C
15	senderType	Choice	Required when the modification request is received from an Industry Member or an exchange. Indicates the type of origin from which the order is routed. *senderType* 'O' must only be populated if the *symbol* is an OTC symbol in a foreign equity security.	C
16	reservedForFutureUse		Field is Reserved for Future Use and must remain blank.	
17	reservedForFutureUse		Field is Reserved for Future Use and must remain blank.	
18	side	Choice	The side of the order. For this Reportable Event, only same-side adjustments are allowed (e.g., sell long to short sell).	R
19	price	Price	The limit price of the order, required when *orderType* is 'LMT'. Must be blank when *orderType* is 'MKT'.	C
20	quantity	Real Quantity	The order quantity.	R
21	minQty	Whole Quantity	The minimum quantity of an order to be executed. Required when applicable. Must be > 0.	C
22	orderType	Choice	The type of order being submitted (e.g., market, limit).	R
23	timeInForce	Name/Value Pairs	The time-in-force for the order (e.g. DAY, IOC, GTC).	R
24	tradingSession	Choice	The trading session(s) during which an order is eligible to trade.	R
25	isoInd	Choice	Indicates the order was an Intermarket Sweep Order.	R
26	handlingInstructions	Name/Value Pairs	The order handling instructions for the order.	C
27	custDspIntrFlag	Boolean	Indicates if a customer has instructed that a limit order should not be displayed or that a block size order should be displayed.	R
28	infoBarrierID	Text (20)	Specifying the identifier of the information barrier in place for a trading unit that will meet the criteria of the "no-knowledge" exception in FINRA Rule 5320.02. Any alphanumeric not containing a delimiter.	C
29	reservedForFutureUse		Field is Reserved for Future Use and must	

Seq #	Field Name	Data Type	Description	Include Key
			remain blank.	
30	reservedForFutureUse		Field is Reserved for Future Use and must remain blank.	
31	seqNum	Alphanumeric (40)	The sequence number assigned to the CAT event by the ATS's matching engine. Any alphanumeric not containing a delimiter.	A
32	atsDisplayInd	Choice	Indicates if the order is displayed outside of the ATS to subscribers only, or via publicly disseminated quotation data.	A
33	displayPrice	Price	The displayed price of this order. If *atsDisplayInd* is populated as 'Y', 'S', or 'A', *displayPrice* must be the price at which the order was displayed. If the *atsDisplayInd* is 'N', *displayPrice* must be "0".	A
34	workingPrice	Price	The working price of the order at the time of the modification. If no current *workingPrice*, value must be "0".	A
35	displayQty	Whole Quantity	The displayed quantity for this order at the time the order was modified. If the *atsDisplayInd* is populated as 'Y', 'S', or 'A', *displayQty* must be the quantity at which the order was displayed. If the *atsDisplayInd* is 'N', *displayQty* must be "0".	A
36	atsOrderType	Array	Shows the ATS-specific order types as selected from a list of order types defined by this ATS.	A
37	nbbPrice	Price	The NBBO at the moment the order was modified. Prices are required, quantities are optional. If no price or quantity, fields must be populated with a value of '0'.	A
38	nbbQty	Whole Quantity		A
39	nboPrice	Price		A
40	nboQty	Whole Quantity		A
41	nbboSource	Choice	Source of the NBBO data used. If nbboSource is 'NA', NBBO price and quantity fields must be populated with a value of '0' and the nbboTimestamp must be blank.	A
42	nbboTimestamp	Timestamp	The date/time at which the NBBO was referenced upon the receipt of the order. Must be blank if nbboSource is 'NA'.	A

4.8. Order Modified (Cancel/Replace) Supplement Event

The Order Modified Supplement event serves as a supplement to the Order Modified event, just as the New Order Supplement event serves as a supplement to the New Order event.

Table 27: Order Modified Supplement Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MEOMS	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	orderKeyDate	Timestamp	The *orderKeyDate* of the related Order Modified and Cancel/Replace event which this event is supplementing.	R
7	orderID	Text (64)	The *orderID* of the related Order Modified and Cancel/Replace event which this event is supplementing.	R
8	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
9	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
10	eventTimestamp	Timestamp	The date/time of the Order Modified this event supplements.	R
11	aggregatedOrders	Aggregated Orders	The order ID of each customer order being represented. Refer to Appendix C for representative order linkage requirements.	R
Aggregated Orders – Start For each order being represented *n*, the following values are required.				
11.n.1	orderID	Text (64)	*orderID* of the order being represented.	R
11.n.2	orderKeyDate	Timestamp	*orderKeyDate* of the order being represented.	R
11.n.3	quantity	Real Quantity	Required when a partial quantity of the order is being represented.	C
11.*n*.4	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or	C

Seq #	Field Name	Data Type	Description	Include Key
			acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	
Aggregated Orders – End				

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate, CATReporterIMID, symbol, orderID*
- Order Key: *aggregatedOrders.orderKeyDate, CATReporterIMID, symbol, aggregatedOrders.orderID*

4.9. Order Adjusted Event

An Order Adjusted event must be used when the display price or quantity changes as the result of a Display ATS matching engine action and not from a customer instruction. The Order Adjusted event may be used by non-ATS firms instead of an Order Modified event to report changes to the price or quantity of an order.

The following rules apply:

1. If any of the price fields change, then all price fields (i.e. *price, displayPrice*, and *workingPrice*) must be reported to represent current state of the order relative to price. The quantity fields are not required.
2. If any of the quantity fields change, then all quantity fields (i.e. *quantity, minQty, leavesQty, displayQty)* must be reported to represent the current state of the order relative to quantity. The price fields are not required.

Any modification that cannot be fully represented in this Reportable Event must be reported via the Order Modified event. This includes modifications received from another Industry Member where a *routedOrderID* is required, and modifications to the *orderType*.

Table 28: Order Adjusted Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R

Seq #	Field Name	Data Type	Description	Include Key
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MEOJ	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	orderKeyDate	Timestamp	When a new Order Key is assigned, the date and time the *orderID* was assigned. When a new Order Key is not assigned, the *orderKeyDate* of order event which is being modified.	R
7	orderID	Text (64)	When a new Order Key is assigned, the internal order ID assigned to the order by the Industry Member. Must be unique within *orderKeyDate, CATReporterIMID*, and *symbol* combination. When a new Order Key is not assigned, the *orderID* of order event which is being modified.	R
8	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
9	priorOrderKeyDate	Timestamp	If a new Order ID has been assigned, this is the *orderKeyDate* of the event being adjusted.	C
10	priorOrderID	Text (64)	If a new Order ID has been assigned, this is the *orderID* of the event being adjusted. When populated, the *priorOrderID* must not be equal to the *orderID* within the record.	C
11	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
12	eventTimestamp	Timestamp	The date/time at which the order was modified (e.g., the time that the order was confirmed to be modified in the firm's OMS/EMS). If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or a finer increment up to nanoseconds.	R

Seq #	Field Name	Data Type	Description	Include Key
13	manualFlag	Boolean	Must be marked as *true* if the order is adjusted manually.	R
14	electronicTimestamp	Timestamp	The time at which the event is systematized. Required when *manualFlag* is *true* and the event is systematized.	C
15	initiator	Choice	Indicates who initiated the order adjustment.	R
16	price	Price	The limit price of the order. Required when *price, displayPrice,* or *workingPrice* changed.	C
17	quantity	Real Quantity	The order quantity. Required when *quantity, minQty, leavesQty,* or *displayQty* changed.	C
18	minQty	Whole Quantity	The minimum quantity of an order to be executed. Required when applicable and when *quantity*, *minQty, leavesQty,* or *displayQty* changed. Must be > 0.	C
19	leavesQty	Real Quantity	The number of shares of the order left open after the adjustment/modification has occurred. Required when *quantity, minQty, leavesQty,* or *displayQty* changed. Must be less than or equal to *quantity*.	C
20	seqNum	Alphanumeric (40)	The sequence number assigned to the CAT event by the ATS's matching engine. Any alphanumeric not containing a delimiter.	A
21	atsDisplayInd	Choice	Indicates if the order is displayed outside of the ATS to subscribers only, or via publicly disseminated quotation data.	A
22	displayPrice	Price	The displayed price of the order. Required when applicable and when *price*, *workingPrice,* or *displayPrice* changed.	C
23	workingPrice	Price	The working price of the order. Required when applicable and when *price*, *workingPrice,* or *displayPrice* changed.	C
24	displayQty	Whole Quantity	The displayed quantity for this order. Required when applicable and when *quantity*, *minQty, leavesQty,* or *displayQty* changed.	C
25	nbbPrice	Price	The NBBO at the moment the order was modified. Prices are required, quantities are optional. If no price or quantity, fields must be populated with a value of '0'.	A
26	nbbQty	Whole Quantity		A
27	nboPrice	Price		A
28	nboQty	Whole Quantity		A
29	nbboSource	Choice	Source of the NBBO data used. If *nbboSource* is 'NA', NBBO price and quantity fields must be populated with a value of '0' and the *nbboTimestamp* must be blank.	A
30	nbboTimestamp	Timestamp	The date/time at which the NBBO was referenced upon the receipt of the order. Must be blank if *nbboSource* is 'NA'.	A
31	timeInForce	Name/Value Pairs	The time-in-force for the order.	R

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate, CATReporterIMID, symbol, orderID*
- Prior Order Key: *priorOrderKeyDate*, *CATReporterIMID, symbol*, and *priorOrderID*

4.10. Order Cancelled

The Order Cancelled event is reported when an order is fully or partially cancelled. Partial cancellations of an order may be reported to CAT using an Order Cancelled event or an Order Modified event. However, when routing between Industry Members, both parties must communicate and use the same method to report to CAT beginning in Phase 2d. If one party reports to CAT using the cancellation method and the other party reports to CAT using a modification method, this will result in unlinked records beginning in Phase 2d that must be resolved.

Implicit order cancellations, such as cancellations due to expiration of Time in Force, are not required to be reported to CAT.

Order Cancelled events are required to be reported by the entity that initiated the cancellation. When an Order is routed from Firm A to Firm B, the following rules apply:

1. If Firm A or its customer initiates the cancel, Firm A and Firm B must report the Order Cancelled.
2. If Firm B initiates the cancel, Firm B must report the Order Cancelled.

Table 29: Order Cancelled Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is ‘RPR’. Must be blank when *actionType* is ‘NEW’.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MEOC	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O

Seq #	Field Name	Data Type	Description	Include Key
6	orderKeyDate	Timestamp	The *orderKeyDate* of the order event which is being cancelled.	R
7	orderID	Text (64)	The *orderID* of the order event which is being cancelled.	R
8	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
9	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
10	eventTimestamp	Timestamp	The date/time the order was cancelled (e.g., the time that the order was confirmed to be cancelled in the firm's OMS/EMS). If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or a finer increment up to nanoseconds.	R
11	manualFlag	Boolean	Must be marked as *true* if the order is cancelled manually.	R
12	electronicTimestamp	Timestamp	The time at which the event is systematized. Required when *manualFlag* is *true* and the event is systematized.	C
13	cancelQty	Real Quantity	The quantity being cancelled.	R
14	leavesQty	Real Quantity	The number of shares of the order left open after the cancel event. The full cancel will result in zero in this field.	R
15	initiator	Choice	Indicates who initiated the order cancellation.	R
16	seqNum	Alphanumeric (40)	The sequence number assigned to the CAT event by the ATS's matching engine. Any alphanumeric not containing a delimiter.	A

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate, CATReporterIMID, symbol, orderID*

4.10.1. Order Cancel Request

The Order Cancel Request event is required when a customer has requested the cancellation of an order. Not required until Phase 2d.

Table 30: Order Cancel Request Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MEOCR	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	orderKeyDate	Timestamp	The *orderKeyDate* of the order event for which the cancellation was requested.	R
7	orderID	Text (64)	The *orderID* of the order event for which the cancellation was requested.	R
8	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
9	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID*.	C
10	eventTimestamp	Timestamp	The date/time of receipt of the cancellation request. If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or a finer increment up to nanoseconds.	R
11	manualFlag	Boolean	Must be marked as *true* if the order is cancelled manually.	R
12	electronicTimestamp	Timestamp	The time at which the event is systematized. Required when *manualFlag* is *true* and the event is systematized.	C
13	cancelQty	Real Quantity	The quantity requested to be cancelled. Required when a partial cancellation is being requested.	C
14	seqNum	Alphanumeric (40)	The sequence number assigned to the CAT event by the ATS's matching engine. Any alphanumeric not containing a delimiter.	A

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate, CATReporterIMID, symbol, orderID*

4.11. Quotes

Quote events are used to report electronic quotes which are provided by or received in a CAT Reporter's order/quote handling or execution systems in CAT reportable securities and are provided by an Industry Member to other market participants off a national securities exchanges, as described in CAT FAQ B44.

The following guidance applies to quotes in OTC Equity Securities sent to an inter-dealer quotation system:

1. Quotes in OTC Equity Securities sent to an inter-dealer quotation system operated by an Industry Member must be reported using the New Quote event.
2. Quotes in OTC Equity Securities received by an Industry Member CAT Reporter operating an inter-dealer quotation system using the Quote Received event.
3. Quotes in OTC Equity Securities that meet the definition of bid or offer under the CAT NMS Plan sent by a broker-dealer to a quotation venue not operated by a CAT Reporter must be reported using the New Quote event.

Quotes in NMS Securities sent to an exchange or the ADF must be reported using the New Order and Route events.

4.11.1. New Quote Event

The New Quote Event is used to report the following:

- Quotes in OTC equity securities sent to an inter-dealer quotation system operated by an Industry Member (Phase 2d)
- Quotes in OTC Equity securities sent to a quotation venue not operated by a CAT Reporter (Phase 2a/2c).
- Any other electronic quotes which are provided by or received in a CAT Reporter's order/quote handling or execution systems in CAT reportable securities and are provided by an Industry Member to other market participants off a national securities exchanges, as described in CAT FAQ B45 (Phase 2d).

For two-sided quote events, the *bidPrice, bidQty, askPrice*, and *askQty* fields must be populated. For one-sided quote events, the price and quantity of the applicable side must be populated. For quotes representing a name only quote for which a price and quantity is not applicable, the price and quantity of the applicable side must be blank or must be populated with zero, and the *unpricedInd* must be populated as ‘true’.

Modifications to a previously reported quote event are considered to be a replacement, and must include the *priorQuoteID* of the quote being replaced. If a modification does not result in a change to the quote ID, the *priorQuoteID* and the *quoteID* fields must be populated and must be equal. Otherwise, if the field *onlyOneQuoteFlag* = true, any New Quote event offered by the same CATReporterIMID to the same destination in the same symbol will be considered cancelled by CAT.

Table 31: New Quote Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is ‘RPR’. Must be blank when *actionType* is ‘NEW’.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MENQ	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	quoteKeyDate	Timestamp	The date and time the *quoteID* was assigned.	R
7	quoteID	Text (64)	The internal quote ID assigned to the quote by the Industry Member. Must be unique within *quoteKeyDate, CATReporterIMID*, and *symbol* combination.	R
8	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
9	priorQuoteKeyDate	Timestamp	If a new Quote ID has been assigned, this is the *quoteKeyDate* of the event being modified.	C
10	priorQuoteID	Text (64)	This field is only relevant for an update/replacement of an existing quote, and	C

Seq #	Field Name	Data Type	Description	Include Key
			must not be populated for new Quotes. After this Reportable Event, the quote specified in this field will be considered to have been replaced. This field does not have to be included if *onlyOneQuoteFlag* is *true*, since it is known implicitly that the previous quote is being replaced. This field is the *quoteID* of the quote that is being replaced.	
11	eventTimestamp	Timestamp	The date/time the quote was sent by the Industry Member to the recipient. If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or a finer increment up to nanoseconds.	R
12	seqNum	Alphanumeric (40)	The sequence number assigned to the quote by the reporter. Any alphanumeric not containing a delimiter. Required for inter-dealer quotation systems only.	C
13	senderIMID	Industry Member ID	The IMID of the Industry Member that is sending the quote, as known by the destination. This value must match the *senderIMID* on the Quote Received event reported by the destination.	R
14	destination	Industry Member ID	This field contains the SRO assigned identifier of the destination Industry Member. This value must match the *receiverIMID* field on the Quote Received event reported by the destination.	R
15	routedQuoteID	Text (64)	The quote ID sent to the recipient of the quote.	R
16	onlyOneQuoteFlag	Boolean	Value is *true* if the recipient only allows one quote per *symbol* for this Industry Member. Otherwise, false.	R
17	bidPrice	Price	Price being bid. When *unpricedInd* is 'true', must be blank, or populated with a value of '0'. When *unpricedInd* is 'false', must be populated with a value greater than 0 if the *askPrice* field is blank.	C
18	bidQty	Whole Quantity	Quantity being bid. Must be populated with a value greater than '0' if the *bidPrice* field is populated with a value greater than '0'.	C
19	askPrice	Price	Price being asked. When *unpricedInd* is 'true', must be blank, or populated with a value of '0'. When *unpricedInd* is 'false', must be populated with a value greater than 0 if the *bidPrice* field is blank.	C
20	askQty	Whole Quantity	Quantity being asked. Must be populated with a value greater than '0' if the *askPrice* field is populated with a value greater than '0'.	C

Seq #	Field Name	Data Type	Description	Include Key
21	firmDesignatedID	Text (40)	Refer to the Data Dictionary for definition and guidance for populating this field.	R
22	accountHolderType	Choice	Represents the type of account that originated this quote. Must be provided when *firmDesignatedID* is present.	R
23	unsolicitedInd	Choice	Indicates whether this is an unsolicited quote.	R
24	mpStatusCode	Choice	Market Participant Status Code, indicates if the market maker's quote is open or closed.	R
25	quoteRejectedFlag	Boolean	If the result of the quote is rejected or no response was received, value should be *true*.	R
26	unpricedInd	Boolean	If this is an unpriced quote, must be populated as *true*. When *unpricedInd* is *true*, bid and ask fields are not required.	R

Linkage Keys for this Reportable Event:

- Quote Key: *quoteKeyDate, CATReporterIMID, symbol, quoteID*
- Prior Quote Key: *priorQuoteKeyDate*, *CATReporterIMID, symbol,* and *priorQuoteID*
- Quote Route Key: Event Date*, senderIMID, destination, symbol, routedQuoteID*

4.11.2. Quote Received

The Quote Received event is used to report Quotes in OTC Equity securities received by an Industry Member inter-dealer quotation system.

For two-sided quote events, the *bidPrice, bidQty, askPrice*, and *askQty* fields must be populated. For one-sided quote events, the price and quantity of the applicable side must be populated. For quotes representing a name only quote for which a price and quantity is not applicable, the price and quantity of the applicable side must be blank or must be populated with zero, and the *unpricedInd* must be populated as 'true'.

Modifications to a previously reported quote event are considered to be a replacement, and must include the *priorQuoteID* of the quote being replaced. If a modification does not result in a change to the quote ID, the *priorQuoteID* and the *quoteID* fields must be populated and must be equal. Otherwise, if the field *onlyOneQuoteFlag* = true, any New Quote event offered by the same CATReporterIMID to the same destination in the same symbol will be considered cancelled by CAT.

Table 32: Quote Received Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MEQR	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	quoteKeyDate	Timestamp	The date and time the *quoteID* was assigned.	R
7	quoteID	Text (64)	The internal quote ID assigned to the quote by Industry Member. Must be unique within *quoteKeyDate, CATReporterIMID*, and *symbol* combination.	R
8	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
9	receivedQuoteID	Text (64)	The quote ID as received by the ATS or Industry Member, should match the *routedQuoteID* in the New Quote event created by the issuer of the quote. Not required until Phase 2d.	O
10	eventTimestamp	Timestamp	The date/time the quote was received by the ATS or Industry Member. If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or a finer increment up to nanoseconds.	R
11	seqNum	Alphanumeric (40)	The sequence number assigned to the quote received message by the reporter. Any alphanumeric not containing a delimiter. Required for inter-dealer quotation systems only.	C
12	receiverIMID	Industry Member ID	The IMID of the Industry Member receiving the quote (the Industry Member reporting this Reportable Event). It must match the *destination* field on the New Quote event reported by the routing entity.	R
13	senderIMID	Industry Member ID	The IMID of the Industry Member providing the quote. This value must match the *senderIMID* in the New Quote event reported	R

Seq #	Field Name	Data Type	Description	Include Key
			by the routing Industry Member.	
14	onlyOneQuoteFlag	Boolean	*true* if the Industry Member only allows one quote per *symbol* for the issue of the quote; false otherwise.	R
15	priorQuoteKeyDate	Timestamp	If a new Quote ID has been assigned, this is the *quoteKeyDate* of the event being modified.	C
16	priorQuoteID	Text (64)	*quoteID* of the quote previously accepted by the Industry Member that is being replaced. Required to report the update/replacement of an existing quote. After this Reportable Event, the quote specified in this field will be considered to have been replaced. Not required if *onlyOneQuoteFlag* is *true*.	C
17	bidPrice	Price	Price being bid. When *unpricedInd* is 'true', must be blank, or populated with a value of '0'. When *unpricedInd* is 'false', must be populated with a value greater than 0 if the *askPrice* field is blank.	C
18	bidQty	Whole Quantity	Quantity being bid. Must be populated with a value greater than '0' if the *bidPrice* field is populated with a value greater than '0'.	C
19	askPrice	Price	Price being asked. When *unpricedInd* is 'true', must be blank, or populated with a value of '0'. When *unpricedInd* is 'false', must be populated with a value greater than 0 if the *bidPrice* field is blank.	C
20	askQty	Whole Quantity	Quantity being asked. Must be populated with a value greater than '0' if the *askPrice* field is populated with a value greater than '0'.	C
21	mpStatusCode	Choice	Market Participant Status Code, indicates if the market maker's quote is open or closed. Only required for quotes sent to an inter-dealer quotation system.	C
22	unsolicitedInd	Choice	Indicates whether this is an unsolicited quote.	R
23	quoteWantedInd	Choice	Indicates if the quote message received by an IDQS is a request for a bid or an ask. This field is only applicable to IDQSs. When *quoteWantedInd* is populated, bid and ask fields are not required.	C
24	unpricedInd	Boolean	If this is an unpriced quote, must be populated as *true*. When *unpricedInd* is *true*, bid and ask fields are not required.	R

Linkage Keys for this Reportable Event:

- Quote Key: *quoteKeyDate, CATReporterIMID, symbol, quoteID*
- Quote Route Key: Event Date*, senderIMID, receiverIMID, symbol, receivedQuoteID*
- Prior Quote Key: *priorQuoteKeyDate*, *CATReporterIMID, symbol,* and *priorQuoteID*
- IDQS Linkage Key: Event Date, *senderIMID, receiverIMID, symbol, quoteID*

4.11.3. Quote Cancelled

Reported when a quote is cancelled. If a quote is cancelled that was sent to an ATS or an Industry Member, then both the sender of the quote and the entity that accepted the quote must report Quote Cancelled events.

Table 33: Quote Cancelled Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MEQC	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	quoteKeyDate	Timestamp	The *quoteKeyDate* of the Quote event which is being cancelled.	R
7	quoteID	Text (64)	The *quoteID* of the Quote event which is being cancelled.	R
8	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
9	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
10	eventTimestamp	Timestamp	The date/time the quote was cancelled by the Industry Member to the recipient. If	R

Seq #	Field Name	Data Type	Description	Include Key
			manualFlag is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or a finer increment up to nanoseconds.	
11	seqNum	Alphanumeric (40)	The sequence number of the quote cancel message. Any alphanumeric not containing a delimiter. Required for inter-dealer quotation systems only.	C
12	reservedForFutureUse		Field is Reserved for Future Use and must remain blank.	
13	initiator	Choice	Indicates who initiated the order cancellation.	R
14	mpStatusCode	Choice	Market Participant Status Code, indicates if the market maker's quote is open or closed. Only required for quotes sent to an inter-dealer quotation system.	C

Linkage Keys for this Reportable Event:

- Quote Key: *quoteKeyDate, CATReporterIMID, symbol, quoteID*

4.12. Trade

A Trade Event is used when the Industry Member acts as the executing broker and is required to report the trade for public dissemination purposes. When an Industry Member is not required to report the execution of a customer order for public dissemination purposes, with the exceptions noted below, an Order Fulfillment event must be used. See Section 4.13 Order Fulfillment for more details.

Reporting Exception Codes

In general, Trade events are required to match to a TRF/ORF/ADF report. However, there are four circumstances when an MEOT would not be able to be linked to a TRF report and a Reporting Exception Code (REC) is required on a Trade event to allow the Processor to identify that there will be no link to a TRF/ORF/ADF report:

1. An Industry Member executes a trade between two desks or departments of the same firm, but because there is no change in beneficial ownership, no trade is reported for public dissemination. In this instance a REC of “P” should be used on the Trade event.
2. An Industry Member executes a trade and must report the trade via Form T. In this instance, a REC of “F” should be used on the Trade event.

3. A trade was executed by a non-FINRA member firm and was reported to the TRF by the FINRA member counterparty. In this instance, the non-FINRA member must populate a REC of "N" on the Trade event.
4. Industry Member was the contra side of the trade report which was reported to a TRF/ORF/ADF via a QSR or AGU, and was therefore unable to populate a *tapeTradeID*. In this instance, a REC of 'C' should be used on the Trade event to reflect a linkage to the related TRF/ORF/ADF report could not be made. The following rules apply when REC 'C' is used:

   - The *marketCenterID* field must be populated.
   - The *clearingFirm* and *counterparty* fields must be populated.
   - The *cancelFlag* and *cancelTimestamp* must be populated accordingly for all trades that are reported to a TRF via a QSR or AGU and later cancelled, as the CAT would not be able to link to a related TRF cancellation.

   FINRA CAT will closely monitor all uses of REC 'C' to ensure compliance with the above noted guidelines.

Trade Side Details

Trade events are two-sided, containing information on both sides of the trade. Exceptions requiring only one side of the Trade event to be populated are noted below. The details of each side are reported using Trade Side Details. The data type Trade Side Details is described as a list of fields in in Table 35 below. Trade Side Details must contain only one *orderID* per side. The *buyDetails* must contain the *orderID* of the buy side of the trade and the *sellDetails* must contain the *orderID* of the sell side of the trade. If there is more than one *orderID* associated with one side of the trade, the Trade Side Details related to each *orderID* must be populated in a separate Trade Supplement event.

Internalized Trade

When an Industry Member internalizes an order by filling it from a proprietary account, the Industry Member must report the *orderID* on the customer side and the FDID and the *accountHolderType* of the proprietary account on the firm side. In this scenario, no *orderID* is required on the firm side of the Trade event.

However, if the Industry Member generates a proprietary order to facilitate the execution of the customer order, the Industry Member must report the *orderID* of both the customer side and the firm side of the Trade event. Refer to CAT FAQ B41 for additional information.

One-Sided Trade events

There are several exceptions which only require one side of a Trade event to be populated. These exceptions include:

1. Trade is executed as the result of a negotiation between two Industry Members.
2. Order is routed by a FINRA Member to a non-FINRA member, and the FINRA Member has the obligation to submit a media trade report to a TRF/ADF/ORF.
3. Order is routed by an Industry Member to a foreign broker-dealer, and the foreign broker-dealer executes the order at a net price, creating a media trade reporting obligation in the United States.

In these scenarios, each party that is required to report a Trade event to CAT must populate the *sideDetailsInd* indicating which side of the trade the Industry Member was associated with, and which Trade Side Details will be populated in the Trade event.

Cancelled Trades

In accordance with CAT FAQ E25, the *cancelFlag* must be set to true only in instances when a trade is cancelled because the trade report is rejected by the TRF/ORF or ADF. For all instances where a trade is reported to, and accepted by, the TRF/ORF or ADF, including those that are cancelled or busted in the trade reporting data, the *cancelFlag* must be set to false. Refer to CAT FAQ E29 and CAT FAQ E30 for additional information.

4.12.1. Trade Event

The tables below describe the data elements to report a trade executed by an Industry Member.

Table 34: Trade Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MEOT	R

Seq #	Field Name	Data Type	Description	Include Key
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	tradeKeyDate	Timestamp	The date and time the *tradeID* was assigned.	R
7	tradeID	Text (64)	Unique ID assigned to this execution by the Industry Member. This ID will be used in subsequent events when a specific trade needs to be identified. The combination of date, *CATReporterIMID, symbol*, and *tradeID* must be unique.	R
8	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
9	eventTimestamp	Timestamp	The date/time at which the trade was executed. If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or a finer increment up to nanoseconds.	R
10	manualFlag	Boolean	Must be marked as *true* if this is a manual execution.	R
11	electronicTimestamp	Timestamp	The time at which the event is systematized. Required when *manualFlag* is *true* and the event is systematized.	C
12	cancelFlag	Boolean	Must be marked as *true* if the execution is cancelled and was not reported to the TRF/ADF/ORF.	R
13	cancelTimestamp	Timestamp	When *cancelFlag* is *true*, the time at which the execution was cancelled. If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or a finer increment up to nanoseconds.	C
14	quoteKeyDate	Timestamp	The date and time the *quoteID* was assigned. Required when *quoteID* is populated. Not required until Phase 2d.	O
15	quoteID	Text (64)	If this trade was the result of a quote that was sent to an IDQS, this is the *quoteID* of the related Quote Received event reported by the IDQS. Required if this order was executed as the result of a quote. Not required until Phase 2c	O
16	quantity	Real Quantity	Quantity of the trade.	R
17	price	Price	The execution price of the trade.	R
18	capacity	Choice	The capacity in which the Industry Member acted.	R
19	tapeTradeID	Text (40)	The unique identifier reported by the Industry Member to the TRF/ADF/ORF based on the reporting specifications of the specific facility,	C

Seq #	Field Name	Data Type	Description	Include Key
			required when the ID was supplied to a transaction reporting system: • Compliance ID in ORF and ADF • Branch Sequence Number in FINRA/NQ TRF • FINRA Compliance Number in FINRA/NYSE TRF Must be unique per combination of Event Date, *CATReporterIMID*, *marketCenterID* and *symbol*. The *tapeTradeID* may link to either the reporting side or the contra-side of the media tape report. When the *reportingExceptionCode* field is blank, the *tapeTradeID* field must be populated. When the *reportingExceptionCode* field is populated, the *tapeTradeID* field must be blank.	
20	marketCenterID	Choice	The national securities exchange or transaction reporting system operated by FINRA where the trade was reported. When the *marketCenterID* field is blank, the *reportingExceptionCode* must be populated with a value other than 'C'. When the *marketCenterID* field is populated, the *reportingExceptionCode* field must be blank, or must be populated with a value of 'C'.	C
21	sideDetailsInd	Choice	Identifies if a Trade event is one sided, and which side of the trade the Industry Member is populating in the Trade Side Details. When *sideDetailsInd* is 'BUY', only the *buyDetails* are populated. When *sideDetailsInd* is 'SELL', only the *sellDetails* are populated.	R
22	buyDetails	Trade Side Details	See Table 35: Trade Side Details below. Applicable if there is only one *orderID* associated with this side of the trade. If there is more than one *orderID*, must be populated in separate MEOTS events.	C
23	sellDetails	Trade Side Details	See Table 35: Trade Side Details below. Applicable if there is only one *orderID* associated with this side of the trade. If there is more than one *orderID*, must be populated in separate MEOTS events.	C
24	reportingExceptionCode	Choice	Indicates the reason that a unique identifier (e.g., Branch Sequence Number, Compliance ID) was not supplied to a transaction reporting system. Must be provided if the execution is not reported to a FINRA transaction reporting system. When the *tapeTradeID* field is blank, the *reportingExceptionCode* field must be	C

Seq #	Field Name	Data Type	Description	Include Key
			populated. When the *tapeTradeID* field is populated, the *reportingExceptionCode* field must be blank. When the *marketCenterID* field is blank, the *reportingExceptionCode* field must be populated. When the *marketCenterID* field is populated, the *reportingExceptionCode* must be blank.	
25	seqNum	Alphanumeric (40)	The sequence number assigned to the Reportable Event by the ATS's matching engine. Any alphanumeric not containing a delimiter.	A
26	nbbPrice	Price	The NBBO at the moment the trade occurred. Prices are required, quantities are optional. If no price or quantity, fields must be populated with a value of '0'.	A
27	nbbQty	Whole Quantity		A
28	nboPrice	Price		A
29	nboQty	Whole Quantity		A
30	nbboSource	Choice	Source of the NBBO Data Used. If *nbboSource* is 'NA', NBBO price and quantity fields must be populated with a value of '0' and the *nbboTimestamp* must be blank.	A
31	nbboTimestamp	Timestamp	The date/time at which the NBBO was referenced upon the receipt of the order. Must be blank if *nbboSource* is 'NA'.	A
32	quotingIDQS	Industry Member ID	If this trade was the result of a quote that was sent to an IDQS, this is the IMID of the IDQS that submitted the related Quote Received event. Required when *quoteID* is populated. Must be blank when *quoteID* is blank. Required in Phase 2d.	O
33	clearingFirm	Unsigned	The clearing number of the Industry Member's clearing firm. Required when the *reportingExceptionCode* is 'C'.	C
34	counterparty	Industry Member ID	The counterparty to the trade. Required when the *reportingExceptionCode* is 'C'.	C

Table 35: Trade Side Details

The Trade Side Details associated with fields: *buyDetails* and *sellDetails:* Limited to 1 set of details for each side.				
Seq #	**Field Name**	**Data Type**	**Description**	**Include Key**
<seq>.1.1	orderKeyDate	Timestamp	Required if *orderID* is populated. The *orderKeyDate* of the order on this side.	C
<seq>.1.2	orderID	Text (64)	The order ID of the order on this side. When *firmDesignatedID* is populated, *orderID* must be blank. When *orderID* is populated, *firmDesignatedID* must be	C

The Trade Side Details associated with fields: *buyDetails* and *sellDetails:* Limited to 1 set of details for each side.				
Seq #	**Field Name**	**Data Type**	**Description**	**Include Key**
			blank.	
<seq>.1.3	side	Choice	The side of the trade.	R
<seq>.1.4	quantity	Real Quantity	The execution quantity associated with this *orderID*.	O
<seq>.1.5	firmDesignatedID	Text (40)	Applicable to internalized trades as described in Section 4.12. Refer to the Data Dictionary for definition and guidance for populating this field. When *firmDesignatedID* is populated, *orderID* must be blank. When *orderID* is populated, *firmDesignatedID* must be blank.	C
<seq>.1.6	accountHolderType	Choice	Required if *firmDesignatedID* is populated. Represents the type of account against which a customer/client order is being filled.	C
<seq>.1.7	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C

Linkage Keys for this Reportable Event:

- Order Key: *buyDetails.orderKeyDate, CATReporterIMID, symbol, buyDetails.orderID*
- Order Key: *sellDetails.orderKeyDate, CATReporterIMID, symbol, sellDetails.orderID*
- Trade Key: *tradeKeyDate, CATReporterIMID, symbol, tradeID*
- TRF Linkage Key: Event Date*, CATReporterIMID, symbol, tapeTradeID, marketCenterID*
- IDQS Linkage Key: Event Date, *CATReporterIMID*, *quotingIDQS, symbol*, *quoteID*

4.12.2. Trade Supplement Event

The tables below describe the data elements used to report when there is more than one order associated with one side of the trade.

Table 36: Trade Supplement Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MEOTS	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	tradeKeyDate	Timestamp	The *tradeKeyDate* of the Trade event which this event is supplementing.	R
7	tradeID	Text (64)	The *tradeID* of the Trade event which this event is supplementing.	R
8	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
9	eventTimestamp	Timestamp	The date/time at which the trade was executed. This must match the *eventTimestamp* value reported on the Trade this event supplements (including scenarios in which the supplement is created at a later time).	R
10	buyDetails	Trade Side Details	Required if the subject order was a buy order. See Table 37: Trade Side Details below.	C
11	sellDetails	Trade Side Details	Required if the subject order was a sell order. See Table 37: Trade Side Details below.	C

Table 37: Trade Side Details

The Trade Side Details associated with fields: *buyDetails* and *sellDetails:* Limited to 1 set of details for each side.				
Seq #	**Field Name**	**Data Type**	**Description**	**Include Key**
<seq>.1.1	orderKeyDate	Timestamp	The *orderKeyDate* of the order on this side.	R
<seq>.1.2	orderID	Text (64)	The order ID assigned by the Industry	R

The Trade Side Details associated with fields: *buyDetails* and *sellDetails:* Limited to 1 set of details for each side.				
Seq #	**Field Name**	**Data Type**	**Description**	**Include Key**
			Member to the order on this side.	
<seq>.1.3	side	Choice	The side of the trade.	R
<seq>.1.4	quantity	Real Quantity	The execution quantity associated with this *orderID*.	R
<seq>.1.5	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C

Linkage Keys for this Reportable Event:

- Order Key: *buyDetails.orderKeyDate, CATReporterIMID, symbol, buyDetails.orderID*
- Order Key: *sellDetails.orderKeyDate, CATReporterIMID, symbol, sellDetails.orderID*
- Trade Key: *tradeKeyDate, CATReporterIMID, symbol, tradeID*

4.13. Order Fulfillment

The Order Fulfillment event is used to report the execution of a customer/client order that is not required to be reported for public dissemination purposes.

Order Fulfillment events are required in scenarios where:

1. A representative order was used to facilitate the execution of the customer/client order.
2. An order is routed to a foreign market and the resulting foreign execution is not captured by CAT.

The Order Fulfillment event is designed to capture the customer/client details and the firm side details. Firm side details provide linkage to the representative order used to facilitate the execution of the customer/client order.

The *fulfillmentLinkType* field is used to indicate if the firm side details are required. Appendix C contains detailed descriptions of representative order scenarios and illustrates when marking of the representative order, linkage between the represented order and the representative order, and Order Fulfillment linkage is required.

4.13.1. Order Fulfillment Event

Table 38: Order Fulfillment Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is ‘RPR’. Must be blank when *actionType* is ‘NEW’.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MEOF	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	fillKeyDate	Timestamp	The date and time the *fulfillmentID* was assigned.	R
7	fulfillmentID	Text (64)	The unique identifier for the fulfillment. The combination of reporter, *fillKeyDate*, *symbol* and *fulfillmentID* must be unique.	R
8	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
9	eventTimestamp	Timestamp	The date/time when the fulfillment was processed by the Industry Member. If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or a finer increment up to nanoseconds.	R
10	manualFlag	Boolean	Must be marked as *true* if this is a manual process.	R
11	electronicTimestamp	Timestamp	The time at which the event is systematized. Required when *manualFlag* is *true* and the event is systematized.	C
12	fulfillmentLinkType	Choice	Refer to Appendix C for representative order linkage requirements.	R
13	cancelFlag	Boolean	Must be marked as *true* if the fulfillment was cancelled.	R
14	cancelTimestamp	Timestamp	When *cancelFlag* is *true*, the time at which the fulfillment was cancelled. If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds	C

Seq #	Field Name	Data Type	Description	Include Key
			or a finer increment up to nanoseconds.	
15	quantity	Real Quantity	Quantity being executed and assigned. It may or may not be the full quantity of the order.	R
16	price	Price	Price of the executed shares.	R
17	capacity	Choice	The capacity in which the Industry Member acted.	R
18	clientDetails	Fulfillment Side Details	See Table 39: Fulfillment Side Details below.	R
19	firmDetails	Fulfillment Side Details	Used to capture the Industry Member side order details. Applicable if there is only one *orderID* associated with this side of the fulfillment. If more than one representative order was used to fill the customer order, this field must be blank and the *firmDetails* for each related representative order must be populated in separate MEOFS events. If *firmDetails* are captured in an MEOFS event, the *fulfillmentLinkType* field must be populated with a value of 'YS'. See Table 39: Fulfillment Side Details below. Refer to Appendix C for more details.	C

Table 39: Fulfillment Side Details

The Fulfillment Side Details associated with fields: *clientDetails* and *firmDetails:* Limited to 1 set of details for each side.				
Seq #	**Field Name**	**Data Type**	**Description**	**Include Key**
<seq>.1.1	orderKeyDate	Timestamp	Required if *orderID* is populated. The *orderKeyDate* of the order on this side.	C
<seq>.1.2	orderID	Text (64)	The order ID assigned by the Industry Member to the order on this side. When *firmDesignatedID* is populated, *orderID* must be blank. When *orderID* is populated, *firmDesignatedID* must be blank.	C
<seq>.1.3	side	Choice	The side of the fulfillment.	R
<seq>.1.4	quantity	Real Quantity	The execution quantity associated with this *orderID*.	O
<seq>.1.5	firmDesignatedID	Text (40)	Applicable to *firmDetails* when *fulfillmentLinkType* "YE" is populated, as described in Appendix C. Refer to the Data Dictionary for definition and guidance for populating this field. When *firmDesignatedID* is populated, *orderID* must be blank. When *orderID* is	C

The Fulfillment Side Details associated with fields: *clientDetails* and *firmDetails:* Limited to 1 set of details for each side.				
Seq #	**Field Name**	**Data Type**	**Description**	**Include Key**
			populated, *firmDesignatedID* must be blank.	
<seq>.1.6	accountHolderType	Choice	Required if *firmDesignatedID* is populated. Represents the type of account against which a customer/client order is being filled.	C
<seq>.1.7	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C

Linkage Keys for this Reportable Event:

- Order Key: *firmDetails.orderKeyDate, CATReporterIMID, symbol*, *firmDetails.orderID*
- Order Key: *clientDetails.orderKeyDate, CATReporterIMID*, *symbol, clientDetails.orderID*
- Fulfillment Key: *fillKeyDate*, *CATReporterIMID, symbol, fulfillmentID*

4.13.2. Order Fulfillment Supplement Event

The tables below describe the data elements used to report a customer order is filled from multiple representative orders. Only one *orderID* may be represented in each Order Fulfillment Supplement event. If multiple representative orders were used to fill a customer order, the *orderID* for each representative order must be populated in its own Order Fulfillment Supplement event.

Table 40: Order Fulfillment Supplement Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is ‘RPR’. Must be blank when *actionType* is ‘NEW’.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT	R

Seq #	Field Name	Data Type	Description	Include Key
			Reporter IMID.	
4	type	Message Type	MEOFS	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	fillKeyDate	Timestamp	The *fillKeyDate* of the Order Fulfillment event which this event is supplementing.	R
7	fulfillmentID	Text (64)	The *fulfillmentID* of the Order Fulfillment event which this event is supplementing.	R
8	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
9	eventTimestamp	Timestamp	The date/time at which the fulfillment was processed by the Industry Member. This must match the *eventTimestamp* value reported on the Order Fulfillment this event supplements (including scenarios in which the supplement is created at a later time).	R
10	firmDetails	Fulfillment Side Details	Used to capture the Industry Member side order details. See Table 41: Fulfillment Side Details below. Refer to Appendix C for more details.	R

Table 41: Fulfillment Side Details

The Fulfillment Side Details associated with fields: *firmDetails* Limited to 1 set of details.				
Seq #	**Field Name**	**Data Type**	**Description**	**Include Key**
<seq>.1.1	orderKeyDate	Timestamp	The *orderKeyDate* of the order on this side.	R
<seq>.1.2	orderID	Text (64)	The order ID assigned by the Industry Member to the order on this side.	R
<seq>.1.3	side	Choice	The side of the trade.	R
<seq>.1.4	quantity	Real Quantity	The execution quantity associated with this *orderID*.	R
<seq>.1.5	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C

Linkage Keys for this Reportable Event:

- Order Key: *firmDetails.orderKeyDate, CATReporterIMID, symbol*, *firmDetails.orderID*
- Fulfillment Key: *fillKeyDate*, *CATReporterIMID, symbol, fulfillmentID*

4.13.3. Order Fulfillment Amendment

This CAT event is used to report the amendment of a previously reported fulfillment that occurs on the same day or on a subsequent day. An Order Fulfillment Amendment event is required to be reported to CAT if the fill to the client was changed after the final fulfillment had been provided to the client. This Reportable Event must capture the entire state of the fulfillment after it has been amended, even though some of the data elements may remain unchanged. However, Side Details are only required to be restated if changed. When the *fulfillmentLinkType* value 'YS' is used, Side Details must be restated using an MEOFS event if changed.

Order Fulfillment Amendments are not required in scenarios where:

- Executions against an order are tracked throughout the day but a single average price fill is provided to the client after the order is completed or at the end of the day. Some systems may provide intraday transparency to the progress of executing an order as informal information that is not considered by the firm to be 'final' fulfillments, and these should not be reported to CAT as fulfillments and fulfillment amendments. Refer to CAT FAQ B64 for additional information.
- An Industry Member makes a correction via a debit/credit to the customer's account instead of modifying the executed shares given back to the customer.
- Changes do not impact CAT reportable attributes of the fulfillment.

Table 42: Order Fulfillment Amendment Event

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm.	R
4	type	Message Type	MEFA	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O

Seq #	Field Name	Data Type	Description	Include Key
6	fillKeyDate	Timestamp	When a new Fulfillment Key is assigned, the date and time the *fulfillmentID* was assigned. When a new Fulfillment Key is not assigned, the *fillKeyDate* of the fulfillment event being modified.	R
7	fulfillmentID	Text (64)	When a new Fulfillment Key is assigned, the internal fulfillment ID assigned to the fulfillment event by the Industry Member. Must be unique within *fillKeyDate, CATReporterIMID*, and *symbol* combination. When a new Fulfillment Key is not assigned, the *fulfillmentID* of the fulfillment event being modified.	R
8	priorFillKeyDate	Timestamp	In cases when a new *fulfillmentID* is assigned, the *priorFillKeyDate* is the *fillKeyDate* of the fulfilment that is being modified. Required if *priorFulfillmentID* is populated.	C
9	priorFulfillmentID	Text (64)	If a new fulfillment ID is assigned, this is the *fulfillmentID* of the event being modified.	C
10	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
11	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
12	eventTimestamp	Timestamp	The date/time when the fulfillment was processed by the Industry Member. If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or a finer increment up to nanoseconds.	R
13	manualFlag	Boolean	Must be marked as *true* if this is a manual process.	R
14	electronicTimestamp	Timestamp	The time at which the event is systematized. Required when *manualFlag* is *true* and the event is systematized.	C
15	quantity	Real Quantity	Quantity being executed and assigned. It may or may not be the full quantity of the order.	R
16	capacity	Choice	The capacity in which the Industry Member acted.	R
17	price	Price	Price of the executed shares.	R
18	fulfillmentLinkType	Choice	Refer to Appendix C for representative order linkage requirements.	R
19	clientDetails	Fulfillment Side Details	Refer to Fulfillment Side Details in Table 39: Fulfillment Side Details. Required if changed.	C

Seq #	Field Name	Data Type	Description	Include Key
20	firmDetails	Fulfillment Side Details	Refer to Fulfillment Side Details in Table 39: Fulfillment Side Details. Required if changed.	C

Linkage Keys for this Reportable Event:

- Order Key: *firmDetails.orderKeyDate, CATReporterIMID, symbol, firmDetails.orderID*
- Order Key: *clientDetails.orderKeyDate, CATReporterIMID, symbol, clientDetails.orderID*
- Fulfillment Key: *fillKeyDate, CATReporterIMID, symbol, fulfillmentID*
- Prior Fulfillment Key: *priorFillKeyDate*, *CATReporterIMID*, *symbol, priorFulfillmentID*

4.14. Allocations

Industry Members that perform allocations are required to submit a Post-Trade Allocation event to CAT any time shares are allocated to a client account regardless of whether the Industry Member was involved in executing the underlying order(s). Refer to Section 3.3 for additional information on the requirements for reporting allocation events to CAT.

4.14.1. Post-Trade Allocation Event

Table 43: Post-Trade Allocation Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when actionType is 'RPR'	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MEPA	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT.	O
6	allocationKeyDate	Timestamp	The date and time the *allocationID* was assigned.	R
7	allocationID	Text (64)	The internal allocation ID assigned to the allocation event by the Industry Member. The combination of *CATReporterIMID*, *allocationKeyDate*, *symbol* and	R

Seq #	Field Name	Data Type	Description	Include Key
			allocationID must be unique.	
8	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
9	eventTimestamp	Timestamp	The date/time the allocation was processed.	R
10	cancelFlag	Boolean	Must be marked as *true* if the allocation was cancelled.	R
11	cancelTimestamp	Timestamp	When *cancelFlag* is *true*, the time at which the allocation was cancelled.	C
12	quantity	Real Quantity	Quantity being allocated.	R
13	price	Price	Price of the allocated shares.	R
14	side	Choice	The side of customer receiving the allocation.	R
15	firmDesignatedID	Text (40)	The FDID of the account receiving the allocation, including subaccounts. Refer to the Data Dictionary for definition and guidance for populating this field.	R
16	custType	Choice	Indicates if the account holder is a natural person or legal entity. Not required until Phase 2d.	O
17	institutionFlag	Boolean	Indicates if the account meets the definition of institution under FINRA Rule 4512(c)	R
18	tradeDate	Date	The trade date of the securities being allocated	R
19	settlementDate	Date	The settlement date of the securities being allocated	R
20	allocationType	Choice	Indicates the type of allocation being made (e.g. custody, DVP, step out, correspondent flip).	R
21	DVPCustodianID	Text (40)	Applicable to DVP transactions. If the custodian is a US broker-dealer, this field must represent the clearing number of the custodian. If the custodian is a US bank and is not a registered broker-dealer, this field must represent the DTC number of the bank. If the custodian is a foreign entity, must be populated with a value of 'FOREIGN'. Refer to CAT FAQ U19 for additional guidance. Required when *allocationType* is 'DVP', 'DVPF', 'FDVP', or 'FDVF'.	C
22	correspondentCRD	Unsigned	The CRD number of the related Introducing Broker or Correspondent firm, if applicable.	C

Seq #	Field Name	Data Type	Description	Include Key
23	newOrderFDID	Text (40)	The FDID of the related New Order event, if available in the booking system. Requirements for populating this field may be expanded in future phases of CAT.	C
24	allocationInstructionTime	Timestamp	The date/time the time the allocation instruction was received.	O

Linkage Keys for this Reportable Event:

- Allocation Key: *allocationKeyDate*, *CATReporterIMID, symbol, allocationID*

4.14.2. Amended Allocation Event

An Amended Allocation event is used to report to CAT when an allocation is updated such that a CAT reportable attribute is changed after the shares/contracts were originally booked in a client account, and must always reflect the current state of the allocation. This Reportable Event must capture the entire state of the allocation after it has been amended, even though some of the data elements may remain unchanged.

Changes to CAT reportable attributes of an allocation after the original booking of shares/contracts are required to be reported to CAT as either an Allocation Amendment event or the cancellation of a Post-Trade Allocation event followed by a new Post-Trade Allocation event regardless if they occur pre-settlement or post-settlement.

Since changes to an allocation may occur any time after the original booking, the Amended Allocation event is due at 8AM on the next CAT Trading Day after the change was booked, even if it is on a different day than the original Allocation event. Refer to CAT FAQ U14 for additional information.

Amended Allocation events must not be reported to CAT in scenarios where:

- An Industry Member makes a correction via a debit/credit to the customer's account instead of modifying the allocation given to the customer.
- Changes do not impact CAT reportable attributes of the allocation.

Any changes to the FDID after the shares/contracts were originally booked in a client account may be reported as either an Amended Allocation event or the cancellation of a Post-Trade Allocation event followed by a new Post-Trade Allocation event regardless if they occur pre-settlement or post-settlement.

Amended Allocation events must not be used to correct ingestion errors on a previously submitted MEPA/MEAA event.

Table 44: Amended Allocation Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when actionType is ‘RPR’	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MEAA	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT.	O
6	allocationKeyDate	Timestamp	When a new Allocation Key is assigned, the date and time the *allocationID* was assigned. When a new Allocation Key is not assigned, the *allocationKeyDate* of the allocation event being modified.	R
7	allocationID	Text (64)	When a new Allocation Key is assigned, the internal allocation ID assigned to the allocation event by the Industry Member. Must be unique within *allocationKeyDate*, *CATReporterIMID*, and symbol combination. When a new Allocation Key is not assigned, the *allocationID* of the allocation event being modified.	R
8	priorAllocationKeyDate	Timestamp	In cases when a new *allocationID* is assigned, the *priorAllocationKeyDate* is the *allocationKeyDate* of the allocation event that is being modified. Required if *priorAllocationID* is populated.	C
9	priorAllocationID	Text (64)	If a new allocation ID is assigned, this is the *allocationID* of the event being modified.	C
10	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
11	eventTimestamp	Timestamp	The date/time the time the allocation amendment was processed.	R
12	quantity	Real Quantity	Quantity being allocated.	R

Seq #	Field Name	Data Type	Description	Include Key
13	price	Price	Price of the allocated shares.	R
14	side	Choice	The side of customer receiving the allocation.	R
15	firmDesignatedID	Text (40)	The FDID of the account receiving the allocation, including subaccounts. Refer to the Data Dictionary for definition and guidance for populating this field.	R
16	custType	Choice	Indicates if the account holder is a natural person or legal entity. Not required until Phase 2d.	O
17	institutionFlag	Boolean	Indicates if the account meets the definition of institution under FINRA Rule 4512(c)	R
18	tradeDate	Date	The trade date of the securities being allocated	R
19	settlementDate	Date	The settlement date of the securities being allocated	R
20	allocationType	Choice	Indicates the type of allocation being made (e.g. custody, DVP, step out, correspondent flip).	R
21	DVPCustodianID	Text (40)	Applicable to DVP transactions. If the custodian is a US broker-dealer, this field must represent the clearing number of the custodian. If the custodian is a US bank and is not a registered broker-dealer, this field must represent the DTC number of the bank. If the custodian is a foreign entity, must be populated with a value of 'FOREIGN'. Refer to CAT FAQ U19 for additional guidance. Required when *allocationType* is 'DVP', 'DVPF', 'FDVP', or 'FDVF'.	C
22	correspondentCRD	Unsigned	The CRD number of the related Introducing Broker or Correspondent firm, if applicable.	C
23	newOrderFDID	Text (40)	The FDID of the related New Order event, if available in the booking system. Requirements for populating this field may be expanded in future phases of CAT.	C
24	allocationInstructionTime	Timestamp	The date/time the time the allocation amendment instruction was received.	O
25	cancelFlag	Boolean	Must be marked as *true* if the allocation was cancelled.	R
26	cancelTimestamp	Timestamp	When *cancelFlag* is *true*, the time at which the allocation was cancelled.	C

Linkage Keys for this Reportable Event:

- Allocation Key: *allocationKeyDate*, *CATReporterIMID, symbol, allocationID*
- Prior Allocation Key: *priorAllocationKeyDate*, *CATReporterIMID*, *symbol, priorAllocationID*

4.15. Order Effective Event

The Order Effective event is used to indicate that an order, or an underlying condition of an order, has become effective. This event is applicable to orders such as conditional (Refer to FAQ D26), Stop, Stop Limit, Trailing Stop, Trailing Stop Limit, Stop on Quote, and Stop Limit on Quote orders. This event is NOT applicable to Stop Stock transactions. The Order Effective event must be reported by the party that was holding the order at the time the order or condition became effective.

If the triggering event causing the order to become effective was a specific price, such as a stop price, the *triggerPrice* field must be populated in scenarios where the trigger price was not explicitly captured in the *handlingInstructions* field on the related new order (e.g. Stop Formula, Trailing Stop). In scenarios where the stop price was captured in prior CAT events associated with the order (e.g., as a name/value pair in *handlingInstructions* on MENO and/or MEOA events), then the information may be optionally be restated in the *triggerPrice* field on the Order Effective event; however, it is not required to be reported again.

If a new order ID is generated when the order becomes effective, which replaces the prior order ID, the *orderID* field must capture the new order ID, and the priorOrderID field must reflect the order ID that is being replaced. If the *orderID* remains the same when the order becomes effective, the *priorOrderID* and *priorOrderKeyDate* must remain blank.

Table 45: Order Effective Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MEOE	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O

Seq #	Field Name	Data Type	Description	Include Key
6	orderKeyDate	Timestamp	When a new Order Key is assigned, the date and time the *orderID* was assigned. When a new Order Key is not assigned, the *orderKeyDate* of the CAT event which is being modified.	R
7	orderID	Text (64)	When a new Order Key is assigned, the internal order ID assigned to the order by the Industry Member. Must be unique within *orderKeyDate, CATReporterIMID*, and *symbol* combination. When a new Order Key is not assigned, the *orderID* of the Order Modified and Cancel/Replace event which is being modified.	R
8	symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA for OTC Equity Securities.	R
9	priorOrderKeyDate	Timestamp	If a new Order Key has been assigned, this is the *orderKeyDate* of the event being modified.	C
10	priorOrderID	Text (64)	If a new Order Key has been assigned, this is the *orderID* of the event being modified. When populated, the *priorOrderID* must not be equal to the *orderID* within the record.	C
11	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
12	eventTimestamp	Timestamp	The date/time the order or underlying condition became effective.	R
13	timeInForce	Name/Value Pairs	The time-in-force for the order (e.g. DAY, IOC, GTC).	R
14	tradingSession	Choice	The trading session(s) during which an order is eligible to trade.	R
15	reservedForFutureUse		Field is Reserved for Future Use and must remain blank.	
16	side	Choice	The side of the order. For this Reportable Event, only same-side adjustments are allowed (e.g., sell long to short sell). Required if the field changed when the order or underlying condition became effective.	C
17	price	Price	The limit price of the order. Required if the field changed when the order became effective.	C
18	quantity	Real Quantity	The order quantity. Required if the field changed when the order or underlying condition became effective.	C

Seq #	Field Name	Data Type	Description	Include Key
19	minQty	Whole Quantity	The minimum quantity of an order to be executed. Required if the field changed when the order or underlying condition became effective. Must be > 0.	C
20	orderType	Choice	The type of order being submitted (e.g., market, limit). Required if the field changed when the order became effective.	R
21	seqNum	Alphanumeric (40)	The sequence number assigned to the CAT event by the ATS's matching engine. Any alphanumeric not containing a delimiter.	A
22	atsDisplayInd	Choice	Indicates if the order is displayed outside of the ATS to subscribers only, or via publicly disseminated quotation data.	A
23	displayPrice	Price	The displayed price of the order. Required when applicable and the field changed when the order or underlying condition became effective.	C
24	workingPrice	Price	The working price of the order. Required when applicable and the field changed when the order or underlying condition became effective.	C
25	displayQty	Whole Quantity	The displayed quantity for this order. Required when applicable and the field changed when the order or underlying condition became effective.	C
26	nbbPrice	Price	The NBBO at the moment the order was originated or received. Prices are required, quantities are optional. If no price or quantity, fields must be populated with a value of '0'.	A
27	nbbQty	Whole Quantity		A
28	nboPrice	Price		A
29	nboQty	Whole Quantity		A
30	nbboSource	Choice	Source of the NBBO data used. If *nbboSource* is 'NA', NBBO price and quantity fields must be populated with a value of '0' and the *nbboTimestamp* must be blank.	A
31	nbboTimestamp	Timestamp	The date/time at which the NBBO was referenced upon the receipt of the order. Must be blank if *nbboSource* is 'NA'.	A
32	triggerPrice	Price	The price at which the order became effective. Required in scenarios where the trigger price was not explicitly captured in the *handlingInstructions* field on the related new order (e.g. Stop Formula, Trailing Stop)	C

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate, CATReporterIMID, symbol, orderID*

5. Single Leg Option Events

This section describes Reportable Events for single leg option transactions. The following table lists each option Reportable Event type with its corresponding Message Type code.

Phase 2b Requirements

In Phase 2b, Industry Members are required to report CAT Industry Member Data related to Eligible Securities that are options and meet the definition of Simple Electronic Option Orders, excluding Electronic Paired Option Orders.

The events related to Simple Electronic Option Orders subject to reporting in Phase 2b are limited to those events which involve electronic receipt of an order, or electronic routing of an order. 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.

Phase 2d Requirements

Beginning in Phase 2d, Industry Members will be required to report:

1. Simple options manual orders.
2. Electronic and manual paired options orders.
3. All complex orders with linkage to all CAT-Reportable legs.

For more details, refer to CAT FAQ K2.

Linkages in Phase 2b

Since only electronic single option orders are reportable beginning in Phase 2b, there are order handling scenarios that will result in unlinked CAT events within a single CAT Reporter, or between sending and receiving firms.

The *priorUnlinked* and *nextUnlinked* fields are used 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, a complex order, or a paired order. The *priorUnlinked* and *nextUnlinked* fields have values to indicate why the immediately preceding or following event is not present.

If the *priorUnlinked* or *nextUnlinked* value is not known at the time of order receipt, the Industry Member may populate the *priorUnlinked* or *nextUnlinked* flag in a separate Option Order Supplement event.

Table 46: Unlinked Event Fields

Field Name	Values	
nextUnlinked	M	Next Manual
	C	Next Complex
	P	Next Paired
	Blank	Not applicable
priorUnlinked	M	Prior Manual
	C	Prior Complex
	Blank	Not applicable

One or both of these fields are included as conditional fields on all options event types. If these fields are not populated, linkage will be attempted.

In Phase 2b, if an Industry Member sends (or receives) a complex order electronically as individual simple option order legs, the preferred method of reporting is to suppress these events in CAT. If an Industry Member is unable to suppress these events in Phase 2b, the Industry Member must populate the *handlingInstructions* field with 'CMPX' to indicate that the order is part of a complex option order, and must include a *priorUnlinked* or *nextUnlinked* flag of 'C' to indicate there will be no linkage to a related order at the sending (or receiving) firm.

Fields specified as Reserved for Future Use are greyed out and must remain blank. Future enhancements to Message Types with positions that are Reserved for Future Use will occupy the available position before adding a new position.

Table 47: Summary of Option Events

Section	Event	Message Type	Description
5.1	New Option Order	MONO	Event used to report new option orders to CAT.
5.2	Option Order Supplement	MONOS	Supplement to the New Option Order event, used when the New Option Order event exceeds the maximum length allowed, or when the orders being combined are not captured in the New Order Event. Also used to provide an FDID once known if not available at time of reporting a MONO, and used in instances when the *priorUnlinked* or *nextUnlinked* flags are unknown at the time of order receipt.
5.3	Paired Option Order	MONP	Event used to report a cross of an agency/initiating order and contra side order(s) for single-leg option orders.
5.4.1	Option Order Route	MOOR	Reported to CAT by an Industry Member that has routed an option order to another Industry Member or an exchange.
5.4.2	Option Route	MOMR	Deferred – event not required for Phase 2b.

Section	Event	Message Type	Description
	Modified		
5.4.3	Option Route Cancelled	MOCR	Deferred – event not required for Phase 2b.
5.5	Option Order Accepted	MOOA	Reported when an Industry Member accepts a single-leg option order routed from another Industry Member or an exchange.
5.6.1	Option Order Internal Route Accepted	MOIR	Reported when an order is internally routed from where it was accepted or originated to another desk or other internal destination.
5.6.2	Option Order Internal Route Modified	MOIM	Reported when an Industry Member modifies an internal route.
5.6.3	Option Order Internal Route Cancelled	MOIC	Reported when an Industry Member cancels an internal route.
5.7.1	Child Option Order	MOCO	Reported to represent instances when an order is sliced within the desk or department it is being worked, and is assigned a new order identifier.
5.7.2	Child Option Order Modified	MOCOM	Reported when a Child Option Order is modified.
5.7.3	Child Option Order Cancelled	MOCOC	Reported when a Child Option Order is cancelled.
5.8	Option Order Modified	MOOM	Reported when changes to the Material Terms of an order are made, or an order is cancel/replaced.
5.8.1	Option Order Modified Supplement	MOOMS	Used for certain aggregated orders in addition to the Option Order Modified event.
5.9	Option Order Adjusted	MOOJ	Used to report simple order modifications including changes to the price or quantity of the order.
5.10	Option Order Cancelled	MOOC	Reported when an order is fully or partially cancelled.
5.11.1	Option Order Fulfillment	MOOF	Reports the fill of a customer order in a combined option order scenario.
5.11.2	Option Order Fulfillment Amendment	MOFA	Reports how an order fulfillment was amended.
5.12.1	Option Post-Trade Allocation	MOPA	Reports how option positions (executed contracts) are allocated to end customer accounts and sub-accounts by clearing firms during post-trade processing.
5.12.2	Option Post-Trade Amended Allocation	MOAA	Reports an amendment to a previously reported allocation.

5.1. New Option Order Event

An Industry Member must report a New Option Order event to CAT when an order is received or originated. This includes:

1. New customer orders
2. Combined orders
3. Proprietary orders
4. Order(s) received from a non-reporting foreign broker-dealer or affiliate.

An order received from another CAT Reporter (US broker-dealer or an exchange) must be reported as an Option Order Accepted event.

<u>Combined Orders</u>

Industry Members are required to populate a *representativeInd* value of “O” in scenarios where the Industry Member, subject to applicable SRO rules, combines individual, simple option orders from customers before routing to an exchange as a single, simple order for execution.

Industry Members will be required to populate a *representativeInd* value of “OS” in Phase 2d when the number of combined orders included in the *aggregatedOrders* field causes the New Order event to exceed the maximum allowed message length, or when the orders being represented are not captured in the New Order Event.

Phase 2b does not require explicit order linkage between the combined order and the original customer orders. In Phase 2d, linkage is required between the combined order and the original customer orders through the *aggregatedOrders* field.

Refer to the CAT Industry Member Reporting Scenarios document for detailed examples of how options combined orders are reported in Phase 2b.

Table 48: New Option Order Event

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is ‘RPR’. Must be blank when *actionType* is ‘NEW’.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE	R

Seq #	Field Name	Data Type	Description	Include Key
			Identifier> Must be unique for the Event Date and CAT Reporter IMID.	
4	type	Message Type	MONO	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	orderKeyDate	Timestamp	The date and time the *orderID* was assigned.	R
7	orderID	Text (64)	The internal order ID assigned to the order by the Industry Member. Must be unique within same date, *CATReporterIMID*, and *optionID* combination.	R
8	optionID	Text (22)	The 21-character OSI Symbol of the option. For FLEX Percent options, a percentage symbol (%) is appended before the OSI symbol elements. See the Option Symbols section for more information.	R
9	eventTimestamp	Timestamp	The date/time of receipt of the order. If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or a finer increment up to nanoseconds.	R
10	manualFlag	Boolean	Must be marked as *true* if the order is handled manually. Manual option orders are not required until Phase 2d.	R
11	manualOrderKeyDate	Timestamp	The *orderKeyDate* of the related manual order. Required when *manualOrderID* is populated.	O
12	manualOrderID	Text (64)	When this is a duplicative electronic message of a previously (separately) reported manual New Option Order event (*electronicDupFlag* is *true*), this field is to capture the internal order ID of the manual order. Optional for Phase 2a.	O
13	electronicDupFlag	Boolean	Indicates whether this is a duplicative electronic message of a manual event. If populated as *true*, this message will not be linked to any other events in Phase 2b.	R
14	electronicTimestamp	Timestamp	The time at which the event is systematized. Required when *manualFlag* is *true* and the event is systematized. Options manual order specifications are deferred to Phase 2d.	C
15	deptType	Choice	This is the category of internal department, unit or desk originating the order.	R
16	side	Choice	The side of the order.	R
17	price	Price	The limit price of the order per contract. Required when *orderType* is ‘LMT’. Must be blank when *orderType* is ‘MKT’.	C

Seq #	Field Name	Data Type	Description	Include Key
			For FLEX Percent options, this field may reflect a percentage of the underlying closing price, e.g., for a price equal to 95.5% of the underlying close price, this field would contain 95.5.	
18	quantity	Real Quantity	The quantity of contracts.	R
19	minQty	Whole Quantity	The minimum quantity of contracts to be executed. Must be > 0.	C
20	orderType	Choice	The type of order being submitted.	R
21	timeInForce	Name/Value Pairs	The time-in-force for the order.	R
22	tradingSession	Choice	The trading session(s) during which an order is eligible to trade.	R
23	handlingInstructions	Name/Value Pairs	The order handling instructions for the order.	C
24	firmDesignatedID	Text (40)	Refer to the Data Dictionary for definition and guidance for populating this field.	R
25	accountHolderType	Choice	Represents the type of beneficial owner of the account for which the order was received or originated.	R
26	affiliateFlag	Boolean	Indicates if the routing party is an affiliate of the Industry Member.	R
27	aggregatedOrders	Aggregated Orders	When applicable, the order ID of each customer order being combined. Refer to Appendix C for representative order linkage requirements.	C
Aggregated Orders – Start For each order being combined *n*, the following values are required.				
27.*n*.1	orderID	Text (64)	*orderID* of the order being combined.	R
27.*n*.2	orderKeyDate	Timestamp	*orderKeyDate* of the order being combined.	R
27.*n*.3	quantity	Real Quantity	Required when a partial quantity of the order is being combined.	C
27.*n*.4	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID*.	C
Aggregated Orders – End				
28	reservedForFutureUse		Field is Reserved for Future Use and must remain blank.	
29	openCloseIndicator	Choice	Indicates whether the action taken (buy or sell) will open a new position or will close an existing position in the order originator's account. Required when the exchange's rules require an order to be marked as open or close upon entry into the exchange.	C

Seq #	Field Name	Data Type	Description	Include Key
30	representativeInd	Choice	Indicates if the order is a combined order.	R
31	nextUnlinked	Choice	For Phase 2b, indicates whether the given option event is unlinked in the option order lifecycle, as the next event is out of scope for Phase 2b.	C

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate, CATReporterIMID, optionID, orderID*
- Order Key: *aggregatedOrders.orderKeyDate, CATReporterIMID*, *optionID*, *aggregatedOrders.orderID*
- Manual Order Key: *manualOrderKeyDate*, *CATReporterIMID, optionID, manualOrderID* (Optional in Phase 2b)
- Complex Order Key: (Not applicable in Phase 2b)

5.2. Option Order Supplement Event

The Option Order Supplement Event is a supplement to the New Option Order event. One New Option Order event can have multiple Option Order Supplement events. Multiple Option Order Supplement events are considered additions, not replacements or modifications.

This event accommodates reporting in the following scenarios:

Aggregated Orders

In Phase 2d, the Option Order Supplement can be used in scenarios when the New Option Order event exceeds the maximum length allowed, or when the orders being combined are not captured in the New Option Order Event.

The *aggregatedOrders* field in the Option Order Supplement event must contain the additional Aggregated Orders that were not captured in the original New Option Order event, or another Supplement event for the same order.

FDID

This event accommodates reporting in scenarios when an Industry Member receives an order for a new account and the new account number, on which the FDID is based, is not yet available for creation and reporting of the CAT new order event. If an FDID has not yet been created when an order has been received, the Industry Member must populate the *firmDesignatedID* field in its New Option Order event with a value of ‘PENDING’.

Once the FDID becomes available, the Industry Member must report the actual FDID in the *firmDesignatedID* field in an Option Order Supplement event. Any Option Order Supplement event with an FDID populated will not be considered late for CAT reporting purposes if it is received by 8AM on T+3.

Prior/Next Unlinked

In Phase 2b, the Option Order Supplement can be used in scenarios where firms are required to populate the *priorUnlinked* or *nextUnlinked* flags in a New Option Order event or an Option Order Accepted event, but the value for these flags is unknown at the time of order receipt.

Table 49: Option Order Supplement Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is ‘RPR’. Must be blank when *actionType* is ‘NEW’.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MONOS	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	orderKeyDate	Timestamp	The *orderKeyDate* of the related New Option Order event which this event is Supplementing.	R
7	orderID	Text (64)	The *orderID* of the related New Option Order event which this event is Supplementing.	R
8	optionID	Text (22)	The 21-character OSI Symbol of the option. For FLEX Percent options, a percentage symbol (%) is appended before the OSI symbol elements. See the Option Symbols section for more information.	R
9	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had	C

Seq #	Field Name	Data Type	Description	Include Key
			open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	
10	eventTimestamp	Timestamp	The date/time of the related New Option Order event this event supplements (including scenarios in which the supplement is created at a later time).	R
11	aggregatedOrders	Aggregated Orders	When applicable, the order ID of each customer order being combined. Refer to Appendix C for combined order linkage requirements.	C
Aggregated Orders – Start For each order being combined *n*, the following values are required.				
11.*n*.1	orderID	Text (64)	*orderID* of the order being combined.	R
11.*n*.2	orderKeyDate	Timestamp	*orderKeyDate* of the order being combined.	R
11.*n*.3	quantity	Real Quantity	Required when a partial quantity of the order is being combined.	C
11.*n*.4	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
Aggregated Orders – End				
12	priorUnlinked	Choice	For Phase 2b, indicates whether the reported option event is unlinked to the prior event in the option order lifecycle, as the prior event is out of scope Phase 2b.	C
13	nextUnlinked	Choice	For Phase 2b, indicates whether the given option event is unlinked in the option order lifecycle, as the next event is out of scope for Phase 2b.	C
14	firmDesignatedID	Text (40)	Required when reporting a supplement to an MONO event that was reported prior to the FDID being available. Refer to the Data Dictionary for definition and guidance for populating this field.	C

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate, CATReporterIMID*, *optionID, orderID*
- Order Key: *aggregatedOrders.orderKeyDate, CATReporterIMID, optionID, aggregatedOrders.orderID*

5.3. Paired Option Order (Phase 2d)

<Deferred - Not Required Until Phase 2d>

5.4. Option Order Route

Industry Members must report Option Order Route events to CAT when reporting the routing of option orders.

5.4.1. Option Order Route Event

An Industry Member must report to CAT an Option Order Route Event when:

- Routing to another Industry Member
- Routing to exchanges
- Routing between two IMIDs (e.g. two different FINRA MPIDs) attributed to the same legal entity (i.e. the same CRD)

In order for CAT to maintain order lifecycle linkage, the *orderID* populated in the Option Order Route event must reference the most recent internal ID of the order. For example, if an order was modified before routing out, the Route Event must use the ID assigned on the order modification.

Internal routes to another desk or department within an Industry Member are not reported using the Option Order Route event; instead an Option Order Internal Route Accepted event is used. See the Option Order Internal Route Accepted section for more details.

Handling Instructions on the Option Order Route

Handling Instructions are not required to be reported on the Order Route event until Phase 2d. In Phase 2d, the handling instructions included in this event should represent the handling instructions sent by the routing firm to the receiving destination. If the handling instructions do not change when the order is routed from the handling instructions received by the Industry Member and reported on the Option Order Accepted or New Option Order associated with the order, Industry Members may use the handling instruction code "RAR" (Routed as Received) instead of repeating each individual handling instruction.

Table 50: Option Order Route Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a	R

Seq #	Field Name	Data Type	Description	Include Key
			CAT error.	
2	errorROEID	Unsigned	Required when *actionType* is ‘RPR’. Must be blank when *actionType* is ‘NEW’.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MOOR	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	orderKeyDate	Timestamp	The *orderKeyDate* of the event which is being routed.	R
7	orderID	Text (64)	The *orderID* of the event which is being routed.	R
8	optionID	Text (22)	The 21-character OSI Symbol of the option. For FLEX Percent options, a percentage symbol (%) is appended before the OSI symbol elements. See the Option Symbols section for more information.	R
9	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
10	eventTimestamp	Timestamp	The date/time of the route. If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or a finer increment up to nanoseconds.	R
11	manualFlag	Boolean	Must be marked as *true* if the order is handled manually. Manual option orders are not required until Phase 2d.	R
12	electronicDupFlag	Boolean	Indicates whether this is a duplicative electronic message of a manual event. If populated as *true*, this message will not be linked to any other events in Phase 2b.	R
13	electronicTimestamp	Timestamp	The time at which the event is systematized. Required when *manualFlag* is *true*. Options manual order specifications are deferred to Phase 2d.	C
14	senderIMID	Industry Member ID	The IMID used to identify the Industry Member that is routing the order, known by the destination. When *destinationType* is ‘F’, this value must	C

Seq #	Field Name	Data Type	Description	Include Key
			equal the *senderIMID* on the Option Order Accepted event reported by the destination. When *destinationType* is ‘E’, this value must equal the *routingParty* reported by the exchange on the Participant Order Accepted event.	
15	destination	Industry Member ID / Exchange ID	When *destinationType* is ‘F’, this value is the IMID used to identify the Industry Member that is receiving this routed order, and must equal the *receiverIMID* field on the Option Order Accepted event reported by the destination Industry Member. When *destinationType* is ‘E’, this value is the Exchange ID of the destination exchange, and must equal the *exchange* field on the Order Accepted event reported by the destination exchange.	C
16	destinationType	Choice	Indicates whether the destination of the route is an Industry Member, or an exchange.	R
17	routedOrderID	Text (64)	The ID assigned to the order by the Industry Member when routing the order to another Industry Member or exchange. This value must match the value for *routedOrderID* reported by the destination in their Option Order Accepted report. Must be unique per combination of Event Date, symbol (or optionID), *destination, senderIMID*, and *session* (applicable only on routes to exchanges). Required when *destinationType* is ‘F’ or ‘E’ and *manualFlag* is *false*.	C
18	session	Text (40)	The session ID used when routing the order. Must only be populated when *destinationType* is ‘E’. This must match the session ID reported in the Participant Option Order Accepted event by the receiving exchange.	C
19	side	Choice	The side of the order.	R
20	price	Price	The limit price per contract included on the order when routed. Required when *orderType* is ‘LMT’. Must be blank when *orderType* is ‘MKT’. For FLEX Percent options, this field may reflect a percentage of the underlying close price (e.g. a contract price of 101% of the underlying close price would be represented in this field as 101.00).	C
21	quantity	Real Quantity	The quantity of contracts included on the order when routed.	R
22	minQty	Whole Quantity	The minimum quantity of an order to be executed. Required if included on the order	C

Seq #	Field Name	Data Type	Description	Include Key
			when routed. Must be > 0.	
23	orderType	Choice	The type of order being routed.	R
24	timeInForce	Name/Value Pairs	The Time-in-Force for the order.	R
25	tradingSession	Choice	The trading session(s) during which an order is eligible to trade	R
26	handlingInstructions	Name/Value Pairs	The order handling instructions for the order.	C
27	routeRejectedFlag	Boolean	Indicates the routed order was not accepted by the destination (rejected or no response) when marked *true*. Not applicable for Phase 2b. (Routes that are not accepted are required to be reported in Phase 2d.)	O
28	exchOriginCode	Text (4)	The code signifying the origin of the account as sent to the exchange. Required when *destinationType* is 'E'.	C
29	affiliateFlag	Boolean	Indicates if the order is being routed to an affiliate of the Industry Member.	R
30	reservedForFutureUse		Field is Reserved for Future Use and must remain blank.	
31	openCloseIndicator	Choice	Indicates when exchange rules require an order to be marked as open or close upon entry into the exchange.	C
32	priorUnlinked	Choice	For Phase 2b, indicates whether the reported option event is unlinked to the prior event in the option order lifecycle, as the prior event is out of scope Phase 2b.	C
33	nextUnlinked	Choice	For Phase 2b, indicates whether the given option event is unlinked in the option order lifecycle, as the next event is out of scope for Phase 2b. For Option Order Route events, only applicable to single legs of a complex option order. Allowed values on Option Order Route events are limited to "C" or blank.	C

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate, CATReporterIMID*, *optionID, orderID*
- Route Linkage Key: Event Date, *senderIMID, destination, optionID, session, routedOrderID*

5.4.2. Option Route Modified Event (Phase 2d)

<Deferred – event not required for Phase 2b.>

5.4.3. Option Route Cancelled Event (Phase 2d)

<Deferred – event not required for Phase 2b.>

5.5. Option Order Accepted

An Option Order Accepted event must be reported to CAT when an Industry Member receives an order from another CAT Reporter (i.e., Industry Member or exchange), or from another IMID belonging to the same Industry Member (i.e., the same CRD).

At the start of Phase 2b, there will be some lifecycles beginning at the Option Order Accepted event, as Small Industry Members are not required to report until a later phase.

New customer orders, orders received from a non-broker-dealer affiliate, and orders received from a non-reporting foreign broker-dealer must be reported using a New Option Order event.

Table 51: Option Order Accepted Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MOOA	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	orderKeyDate	Timestamp	The date and time the *orderID* was assigned.	R
7	orderID	Text (64)	The order ID assigned to the order by the Industry Member upon acceptance. Must be unique within same date, *CATReporterIMID*, and *optionID* combination.	R
8	optionID	Text (22)	The 21-character OSI Symbol of the option. For FLEX Percent options, a percentage symbol (%) is appended before the OSI symbol elements. See the Option Symbols section for more information.	R

Seq #	Field Name	Data Type	Description	Include Key
9	eventTimestamp	Timestamp	The date/time of receipt of the order. If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or a finer increment up to nanoseconds.	R
10	manualOrderKeyDate	Timestamp	The *orderKeyDate* of the related manual order. Required when *manualOrderID* is populated.	O
11	manualOrderID	Text (64)	When this is a duplicative electronic message of a previously (separately) reported manual Option Order Accepted event (*electronicDupFlag* is *true*), this field is to capture the internal order ID of the manual order. Optional for Phase 2b.	O
12	manualFlag	Boolean	Must be marked as *true* if the order is handled manually. Manual option orders are not required until Phase 2d.	R
13	electronicDupFlag	Boolean	Indicates whether this is a duplicative electronic message of a manual event. If populated as *true*, this message will not be linked to any other events in Phase 2b.	R
14	electronicTimestamp	Timestamp	The time at which the event is systematized. Required when *manualFlag* is *true* and the event is systematized. Options manual order specifications are deferred to Phase 2d.	C
15	receiverIMID	Industry Member ID	The IMID of the Industry Member receiving the order. When *senderType* is 'F', this value must equal the *destination* field on the Option Order Route event reported by the routing Industry Member. When *senderType* is 'E', this value must equal the *routingParty* on the Option Order Route event reported by the exchange.	R
16	senderIMID	Industry Member ID / Exchange ID	When *senderType* is 'F', this value is the IMID of the sending Industry Member from which the order is routed, and must equal the *senderIMID* in the Option Order Route event reported by the routing Industry Member. When *senderType* is 'E', this value is the Exchange ID of the sending Industry Member from which the order is routed, and must equal the *exchange* field in the Order Route event reported by the exchange.	R
17	senderType	Choice	Indicates the type of origin from which the order is routed.	R
18	routedOrderID	Text (64)	The ID for the order as sent by the routing entity. Must be unique per combination of Event Date, symbol (or optionID), *senderIMID*, and *receiverIMID*.	C

Seq #	Field Name	Data Type	Description	Include Key
			Required when *manualFlag* is *false*.	
19	deptType	Choice	This is the category of internal department, unit or desk receiving the order.	R
20	side	Choice	The side of the order.	R
21	price	Price	The price per contract received on this order. Required when *orderType* is 'LMT'. Must be blank when *orderType* is 'MKT'.	C
22	quantity	Real Quantity	The quantity of contracts on the accepted order.	R
23	minQty	Whole Quantity	The minimum quantity of an order to be executed. Required if included on the order when received. Must be > 0.	C
24	orderType	Choice	The type of order received	R
25	timeInForce	Name/Value Pairs	The Time-in-Force for the order.	R
26	tradingSession	Choice	The trading session(s) during which an order is eligible to trade.	R
27	handlingInstructions	Name/Value Pairs	The order handling instructions for the order.	C
28	affiliateFlag	Boolean	Indicates if the routing party is an affiliate of the Industry Member.	R
29	reservedForFutureUse		Field is Reserved for Future Use and must remain blank.	
30	reservedForFutureUse		Field is Reserved for Future Use and must remain blank.	
31	openCloseIndicator	Choice	Indicates whether the action taken (buy or sell) will open a new position or will close an existing position in the order originator's account. Required when the exchange's rules require an order to be marked as open or close upon entry into the exchange.	C
32	priorUnlinked	Choice	For Phase 2b, indicates whether the reported option event is unlinked to the prior event in the option order lifecycle, as the prior event is out of scope Phase 2b. For Option Order Accepted events, only applicable to single legs of a complex option order. Allowed values on Option Order Accepted events are limited to "C" or blank.	C
33	nextUnlinked	Choice	For Phase 2b, indicates whether the given option event is unlinked in the option order lifecycle, as the next event is out of scope for Phase 2b.	C

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate*, *CATReporterIMID*, *optionID, orderID*

- Route Linkage Key: Event Date, *senderIMID, receiverIMID, optionID, routedOrderID*
- Manual Order Key: *manualOrderKeyDate*, *CATReporterIMID, optionID, manualOrderID* (optional in Phase 2b)

5.6. Option Order Internal Route Accepted

An Option Order Internal Route Accepted event must be reported when an order is passed internally to a different department or desk within a *CATReporterIMID*. Routes between different IMIDs attributed to the same Industry Member must be reported as Option Order Route and Option Order Accepted events.

An Option Order Internal Route Accepted event is required to be reported from the perspective of the recipient desk, and shows that an order was received by an internal destination. If the internal destination assigns a new *orderID* to the Option Order Internal Route Accepted event, the *parentOrderID* must be populated with the *orderID* of the event that was internally routed, and the *parentOrderKeyDate* must be populated.

Industry Members may generate child orders using the Child Option Order event prior to routing internally to another desk. This approach is acceptable for CAT reporting and will not result in unlinked events.

Option Order Internal Route Modified and Option Order Internal Route Cancelled are not required to be reported until Phase 2d.

5.6.1. Option Order Internal Route Accepted Event

Option Order Internal Route Accepted event is used to report an order sent internally to another desk.

Table 52: Option Order Internal Route Accepted Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is ‘RPR’. Must be blank when *actionType* is ‘NEW’.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MOIR	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry	O

Seq #	Field Name	Data Type	Description	Include Key
			Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	
6	orderKeyDate	Timestamp	When a new Order Key is assigned, the date and time the *orderID* was assigned. When a new Order Key is not assigned, the *orderKeyDate* of the order that was internally routed.	R
7	orderID	Text (64)	When a new Order Key is assigned, the internal order ID assigned to the order by the Industry Member. Must be unique within *orderKeyDate, CATReporterIMID*, and *optionID* combination. When a new Order Key is not assigned, the *orderID* of the order that was internally routed.	R
8	optionID	Text (22)	The 21-character OSI Symbol of the option. For FLEX Percent options, a percentage symbol (%) is appended before the OSI symbol elements. See the Option Symbols section for more information.	R
9	parentOrderKeyDate	Timestamp	If a new Order ID has been assigned, this is the *orderKeyDate* of the event from which the Option Order Internal Route Accepted event originated. Required when the *parentOrderID* is populated.	C
10	parentOrderID	Text (64)	If a new Order ID has been assigned, this is the *orderID* of the event from which the Option Order Internal Route Accepted event originated. When populated, the *parentOrderID* must not be equal to the *orderID* within the record. Required when the *parentOrderKeyDate* is populated.	C
11	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
12	eventTimestamp	Timestamp	The date/time of receipt by the receiving desk. If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or a finer increment up to nanoseconds.	R
13	manualFlag	Boolean	Must be marked as *true* if the order is handled manually. Manual option orders are not required until Phase 2d.	R
14	electronicTimestamp	Timestamp	The time at which the event is systematized. Required when *manualFlag* is *true* and the	C

Seq #	Field Name	Data Type	Description	Include Key
			event is systematized. Options manual order specifications are deferred to Phase 2d.	
15	deptType	Choice	The category of department, unit, or desk that is the destination of this internal route event.	R
16	receivingDeskType	Choice	Field indicates the type of desk receiving the internally routed order. More granular than the field *deptType*.	R
17	side	Choice	The side of the order.	R
18	price	Price	The limit price of the order. Required when *orderType* is 'LMT'. Must be blank when *orderType* is 'MKT'.	C
19	quantity	Real Quantity	The quantity of contracts on the order when internally routed.	R
20	minQty	Whole Quantity	The minimum quantity of an order to be executed. Required if included on the order when internally routed. Must be > 0.	C
21	orderType	Choice	The type of order received from the routing desk or department.	R
22	handlingInstructions	Name/Value Pairs	The order handling instructions for the order.	C
23	openCloseIndicator	Choice	Indicates whether the action taken (buy or sell) will open a new position or will close an existing position in the order originator's account. Required when the exchange's rules require an order to be marked as open or close upon entry into the exchange.	C
24	priorUnlinked	Choice	For Phase 2b, indicates whether the reported option event is unlinked to the prior event in the option order lifecycle, as the prior event is out of scope Phase 2b.	C
25	nextUnlinked	Choice	For Phase 2b, indicates whether the given option event is unlinked in the option order lifecycle, as the next event is out of scope for Phase 2b.	C
26	timeInForce	Name/Value Pairs	The Time-in-Force for the order.	R
27	tradingSession	Choice	The trading session(s) during which an order is eligible to trade.	R

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate, CATReporterIMID, optionID, orderID*
- Parent Order Key: *parentOrderKeyDate CATReporterIMID, optionID*, and *parentOrderID*

5.6.2. Option Order Internal Route Modify Event (Phase 2d)

<Deferred - Not Required Until Phase 2d>

5.6.3. Option Order Internal Route Cancelled Event (Phase 2d)

<Deferred - Not Required Until Phase 2d>

5.7. Child Option Order

The Child Option Order is used to represent instances when an order is sliced within the desk or department it is being worked, and is assigned a new order identifier. While all CAT reportable activity must be reported to CAT in applicable phases, Child Option Order events are not required to be utilized for CAT reporting. These event types are provided for the convenience of Industry Members to help model these types of order handling scenarios.

Child Option Order events are defined to include only the key data elements that may be changed when the event is created including fields to link to the parent order. The following rules apply with respect to Child Option Orders:

1. Child Option Order events can only be used when an order is sliced and assigned new order IDs within the same desk. An Option Order Internal Route Accepted event must be reported when routed to another desk.
2. A child order may be generated off of another child order without limitation.
3. Child Option Orders must belong to the same FDID as the parent order.
4. Child Option Orders must ***not*** be used for single legs of a multi-leg option order.

5.7.1. Child Option Order Event

Table 53: Child Option Order Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MOCO	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry	O

Seq #	Field Name	Data Type	Description	Include Key
			Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	
6	orderKeyDate	Timestamp	The date and time the *orderID* was assigned.	R
7	orderID	Text (64)	The internal order ID assigned to the child order by the Industry Member. Must be unique with the *orderKeyDate*, *CATReporterIMID*, and *optionID* combination.	R
8	optionID	Text (22)	The 21-character OSI Symbol of the option. For FLEX Percent options, a percentage symbol (%) is appended before the OSI symbol elements. See the Option Symbols section for more information.	R
9	parentOrderKeyDate	Timestamp	*orderKeyDate* of the event from which the Child Order originated.	R
10	parentOrderID	Text (64)	The *orderID* of the event from which the Child Order originated. The *parentOrderID* must not be equal to the *orderID* within the record.	R
11	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
12	eventTimestamp	Timestamp	The date/time at which the child order was originated.	R
13	side	Choice	The side of the order.	R
14	price	Price	The limit price of the order per contract. Required when *orderType* is 'LMT'. Must be blank when *orderType* is 'MKT'. For FLEX Percent options, this field may reflect a percentage of the underlying closing price, e.g., for a price equal to 95.5% of the underlying close price, this field would contain 95.5.	C
15	quantity	Real Quantity	The quantity of contracts of the Child order.	R
16	minQty	Whole Quantity	The minimum quantity of contracts to be executed. Must be > 0.	C
17	orderType	Choice	The type of order being submitted (i.e. market, limit, or cabinet).	R
18	timeInForce	Name/Value Pairs	The time-in-force for the order (e.g. DAY, IOC, GTC).	R
19	tradingSession	Choice	The trading session(s) during which an order is eligible to trade.	R
20	handlingInstructions	Name/Value Pairs	The order handling instructions for the order.	C
21	openCloseIndicator	Choice	Indicates when exchange rules require an order to be marked as open or close upon	R

Seq #	Field Name	Data Type	Description	Include Key
			entry into the exchange.	
22	priorUnlinked	Choice	For Phase 2b, indicates whether the reported option event is unlinked to the prior event in the option order lifecycle, as the prior event is out of scope Phase 2b.	C
23	nextUnlinked	Choice	For Phase 2b, indicates whether the given option event is unlinked in the option order lifecycle, as the next event is out of scope for Phase 2b.	C

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate, CATReporterIMID, optionID, orderID*
- Parent Order Key: *parentOrderKeyDate, CATReporterIMID, optionID, parentOrderID*

5.7.2. Child Option Order Modified Event

Industry Members must report a Child Option Order Modified event to CAT when the Material Terms of the child order have been changed (e.g. price, quantity). All attributes and Material Terms of the modified child order listed on this event must be restated with the modification(s) reflected.

A Child Option Order Modification event is reported only in cases when a Child Option Order is modified. A Child Option Order Modified event must not be used when modifying an Option Order Internal Route Accepted event.

Table 54: Child Option Order Modified Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MOCOM	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated,	O

Seq #	Field Name	Data Type	Description	Include Key
			must equal the *CATReporterIMID* in the filename.	
6	orderKeyDate	Timestamp	When a new Order Key is assigned, the date and time the *orderID* was assigned. When a new Order Key is not assigned, the *orderKeyDate* of the Child Option Order event which is being modified.	R
7	orderID	Text (64)	When a new Order Key is assigned, the internal order ID assigned to the order by the Industry Member. Must be unique within *orderKeyDate, CATReporterIMID*, and *optionID* combination. When a new Order Key is not assigned, the *orderID* of the Child Order being modified.	R
8	optionID	Text (22)	The 21-character OSI Symbol of the option. For FLEX Percent options, a percentage symbol (%) is appended before the OSI symbol elements. See the Option Symbols section for more information.	R
9	priorOrderKeyDate	Timestamp	If a new Order ID has been assigned, this is the *orderKeyDate* of the Child Order being modified.	C
10	priorOrderID	Text (64)	If a new Order ID has been assigned, this is the *orderID* of the Child Order being modified. When populated, the *priorOrderID* must not be equal to the *orderID* within the record.	C
11	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
12	eventTimestamp	Timestamp	The date/time at which the child order was modified.	R
13	side	Choice	The side of the order.	R
14	price	Price	The limit price of the order per contract. Required when *orderType* is ‘LMT’. Must be blank when *orderType* is ‘MKT’. For FLEX Percent options, this field may reflect a percentage of the underlying closing price, e.g., for a price equal to 95.5% of the underlying close price, this field would contain 95.5.	C
15	quantity	Real Quantity	The quantity of contracts of the Child Order.	R
16	minQty	Whole Quantity	The minimum quantity of contracts to be executed. Must be > 0.	C
17	leavesQty	Real Quantity	The number of contracts of the Child Order left open after the modification has occurred. Must be less than or equal to *quantity*.	R

Seq #	Field Name	Data Type	Description	Include Key
18	orderType	Choice	The type of order being submitted.	R
19	timeInForce	Name/Value Pairs	The time-in-force for the order.	R
20	tradingSession	Choice	The trading session(s) during which an order is eligible to trade.	R
21	handlingInstructions	Name/Value Pairs	The order handling instructions for the order.	C
22	openCloseIndicator	Choice	Indicates whether the action taken (buy or sell) will open a new position or will close an existing position in the order originator's account. Required when the exchange's rules require an order to be marked as open or close upon entry into the exchange.	C
23	priorUnlinked	Choice	For Phase 2b, indicates whether the reported option event is unlinked to the prior event in the option order lifecycle, as the prior event is out of scope Phase 2b.	C
24	nextUnlinked	Choice	For Phase 2b, indicates whether the given option event is unlinked in the option order lifecycle, as the next event is out of scope for Phase 2b.	C

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate, CATReporterIMID, optionID, orderID*
- Prior Order Key: *priorOrderKeyDate*, *CATReporterIMID, optionID*, and *priorOrderID*

5.7.3. Child Option Order Cancelled

If a child option order is cancelled, a Child Option Order Cancelled event must be reported to CAT by the Industry Member.

A partial cancellation can be reported either with a Child Option Order Modified event or Child Option Order Cancelled event with *leavesQty*, depending on how it is handled by the Industry Member. If a cancel message was used, the Industry Member must report a Child Option Order Cancelled event to CAT. If a modify or cancel/replace message was used, a Child Option Order Modified event must be reported to CAT. This keeps the reported event in line with the action taken by the Industry Member.

Table 55: Child Option Order Cancelled Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a	R

Seq #	Field Name	Data Type	Description	Include Key
			CAT error.	
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MOCOC	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	orderKeyDate	Timestamp	The *orderKeyDate* of the Child Option Order event which is being cancelled.	R
7	orderID	Text (64)	The *orderID* of the Child Option Order event which is being cancelled.	R
8	optionID	Text (22)	The 21-character OSI Symbol of the option. For FLEX Percent options, a percentage symbol (%) is appended before the OSI symbol elements. See the Option Symbol section for more information.	R
9	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID*.	C
10	eventTimestamp	Timestamp	The date/time at which the child order was cancelled.	R
11	side	Choice	The side of the order.	R
12	cancelQty	Real Quantity	The quantity of the Child order being cancelled.	R
13	leavesQty	Real Quantity	The number of contracts of the Child Order left open after the cancellation. Full cancellation will result in a zero in the field.	R
14	reservedForFutureUse		Field is Reserved for Future Use and must remain blank.	
15	priorUnlinked	Choice	For Phase 2b, indicates whether the reported option event is unlinked to the prior event in the option order lifecycle, as the prior event is out of scope Phase 2b.	C

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate, CATReporterIMID, optionID, orderID*

5.8. Option Order Modified and Cancel/Replace Event

Industry Members must report an Option Order Modified event to CAT when the Material Terms of an order have been changed (e.g. price, quantity), or when an order is cancel/replaced. All attributes and Material Terms of the modified order must be restated with the modification(s) reflected. If the order is a combined order, the *aggregatedOrders* field must be restated every time the order is modified or cancel/replaced. Changes to the orders being combined in the *aggregatedOrders* field are considered a modification to the order. The *side* field is required to be reported, but side adjustments are only allowed for same-side changes, including changes between Short Sale and Sell Long.

If a modification results in the generation of new order with a new Order ID which replaces the prior order, the *orderID* field must capture the identifier for the new order, and the prior order fields must reflect the order that is being replaced. If the order has been modified several times, the *priorOrderID* must refer to order ID of the order that is being replaced. If the order ID remains the same during the modification, the *priorOrderID* must remain blank.

All attributes and Material Terms of the modified order listed on this event must be reported when applicable, including the fields that remain unchanged.

Table 56: Option Order Modified and Cancel/Replace Event

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MOOM	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	orderKeyDate	Timestamp	When a new Order Key is assigned, the date and time the *orderID* was assigned. When a new Order Key is not assigned, the *orderKeyDate* of the CAT event which is	R

Seq #	Field Name	Data Type	Description	Include Key
			being modified.	
7	orderID	Text (64)	When a new Order Key is assigned, the internal order ID assigned to the order by the Industry Member. Must be unique within *orderKeyDate, CATReporterIMID*, and *optionID* combination. When a new Order Key is not assigned, the *orderID* of the Option Order Modified and Cancel/Replace event which is being modified.	R
8	optionID	Text (22)	The 21-character OSI Symbol of the option. For FLEX Percent options, a percentage symbol (%) is appended before the OSI symbol elements. See the Option Symbols section for more information.	R
9	priorOrderKeyDate	Timestamp	If a new Order ID has been assigned, this is the *orderKeyDate* of the event being modified.	C
10	priorOrderID	Text (64)	If a new Order ID has been assigned, this is the *OrderID* of the event being modified. When populated, the *priorOrderID* must not be equal to the *orderID* within the record.	C
11	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
12	eventTimestamp	Timestamp	The date/time of receipt of the modification to the order. If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or a finer increment up to nanoseconds.	R
13	manualOrderKeyDate	Timestamp	The *orderKeyDate* of the related manual order. Required when *manualOrderID* is populated.	O
14	manualOrderID	Text (64)	When this is a duplicative electronic message of a previously (separately) reported manual Option Order Modified and Cancel/Replace event (*electronicDupFlag* is *true*), this field is to capture the internal order ID of the manual order. Optional for Phase 2a.	O
15	manualFlag	Boolean	Must be marked as *true* if the order is handled manually. Manual option orders are not required until Phase 2d.	R
16	electronicDupFlag	Boolean	Indicates whether this is a duplicative electronic message of a manual event. If populated as *true*, this message will not be linked to any other events in Phase 2b.	R

Seq #	Field Name	Data Type	Description	Include Key
17	electronicTimestamp	Timestamp	The time at which the event is systematized. Required when *manualFlag* is *true* and the event is systematized. Options manual order specifications are deferred to Phase 2d.	C
18	receiverIMID	Industry Member ID	Required when the modification is received from an Industry Member or an exchange. The IMID of the Industry Member receiving the routed order modification. When *senderType* is 'F', this value must equal the *destination* field on the Order Route event reported by the routing Industry Member. When *senderType* is 'E', this value must equal the *routingParty* on the Participant Order Modify Route reported by the exchange.	C
19	senderIMID	Industry Member ID / Exchange ID	Required when the modification is received from an Industry Member or an exchange. When *senderType* is 'F', this value is the IMID of the sending Industry Member from which the order is routed, and must equal the *senderIMID* in the Order Route event reported by the routing Industry Member. When *senderType* is 'E', this value is the Exchange ID of the sending entity from which the order is routed, and must equal the *exchange* field in the Participant Order Modify Route event reported by the exchange.	C
20	senderType	Choice	Required when the modification is received from an Industry Member or an exchange. Indicates the type of origin from which the order is routed.	C
21	routedOrderID	Text (64)	The ID for the order as sent by the routing entity. Must be unique per combination of Event Date, symbol (or optionID), *senderIMID,* and *receiverIMID*. Required when *senderType* is 'F' or 'E' and *manualFlag* is *false*.	C
22	initiator	Choice	Indicates who initiated the order modification.	R
23	side	Choice	The side of the order.	R
24	price	Price	The limit price of the order, required when *orderType* is 'LMT'. Must be blank when *orderType* is 'MKT'.	C
25	quantity	Real Quantity	The order quantity.	R
26	minQty	Whole Quantity	The minimum quantity of an order to be executed. Required if included on the order when originated. Must be > 0.	C
27	leavesQty	Real Quantity	The number of contracts of the order left open after the modification has occurred.	R

Seq #	Field Name	Data Type	Description	Include Key
			Must be less than or equal to *quantity*.	
28	orderType	Choice	The type of order being submitted.	R
29	timeInForce	Name/Value Pairs	The time-in-force for the order.	R
30	tradingSession	Choice	The trading session(s) during which an order is eligible to trade.	R
31	handlingInstructions	Name/Value Pairs	The order handling instructions for the order.	C
32	openCloseIndicator	Choice	Indicates whether the action taken (buy or sell) will open a new position or will close an existing position in the order originator's account. Required when the exchange's rules require an order to be marked as open or close upon entry into the exchange.	C
33	reservedForFutureUse		Field is Reserved for Future Use and must remain blank.	
34	reservedForFutureUse		Field is Reserved for Future Use and must remain blank.	
35	aggregatedOrders	Aggregated Orders	When applicable, the order ID of each customer order being combined. Refer to Appendix C for combined order linkage requirements.	C
Aggregated Orders – Start For each order being combined *n*, the following values are required.				
35.n.1	orderID	Text (64)	*orderID* of the order being combined.	R
35.n.2	orderKeyDate	Timestamp	*orderKeyDate* of the order being combined.	R
35.n.3	quantity	Real Quantity	Required when a partial quantity of the order is being combined.	C
35.*n*.4	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID*.	C
Aggregated Orders – End				
36	representativeInd	Choice	Indicates if the order is a combined order and if linkage is required.	R
37	priorUnlinked	Choice	For Phase 2b, indicates whether the reported option event is unlinked to the prior event in the option order lifecycle, as the prior event is out of scope Phase 2b.	C
38	nextUnlinked	Choice	For Phase 2b, indicates whether the given option event is unlinked in the option order lifecycle, as the next event is out of scope for Phase 2b.	C

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate, CATReporterIMID*, *optionID, orderID*
- Order Key: *aggregatedOrders.orderKeyDate, CATReporterIMID, optionID, aggregatedOrders.orderID*
- Prior Order Key: *priorOrderKeyDate*, *CATReporterIMID, optionID*, and *priorOrderID*
- Route Linkage Key: Event Date, *optionID, receiverIMID, senderIMID, routedOrderID*
- Manual Order Key: *manualOrderKeyDate*, *CATReporterIMID, optionID, manualOrderID* (optional in Phase 2b)

5.8.1. Option Order Modified Supplement Event (Phase 2d)

<Deferred - Not Required Until Phase 2d>

5.9. Option Order Adjusted Event

The Option Order Adjusted event may be used instead of an Order Modified event to report changes to the price or quantity of an order. However, the Option Order Adjust events must not be used when changes to the price or quantity is initiated by a routing Industry Member.

The following rules apply:

1. If the price changes, then *price* must be reported to represent current state of the order relative to price. The quantity fields are not required.
2. If any of the quantity fields change, then all quantity fields (i.e. *quantity, minQty, leavesQty)* must be reported to represent the current state of the order relative to quantity. The price field is not required.

Any modification that cannot be fully represented in this Reportable Event must be reported via the Option Order Modified event. This includes modifications received from another Industry Member where a *routedOrderID* is required.

Table 57: Option Order Adjusted Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C

Seq #	Field Name	Data Type	Description	Include Key
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MOOJ	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	orderKeyDate	Timestamp	When a new Order Key is assigned, the date and time the *orderID* was assigned. When a new Order Key is not assigned, the *orderKeyDate* of order event which is being modified.	R
7	orderID	Text (64)	When a new Order Key is assigned, the internal order ID assigned to the order by the Industry Member. Must be unique within *orderKeyDate, CATReporterIMID*, and *optionID* combination. When a new Order Key is not assigned, the *orderID* of order event which is being modified.	R
8	optionID	Text (22)	The 21-character OSI Symbol of the option. For FLEX Percent options, a percentage symbol (%) is appended before the OSI symbol elements. See the Option Symbols section for more information.	R
9	priorOrderKeyDate	Timestamp	If a new Order ID has been assigned, this is the *orderKeyDate* of the event being adjusted.	C
10	priorOrderID	Text (64)	If a new Order ID has been assigned, this is the *orderID* of the event being modified. When populated, the *priorOrderID* must not be equal to the *orderID* within the record.	C
11	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
12	eventTimestamp	Timestamp	The date/time of receipt of the modification to the order. If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or a finer increment up to nanoseconds.	R
13	manualFlag	Boolean	Must be marked as *true* if the order is handled manually. Manual option orders are not	R

Seq #	Field Name	Data Type	Description	Include Key
			required until Phase 2d.	
14	electronicTimestamp	Timestamp	The time at which the event is systematized. Required when *manualFlag* is *true* and the event is systematized. Options manual order specifications are deferred to Phase 2d.	C
15	initiator	Choice	Indicates who initiated the order adjustment.	R
16	price	Price	The limit price of the order. Required if *price* changed.	C
17	quantity	Real Quantity	The order quantity. Required if *quantity, minQty* or *leavesQty* changed.	C
18	minQty	Whole Quantity	The minimum quantity of an order to be executed. Required when applicable and when *quantity*, *minQty,* or *leavesQty* changed. Must be > 0.	C
19	leavesQty	Real Quantity	The number of contracts of the order left open after the adjustment/has occurred. Required when *quantity, minQty* or *leavesQty* changed. Must be less than or equal to *quantity*.	C
20	priorUnlinked	Choice	For Phase 2b, indicates whether the reported option event is unlinked to the prior event in the option order lifecycle, as the prior event is out of scope Phase 2b.	C
21	nextUnlinked	Choice	For Phase 2b, indicates whether the given option event is unlinked in the option order lifecycle, as the next event is out of scope for Phase 2b.	C

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate, CATReporterIMID, optionID, orderID*
- Prior Order Key: *orderKeyDate, CATReporterIMID*, *optionID, priorOrderID*

5.10. Option Order Cancelled Event

The Option Order Cancelled event is reported when an order is fully or partially cancelled. Partial cancellations of an order may be reported to CAT using an Order Cancelled event or an Order Modified event. However, when routing between Industry Members, both parties must communicate and use the same method to report to CAT beginning in Phase 2d. If one party reports to CAT using the cancellation method and the other party reports to CAT using a modification method, this will result in unlinked records beginning in Phase 2d that must be resolved.

Implicit order cancellations, such as cancellations due to expiration of Time in Force, are not required to be reported to CAT.

Option Order Cancelled events are required to be reported by the entity that initiated the cancellation. When an Order is routed from Firm A to Firm B, the following rules apply:

1. If Firm A or its customer initiates the cancel, then Firm A and Firm B must report the Order Cancelled.
2. If Firm B initiates the cancel, then Firm B must report the Order Cancelled.

Table 58: Option Order Cancelled Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MOOC	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	orderKeyDate	Timestamp	The *orderKeyDate* of the Options order event which is being cancelled.	R
7	orderID	Text (64)	The *orderID* of the Options order event which is being cancelled.	R
8	optionID	Text (22)	The 21-character OSI Symbol of the option. For FLEX Percent options, a percentage symbol (%) is appended before the OSI symbol elements. See the Option Symbols section for more information.	R
9	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
10	eventTimestamp	Timestamp	The date/time of receipt of the cancellation. If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or finer increment up to nanoseconds.	R
11	manualFlag	Boolean	Must be marked as *true* if the order is handled manually. Manual option orders are not required until Phase 2d.	R

Seq #	Field Name	Data Type	Description	Include Key
12	electronicTimestamp	Timestamp	The time at which the event is systematized. Required when *manualFlag* is *true*. Options manual order specifications are deferred to Phase 2d.	C
13	cancelQty	Real Quantity	The quantity being cancelled.	R
14	leavesQty	Real Quantity	The quantity of contracts of the order left open after the cancel event. For full order cancellations, zero must be populated in this field.	R
15	initiator	Choice	Indicates who initiated the order cancellation.	R
16	priorUnlinked	Choice	For Phase 2b, indicates whether the reported option event is unlinked to the prior event in the option order lifecycle, as the prior event is out of scope Phase 2b.	C

Linkage Keys for this Reportable Event:

- Order Key: *orderKeyDate*, *CATReporterIMID*, *optionID, orderID*

5.11. Option Order Fulfillment

An Option Order Fulfillment event must be reported when an Industry Member (subject to applicable SRO rules) combines individual simple option orders from customers before routing to an exchange as a single simple order for execution and reflects the fill given to each individual order.

For the scenario above, Phase 2b does not require explicit order linkage between the combined order and the original customer orders. Prior to Phase 2d, the Order Fulfillment events only contain the *clientDetails*. The *fulfillmentLinkType* must be marked as "O".

5.11.1. Option Order Fulfillment Event

Table 59: Option Order Fulfillment Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE	R

Seq #	Field Name	Data Type	Description	Include Key
			Identifier> Must be unique for the Event Date and CAT Reporter IMID.	
4	type	Message Type	MOOF	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	fillKeyDate	Timestamp	The date and time the *fulfillmentID* was assigned.	R
7	fulfillmentID	Text (64)	A unique identifier for the fulfillment. For each Industry Member, the combination of *fillKeyDate*, *optionID*, and *fulfillmentID* must be unique.	R
8	optionID	Text (22)	The 21-character OSI Symbol of the option. For FLEX Percent options, a percentage symbol (%) is appended before the OSI symbol elements. See the Option Symbols section for more information.	R
9	eventTimestamp	Timestamp	The date/time when the fulfillment was processed by the Industry Member. If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or finer increment up to nanoseconds.	R
10	manualFlag	Boolean	Must be marked as *true* if this is a manual process. Manual option orders are not required until Phase 2d.	R
11	electronicTimestamp	Timestamp	The time at which the event is systematized. Required when *manualFlag* is *true* and the event is systematized. Options manual order specifications are deferred to Phase 2d.	C
12	quantity	Real Quantity	Quantity being reported as fulfilled with this event. It may or may not be the full quantity of the order.	R
13	price	Price	Price at which the order contracts are being fulfilled.	R
14	fulfillmentLinkType	Choice	Refer to Appendix C for combined order linkage requirements.	R
15	clientDetails	Fulfillment Side Details	Refer to Table 60: Options Fulfillment Side Details.	R
16	firmDetails	Fulfillment Side Details	Refer to Table 60: Options Fulfillment Side Details. Not applicable in Phase 2b.	O
17	priorUnlinked	Choice	For Phase 2b, indicates whether the reported option event is unlinked to the prior event in the option order lifecycle, as the prior event is out of scope Phase 2b.	C
18	cancelFlag	Boolean	Must be marked as *true* if the fulfillment was cancelled.	R

Seq #	Field Name	Data Type	Description	Include Key
19	cancelTimestamp	Timestamp	When *cancelFlag* is *true*, the time at which the fulfillment was cancelled. If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or a finer increment up to nanoseconds.	C

Table 60: Options Fulfillment Side Details

The Fulfillment Side Details associated with fields: *clientDetails* and *firmDetails:* Limited to 1 set of details for each side.				
Seq #	**Field Name**	**Data Type**	**Description**	**Include Key**
<seq>.1.1	orderKeyDate	Timestamp	The *orderKeyDate* of the order on this side.	R
<seq>.1.2	orderID	Text (64)	The order ID assigned by the Industry Member to the order on this side.	R
<seq>.1.3	side	Choice	The side of the fulfillment.	R
<seq>.1.4	quantity	Real Quantity	The execution quantity associated with this *orderID.*	O
<seq>.1.5	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C

Linkage Keys for this Reportable Event:

- Order Key: *firmDetails.orderKeyDate, CATReporterIMID, optionID, firmDetails.orderID* (Not Required until Phase 2d)
- Order Key: *clientDetails.orderKeyDate, CATReporterIMID, optionID, clientDetails.orderID*
- Fulfillment Key: *fillKeyDate, CATReporterIMID*, *optionID, fulfillmentID*

5.11.2. Option Order Fulfillment Amendment Event

This CAT event is used to report the amendment of a previously reported fulfillment that occurs on the same day or on a subsequent day. An Option Order Fulfillment Amendment event is required to be reported to CAT if the fill to the client was changed after the final fulfillment had been provided to the client. This Reportable Event must capture the entire state of the fulfillment after it has been amended, even though some of the data elements may remain unchanged.

Option Order Fulfillment Amendments are not required in scenarios where:

- Executions against an order are tracked throughout the day but a single average price fill is provided to the client after the order is completed or at the end of the day. Some systems may provide intraday transparency to the progress of executing an order as informal information that is not considered by the firm to be 'final' fulfillments, and these should not be reported to CAT as fulfillments and fulfillment amendments. Refer to CAT FAQ B64 for additional information.
- An Industry Member makes a correction via a debit/credit to the customer's account instead of modifying the executed shares given back to the customer.
- Changes do not impact CAT reportable attributes of the fulfillment.
- When an Industry Member fulfils an order and receives a trade break from the exchange, it is possible that the Industry Member may choose to take the delta (e.g. using an error account) without amending the manner by which the order was fulfilled.

Table 61: Options Order Fulfillment Amendment Event Field Specifications

Seq #	Field Name	Data Type	Description	Include Key
1	actionType	Choice	Indicates whether the event is a new event, a firm initiated correction or a repair of a CAT error.	R
2	errorROEID	Unsigned	Required when *actionType* is 'RPR'. Must be blank when *actionType* is 'NEW'.	C
3	firmROEID	Text (64)	An identifier assigned to the record by the reporting firm. Formatted as <eventDate>_<firm ROE Identifier> Must be unique for the Event Date and CAT Reporter IMID.	R
4	type	Message Type	MOFA	R
5	CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT. If populated, must equal the *CATReporterIMID* in the filename.	O
6	fillKeyDate	Timestamp	When a new Fulfillment Key is assigned, the date and time the *fulfillmentID* was assigned. When a new Fulfillment Key is not assigned, the *fillKeyDate* of the fulfillment event being modified.	R
7	fulfillmentID	Text (64)	When a new Fulfillment Key is assigned, the internal fulfillment ID assigned to the order by the Industry Member. Must be unique within *fillKeyDate, CATReporterIMID*, and *optionID* combination. When a new Fulfillment Key is not assigned, the *fulfillmentID* of the fulfillment event being modified.	R

Seq #	Field Name	Data Type	Description	Include Key
8	optionID	Text (22)	The 21-character OSI Symbol of the option. For FLEX Percent options, a percentage symbol (%) is appended before the OSI symbol elements. See the Option Symbols section for more information.	R
9	priorFillKeyDate	Timestamp	In cases when a new *fulfillmentID* is assigned, the *priorFillKeyDate* is the *fillKeyDate* of the fulfillment that is being modified. Required if *priorFulfillmentID* is populated.	C
10	priorFulfillmentID	Text (64)	If a new fulfillment ID is assigned, this is the *fulfillmentID* of the event being modified.	C
11	originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*	C
12	eventTimestamp	Timestamp	The date/time that the fulfillment was amended. If *manualFlag* is *true*, timestamp must be reported to seconds. If *manualFlag* is *false*, timestamp must be reported to milliseconds or finer increment up to nanoseconds.	R
13	manualFlag	Boolean	Must be marked as *true* if this is a manual process. Manual option orders are not required until Phase 2d.	R
14	electronicTimestamp	Timestamp	The time at which the event is systematized. Required when *manualFlag* is *true* and the event is systematized. Options manual order specifications are deferred to Phase 2d.	C
15	fulfillmentLinkType	Choice	Refer to Appendix C for combined order linkage requirements.	R
16	quantity	Real Quantity	Amended quantity being reported as fulfilled with this event. It may or may not be the full quantity of the order.	R
17	price	Price	Amended price at which the order contracts are being fulfilled.	R
18	clientDetails	Fulfillment Side Details	Refer to Table 60: Options Fulfillment Side Details.	R
19	firmDetails	Fulfillment Side Details	Refer to Table 60: Options Fulfillment Side Details. Not applicable in Phase 2b.	O
20	priorUnlinked	Choice	For Phase 2b, indicates whether the reported option event is unlinked to the prior event in the option order lifecycle, as the prior event is out of scope Phase 2b.	C

Linkage Keys for this Reportable Event:

- Order Key: *firmDetails.orderKeyDate, CATReporterIMID, optionID, firmDetails.orderID* (Not required until Phase 2d)
- Order Key: *clientDetails.orderKeyDate, CATReporterIMID*, *optionID, clientDetails.orderID*
- Fulfillment Key: *fillKeyDate, CATReporterIMID, optionID, fulfillmentID*
- Prior Fulfillment Key: *priorFillKeyDate, CATReporterIMID, optionID, priorFulfillmentID*

5.12. Linked Multi-Leg Option Order Events (Phase 2d)

<Deferred - Not Required Until Phase 2d>

5.13. Option Post-Trade Allocations (Phase 2d)

<Deferred - Not Required Until Phase 2d>

6. Submission Process

This section contains information pertaining to CAT data and file formats, CAT submissions (including a general data flow overview), network and transport options, CAT access and reporting hours.

6.1. File Submissions and Data Formats

CAT submissions must include data files with at least one metadata file that enumerates the data files. Data and metadata files have a prescribed naming convention and are supported in JSON and CSV formats. The format of the data file and metadata file must be the same.

6.1.1. File Submission Names

1. Data Files must be named using the following format:

```
<CAT Submitter ID>_<CAT Reporter IMID>_<File Generation
Date>_[<Group>_]<File Kind>_<File Number>[.File Instruction].<Format
Extension>.<Compression Extension>
```

   For example: SUBID_MYID_20170101_FileGroup1_OrderEvents_000123.csv.bz2

2. Metadata Files must be named using the following format:

```
<CAT Submitter ID>_<CAT Reporter IMID>_<File Generation
Date>_[<Group>_]<File Kind>_<File Number>.meta[.File
Instruction].<Format Extension>
```

   For example: SUBID_MYID_20170101_FileGroup1_OrderEvents_000122.meta.csv

3. The values assigned within the format of a file name include:

Table 62: Elements of a File Submission Name

Field Name	Data Type	Description	Include Key
CAT Submitter ID	Unsigned	CAT Reporting Agent that submitted the file to CAT.	R
CAT Reporter IMID	Alphanumeric (7)	The SRO assigned identifier of the firm to which the data within the file belongs. Case sensitive.	R
File Generation Date	Date	The date the file was generated or reported. Used to guarantee uniqueness of a file across dates. Date must be less than or equal to System Date. Future dates are not acceptable.	R
Group	Alphanumeric (20)	Reporter defined string to guarantee uniqueness of a file across dates. Filenames associated with web submission directly	O

Field Name	Data Type	Description	Include Key
		entered into the CAT Reporter Portal will be assigned the value 'catweb'.	
File Kind	Alphanumeric (20)	Set to 'OrderEvents'. Case sensitive.	R
File Number	Unsigned	Sequence number of the file, 6-digits long, left-padded with zeros. The File Number of the data file and its associated metadata file are not required to be the same number. The File Number is not required to be populated in submission order.	R
Type	Alphanumeric (4)	Applicable to Metadata Files. Set to '.meta'. Case sensitive.	R
File Instruction	Alphanumeric (4)	Applicable to Delete Files. Set equal to '.DEL' for a Delete File Instruction. Case sensitive.	C
Format Extension	Alphanumeric (4)	Represents the format of the data submission. JSON formatted submissions must be 'json', and CSV submissions must be populated with 'csv'. Case sensitive.	R
Compression Extension	Alphanumeric (3)	Applicable to Data Files. Set to 'bz2'. Case sensitive.	R

4. Data file names must be globally unique among all other data files using the base name (the portion of the file name without the format and compression extensions) of the data file. The following data files are duplicates:

Table 63: Filename / Base Name Examples

Data Filename	Base Name
SUBID_MYID_20170101_Group1_OrderEvents_000123.csv.bz2	SUBID_MYID_20170101_Group1_OrderEvents_000123
SUBID_MYID_20170101_Group1_OrderEvents_000123.json.bz2	SUBID_MYID_20170101_Group1_OrderEvents_000123

5. Metadata file names must be globally unique among all other metadata files using the base name (the portion of the file name without the META and format extension) of the metadata file. The following metadata files are duplicates:

Table 64: Filename / Base Name Examples

Meta Filename	Base Name
SUBID_MYID_20170101_OrderEvents_000123.meta.csv	SUBID_MYID_20170101_OrderEvents_000123
SUBID_MYID_20170101_OrderEvents_000123.meta.json	SUBID_MYID_20170101_OrderEvents_000123

6.1.2. Submission Formats

CAT supports the submission of data in JSON and CSV formats. The following rules apply to both formats:

1. CAT submissions must include data files with at least one metadata file that enumerates the data files.
2. The format (JSON or CSV) of the data file and metadata file must be the same.
3. Each line in a file must contain exactly one complete record.
4. The total maximum length of a line is 8190 bytes.
5. Non-printable characters and whitespace are bytes that will be included when validating a record has NOT exceeded the maximum length.

6.1.2.1. JSON Format

1. The CAT Processor will support standard JSON syntax for each record or as specified in this document.
2. Backslash '\' is a reserved printable character in JSON and must be escaped in order to be used in strings by inserting a backslash prior to it within the string. For example: *routedOrderID* = 1234\ABCD must be reported to CAT as "routedOrderID":"1234\\ABCD". If a backslash is not escaped, it will be omitted from the string. For example, if the following is reported to CAT, "routedOrderID":"1234\ABCD", it will be stored as *routedOrderID* = 1234ABCD.
3. Data files serve as top-level containers for each object. Each object is a normal JSON object, separated with a new-line (ASCII decimal 10, hex 0A).
4. Data within the object must not include new-lines.
5. Conditional and optional fields without a value must be omitted.
6. Each line within a Data file must contain exactly one complete record. The following example is a CAT event in the required submission format. The record is delivered in a single line with a new-line character at the end:


```
{"actionType":"RPR","errorROEID":12345678,"firmROEID":"20170801_firmROEO12345","type":"MENO","orderKeyDate":"20170801T143031.000000","orderID":"O12345","symbol":"XYZ","eventTimestamp":"20170801T143031.123456","manualFlag":false,"deptType":"O","side":"B","price":10.01,"quantity":500,"orderType":"LMT","timeInForce":{"DAY":20170801},"tradingSession":"REG","custDspIntrFlag":false,"firmDesignatedID":"PROP456","accountHolderType":"O","negotiatedTradeFlag":false}
```


JSON Data file examples presented in this document with fields represented in multiple lines are provided for readability.

7. Metadata file contains one complete JSON object with fields as per the Metadata File Specifications in Table 50. Refer to Section 6.1.3.1.

8. JSON objects within a metadata file may include a new-line (ASCII decimal 10, hex 0A) termination and will be ignored during processing.

6.1.2.2. CSV Format

1. The sequence of fields is fixed; the position of each field is relative to the beginning of its associated record. The format of every file and record must be in the sequence described within the Industry Member Technical Specifications.
2. Each specified field, except for the last field in a record, must be terminated by a delimiter including instances when the field is null, blank and when the field is the maximum length and when the field is greyed out or Reserved for Future Use.
3. None of the fields in the record can contain the character used for the delimiter.
4. The last field in a record is not required to be terminated by a delimiter, but the field will still be considered to be acceptable if the delimiter is included.
5. The field delimiter is a comma (ASCII decimal 44, hex 2C).
6. Other delimiters defined for usage include the '|' (pipe), '@' (at sign) and ' " ' (double quotes). Use of '|' and '@' have been specified for reporting complex data types where a field contains multiple values. Refer to Section 2.5 Data Types.
7. Each record must end with an end of record marker (ASCII LF or CR/LF).
8. Optional (O) and Conditional fields (C) are omitted by only including the delimiter.
9. Required (R) fields must contain an appropriate value and be terminated by the delimiter.
10. Values do not need to fill the entire data type length of the field; Values may not exceed the data type length.
11. Leading zeros will be removed during processing from fields that are Data Type Numeric. Leading zeros will not be removed from other Data Types, such as Text or Alphanumeric.
12. Leading and trailing blanks will be removed during processing from fields that are Data Type Text and Alphanumeric. Leading and trailing blanks will not be removed from other Data Types, such as Numeric. Blanks populated within the field will not be removed from processing.

6.1.3. Metadata File Submission

CAT submissions require a metadata file associated with every data file. The following rules apply:

1. A Metadata file may be paired with one or more data files for the same File Generation Date, CAT Reporter IMID and Submitter.
2. The Metadata file must be in the same format as all associated data files.

3. Submitters may package multiple metadata "blocks" for multiple data files into one metadata file. Files must be for the same CAT Reporter IMID, on the same file version and Submitter IMID. Each metadata "block" contains a checksum of the respective file that is used during verification.
4. A maximum of 100 associated data files for a single metadata file is required. Metadata files exceeding the 100 associated data file limit will be rejected.
5. If a metadata file includes a metadata block that references a file that is not found, an error associated with the block will be returned and the remaining blocks will be processed.
6. In order to guarantee that data files are accepted, data files must be submitted prior to the Metadata file submission.
7. A Data file without an associated Metadata file within 30 minutes of the data file submission will result in a warning.
8. A Data file without an associated Metadata file within 2 hours of the data file submission will result in an error.
9. The processing date of all submissions will be assigned based on the received timestamp of the associated metadata file. If a data file is received prior to T+1 8:00 AM EST with the associated metadata file submitted after T+1 8:00 AM EST, the submissions will be considered late.
10. Each block within the metadata must contain the hash of the compressed data file. The compressed hash will be used to verify the integrity of the data file submitted by computing the hash of the data file and comparing it to the value sent in the metadata file. If the compressed hash is not sent, the data file submission will be rejected.
11. The CAT Submitter ID, CAT Reporter IMID, File Generation Date must be the same for the metadata file and all associated data file(s).
12. The submission of a metadata file with *doneForDay* = true indicates to the CAT Processor that the files submitted by the Submitter for the Industry Member have been completed and are ready for linkage discovery. Note - should an Industry Member need to make additional data submissions after a metadata file with *doneForDay* = true has been processed, the Industry Member may continue to submit files and provide a secondary metadata file *doneForDay* = true.
13. If a metadata file with *doneForDay* = true has not been submitted by 8:00 AM EST, all files submitted up to that point will be considered ready and processed for linkage discovery at that time.

Table 65: Metadata File Specifications

Seq	Field Name	Data Type	Description	Include Key
1	*type*	Message Type	Set to “META”	R
2	*doneForDay*	Boolean	Used to indicate the last metadata file for the Submitter/Industry Member Reporter on the date. Any file submitted with *doneForDay*=`true` must be the last set of files submitted for the day. It defaults to false.	R

Seq	Field Name		Data Type	Description	Include Key
3	*fileGenerationDate*		Date	The date the file was generated or reported. This date is part of the key used to define a unique file.	R
4	*reporter*		Alphanumeric (7)	The SRO assigned identifier that an Industry Member uses to report CAT events. All events within the file must be for the same CAT Reporter IMID.	R
5	*submitter*		Unsigned	The CAT-assigned ID for the entity submitting data on behalf of the reporter. The CAT Reporting Agent must be authorized to submit data on behalf of the CAT Reporter IMID.	R
6	*fileVersion*		Text (10)	A version number for the schema file used to encode and format this file.	R
7	*files*		Multi-Dimensional Array	File information and related meta data for each file associated with the Metadata file. Refer to File Details – Metadata Block for required information associated with each file.	R
File Details – Metadata Block Start For each file *n*, the following values are required:					
7.*n*.1	➔	*fileName*	As described above	The file name of the corresponding data file of the metadata block, including all extensions.	R
7.*n*.2	➔	*recordCount*	Unsigned	The number of new-line delimited records in the data file	R
7.*n*.3	➔	*reservedForFutureUse*			
7.*n*.4	➔	*compressedHash*	Alphanumeric (64)	SHA256 of the compressed data file. Must be submitted as 64-character hexadecimal string encodings of the hash value	R
File Details – Metadata Block End					
8	*thirdParty*		Unsigned	The CAT-assigned ID for the Third Party Reporting Agent that is authorized to view feedback and error data for data submitted on behalf of the CAT Reporter. Although the Third Party Reporting Agent is specified in the Metadata File by the Submitter, the Third Party Reporting Agent must be authorized to view the data by the CAT Reporter. Additionally, in order for the *thirdParty* to be able to make corrections for the CAT Reporter, the Reporting Agent must be authorized to submit data for the CAT Reporter.	O

6.1.3.1. Metadata File JSON Example

```
{
  "type": "META",
```

```
  "doneForDay": false,
  "fileGenerationDate": 20180919,
  "reporter": "MPID",
  "submitter": "ORGID",
  "fileVersion": "2.2.1",
  "files": [
    {
      "fileName": "SUBID_MPID_20180919_OrderEvents_000001.json.bz2",
      "recordCount": 5217,

      "compressedHash": "99A7712E2CC1CB3A5789B91E3C1D1E76D7F83D82C8D35FF1F56B
156A49C228E2"
    },
    {
      "fileName": "SUBID_MPID_20180919_OrderEvents_000002.json.bz2",
      "recordCount": 9999,

      "compressedHash": "00660828E45FFCCA37EF9CCF2A4967308DDA033CD498B0A1810F
3BFC4BF6BFCC"
    }
  ]
}
```

6.1.3.2. Metadata File CSV Example

```
 LINE 1  META,false,20180919,MPID,ORGID,3.1.0,SUBID_MPID_20180919_OrderEvent
         s_000001.csv.bz2@5217@@99A7712E2CC1CB3A5789B91E3C1D1E76D7F83D82C8D3
         5FF1F56B156A49C228E2|SUBID_MPID_20180919_OrderEvents_000002.csv.bz2
         @9999@@00660828E45FFCCA37EF9CCF2A4967308DDA033CD498B0A1810F3BFC4BF6
         BFCC,
```

6.1.4. Data File Submission

The following rules apply to Data Files:

1. All data files sent from the CAT Reporter (or the third-party CAT Reporting Agent for the CAT Reporter) must be compressed using BZip2. The associated compression extension is “bz2”.
2. Data files must be individually compressed and submitted. Compressed files may not be bundled into a single container file.
3. Data files must be associated with a Metadata file; otherwise, the file will not be processed.
4. Data files for which an associated Metadata file is not received within 30 minutes of the receipt of the file will result in a warning.
5. A Data file without an associated Metadata file within 2 hours of the data file submission will result in an error.
6. Data files are recommended to be submitted prior to the Metadata file submission.
7. The data contained within the data file must represent data for the CAT Reporter IMID identified within the associated Metadata file.

8. All events within the file must be for the same CAT Reporter IMID. However, Industry Member Identifiers populated in the *senderIMID*, *receiverIMID* and *destination* fields may be different.
9. Files submitted through SFTP are limited to a maximum uncompressed size of 100GB.
10. Larger file submissions are recommended to reduce number of files for Reporters to transfer and manage and to allow feedback to be returned consistently and faster.
11. Files submitted through the CAT Reporter Portal are limited to a maximum uncompressed size of 1GB, with a record limit of 100,000 records per file. Files with more than 100,000 records will be rejected.
12. Schema files will be maintained by the Plan Processor and will be versioned as the Technical Specifications change.
13. Data files may contain events for any Event Date that is less than or equal to the date on which the file is processed.
14. Events within a data file may be in any sequence.
15. Data files may contain original submissions, firm initiated corrections, CAT error corrections and record delete instructions.
16. Data files are recommended to contain data for the same CAT Trading Day to ensure the usage of the File Delete Instruction. Refer to Section 7.6.4. This is not a requirement.
17. Empty data files will be accepted.

6.1.4.1. Data File JSON Example

```
{
  "actionType": "NEW",
  "firmROEID": "20170901_ROE1234567",
  "type": "MEOJ",
  "orderKeyDate": "20170901T120102.123456",
  "eventTimestamp": "20170901T120102.123456",
  "manualFlag": false,
  "symbol": "XYZ",
  "orderID": "T12346",
  "priorOrderID": "T12345",
  "priorOrderKeyDate":"20170901T120102.000000",
  "initiator": "C",
  "quantity": 1100,
  "minQty": 100,
  "leavesQty": 100
}
```

6.1.4.2. Data File CSV Example

```
LINE 1  NEW,,20170901_ROE1234567,MEOJ,,20170901T120201.123456,T12346,XYZ,T1
        2345,20170901T120102.000000,,20170901T120102.123456,false,,C,,1100,
        100,100,,,,,,,,,,
```

6.1.5. Schema

An Industry Member Schema file that details the structure and expected contents of every message type is available on the CAT public website. The schema file will be maintained by the Plan Processor and will be versioned as the message specifications change.

6.1.5.1. Schema Version

Schema changes will be updated when changes to the CAT Reporting Technical Specifications for Industry Members occur that impact the schema. The following rules apply:

1. The Schema Version is assigned to a File Kind. The events within this Technical Specifications are assigned to File Kind 'OrderEvents'.
2. The Schema Version is formatted as <Major>.<Minor>.<Patch>. All digits must be represented.
    - **Major –** updated when a change occurs that impacts all or a significant portion of Industry Member CAT Reporters. In such cases, the schema is not backward compatible and will be specified accordingly.
    - **Minor –** updated when a change occurs that does not require coding changes for all Industry Member CAT Reporters. In such cases, the schema is backward compatible with support for previous version(s) as specified.
    - **Patch –** updated when a change occurs that does not require coding changes for any Industry Member CAT Reporters.
    - **Revision –** not part of the Schema Version. Used to represent updates to the Industry Member Technical Specifications which do not impact the Schema definition. Revision added to the end of the Schema Version as <Schema Version> r<#>.
3. Metadata File Submissions must set the *fileVersion* equal to the applicable Schema Version for the File Kind.
4. Records contained in a Data File must be formatted as per the Schema Version populated in the paired Metadata File *fileVersion*.
5. Meta Feedback provided by CAT will set the *feedbackVersion* equal to the applicable Schema Version for the File Kind.

6.1.5.2. Schema Definition

The schema file is a JSON format file that represents the following:

1. **Data Types** – CAT defined data types containing the following elements:
    - **dataType**: Data Type (e.g. Price) as defined in Table 3: Data Types

- **JSONDataType**: JSON standard data type to be used to submit data of this type. The JSON standard data types used in this schema are BOOLEAN, STRING, NUMBER, ARRAY and OBJECT. Timestamp data type has two possible representations, so the JSONDataType is an array of choices.
- **maxLength**: Maximum length of the string submission. Applicable to text and alphanumeric types only.
- **scale**: Number of digits after the decimal point. Applicable to numeric types only.
- **precision**: Number of digits in a number. Applicable to numeric types only.

2. **Event Definitions** – Field specifications for events defined in Table 13: Equity Events and Table 47: Summary of Option Events. Each field specification object contains the following elements:

- **name**: Field Name set equal to Message Type for each event being specified.
- **dataType**: Data Type. Fields noted Reserved for Future Use are specified with datatype Text (0).
- **JSONDataType**: JSON standard data type to be used to submit data of this type.
- **required**: Indicates whether the field is "Required," "Conditional," or "Optional." Fields applicable to ATSs are marked "Conditional".
- **position** – The applicable CSV position of the field.

3. **Choices** – For choice data types, the list of possible values.
4. **Name/Value Pairs** – Field specifications for Name/Value Pair fields.

- **name**: Field Name. Case sensitive.
- **dataType**: Data Type or an array of Data Types.
- **JSONDataType**: The JSON standard data type or an array or JSON standard data types.
- **required**: Indicates whether the field is "Required," "Conditional," or "Optional."

6.1.5.3. Example

The following is an abbreviated example of a schema containing part of the equity Child Order event.

```
"eventDefinitions": [{
                  "eventName": "MECO",
                  "fields": [{
                              "name": "actionType",
                              "dataType": "Choice",
                              "JSONDataType": "STRING",
                              "required": "Required",
                              "position": "1"
                        }, {
                              "name": "errorROEID",
                              "dataType": "Unsigned",
                              "JSONDataType": "NUMBER",
```

```
                        "required": "Conditional",
                        "position": "2"
                }, {
                        "name": "firmROEID",
                        "dataType": "Text (64)",
                        "JSONDataType": "STRING",
                        "required": "Required",
                        "position": "3"
                },
.........
{
                        "name": "nbboSource",
                        "dataType": "Choice",
                        "JSONDataType": "STRING",
                        "required": "Conditional",
                        "position": "30"
                }, {
                        "name": "nbboTimestamp",
                        "dataType": "Timestamp",
                        "JSONDataType": ["STRING", "NUMBER"],
                        "required": "Conditional",
                        "position": "31"
                }
            ]
        },
```


6.2. Connectivity

Connectivity to CAT will be through at least one of the following methods:

- Private Line provided by a Managed Network Service Provider (MNSP)
- AWS PrivateLink[5]
- CAT Secure Reporting Gateway (SRG) Reporter Portal

Both the Private Line and AWS PrivateLink connectivity methods will support the CAT File Transfer service, which provides access for automated, machine-to-machine file submissions, acknowledgements, rejections, and corrections using the Secure File Transfer Protocol (SFTP) service as well as to the CAT Reporter Portal for interactive reporting through web-based forms or manual file uploads.

The CAT Secure Reporting Gateway (SRG) connectivity method will only support the CAT Report Portal. The SRG requires multi-factor authentication (MFA) to establish a secure, encrypted session before

[5] The AWS PrivateLink service is currently under development. Availability will be announced along with updated instructions on how to leverage PrivateLink for cloud-to-cloud connectivity. Industry Members and CAT Reporting Agents -interested in AWS PrivateLink should contact the FINRA Help Desk at 888-696-3348 or at help@finracat.com.

accessing the CAT Reporter Portal. The SRG requires the use of modern browsers supporting HTML5 and TLS (Transport Layer Security). No client software installation is required.

The combinations of Connectivity and Interface Methods are summarized below.

Table 66: Connectivity Methods and Supported CAT Interfaces Methods

Connectivity Methods	Interface Methods	
	CAT File Transfer	**CAT Reporter Portal**
Private Line provided by MNSP	Y	Y
AWS PrivateLink	Y	Y
CAT Secure Reporting Gateway (SRG)	N	Y

For a detailed description of the CAT Connectivity Methods, including instructions for establishing access and connectivity to the CAT system, refer to the FINRA CAT Connectivity Supplement for Industry Members.

6.3. CAT Interface Methods

The interface methods available to Industry Members and CAT Reporting Agents to submit data and retrieve reporting feedback include CAT File Transfer and the CAT Reporter Portal. For a detailed description of the CAT Interface Methods, including instructions for establishing access and connectivity to the CAT system, refer to the FINRA CAT Connectivity Supplement for Industry Members.

The following identifies the types of CAT information with the respective interface methods available for each:

Table 67: CAT Data and Feedback Interface Methods

CAT Data Submission and Feedback	Category	SFTP	CAT Reporter Portal
Submission of CAT Events	Submission	✓	✓
Resubmission of Rejected Files/Records, Corrections and Deletions	Submission	✓	✓
Interactive CAT Reportable Event Entry	Submission		✓
File Status Retrieval	Feedback	✓	✓
Reporting Statistics	Feedback		✓
Error Feedback	Feedback	✓	✓
Corrections Feedback	Feedback		✓

CAT Data Submission and Feedback	Category	SFTP	CAT Reporter Portal
System Status and Announcements	Feedback		✓
Account Maintenance	Administration		✓
Establishment of Reporting Relationships and ATS Order Types	Administration		✓

6.3.1. CAT File Transfer

The CAT File Transfer method is an automated, machine-to-machine interface utilizing the Secure File Transfer Protocol ("SFTP") for file submissions, acknowledgements, rejections and corrections. SFTP enables Industry Members and CAT Reporting Agents to create machine-to-machine connections to securely transmit data and retrieve data from FINRA CAT.

The following is the SFTP directory structure that will be made available in the submitter's home directory. Files associated with data submissions and associated feedback will be uploaded in SFTP directories as per the following table.

Table 68: SFTP Directories

SFTP Directory	Usage
`/submitterID/cat/upload`	SFTP submissions uploaded by Submitters including Metadata and Data files. CAT will move files from this directory for further processing.
`/submitterID/cat/feedback`	Metadata feedback files associated with each processing state.
`/submitterID/cat/errors`	Feedback data files containing errors generated during Ingestion and Linkage Discovery.

The following rules apply:

1. Processing is initiated when a file appears in the /submitterID/cat/upload directory.
2. CAT will remove files from the upload directory as soon as each file upload is complete.
3. The Submitter must not delete files from the `/submitterID/cat/upload` directory.

6.3.2. CAT Reporter Portal

The CAT Reporter Portal is a web interface utilizing secure encryption protocols (HTTPS/TLS) and multifactor authentication (MFA). The CAT Reporter Portal will facilitate data submissions using the following methods:

- Manual data file uploads for files up to 1GB in size and limited to 100,000 records meeting all requirements of data files as specified in 6.1.3 and 6.1.4.
- Data entry for original submissions, repairs for CAT identified errors, and firm initiated corrections and deletion instructions. These entries will be converted to Data files with an associated Metadata file generated by the portal; Data files will be available for view and download for a time period specified.

6.4. CAT Reporting Hours

6.4.1. Submission of CAT Events

Pursuant to SEC Rule 613, the CAT NMS Plan requires Industry Members to record order, quote, fulfillment and trade events. Real-time reporting to CAT is not required. Data may be bulk uploaded at the end of the Trading Day, or may be submitted in batches with associated uploads throughout the day. All Reportable Events for a Trading Day are required to be reported to CAT by 8:00 AM Eastern Time on the next Trading Day.

Trading Day for Industry Members is defined as:

- **Start:** immediately after 4:15:00 PM and no fractions of a second Eastern Time on one trade date
- **End:** exactly 4:15:00 PM and no fraction of a second Eastern Time on the next trade date (T=Trading Day, a defined term)[6,7]

The Trading Day is used to determine the reporting deadline of CAT events, including when all error repairs and firm initiated corrections are due. Weekends or any day that all equities or options national securities exchanges are closed are not considered a Trading Day.

CAT accepts submissions (via SFTP and the CAT Reporter Portal) 24 hours per day, 6 days per week beginning at 12:01AM ET on Monday and ending at 11:59PM ET on Saturday. Events that occurred during a particular CAT Trading Day may be reported anytime between the time the event occurred and the reporting deadline, which is 8:00 AM Eastern Time on the next Trading Day. Reports received after the deadline will be considered late.

The table below provides examples of the reporting deadline.

---

[6] Note that the Trading Day definition for Participants is different. It starts on 1 millisecond from 12:00AM of T, and ends at 12:00AM of T+1.

[7] A Trading Day which is also an early close will end 15 minutes after market close.

Table 69: Reporting Deadline Examples

Event Occurs	Holiday	Report Due to CAT (T+1)
Monday 14:20 PM ET	N/A	Tuesday 8:00 AM ET
Monday 23:40 PM ET	N/A	Wednesday 8:00 AM ET
Friday 11:00 AM ET	N/A	Monday 8:00 AM ET
Friday 16:02 PM ET	N/A	Monday 8:00 AM ET
Friday 16:02 PM ET	The Following Monday	Tuesday 8:00 AM ET
Friday 14:00 PM ET	Market Close on the Event Date 13:00 PM ET	Tuesday 8:00 AM ET
Wednesday 15:00 PM ET	Thursday, Friday is half day	Friday 8:00 AM ET
Saturday 11:15 AM ET	N/A	Tuesday 8:00 AM ET
Saturday 11:15 AM ET	The Following Monday	Wednesday 8:00 AM ET
Monday 10:00 AM ET (holiday)	On the Event Date	Wednesday 8:00 AM ET

6.4.2. Deadline of Repair for Errors Identified by CAT

Errors identified by CAT will be provided to Industry Members. Once available, repairs can be made immediately. All errors that require repair must be repaired prior to **8AM Eastern Time on T+3** (CAT Trading Day of event + three Trading Days). Repairs received after the repair deadline will be considered late.

Table 70: Repair Window Examples

Event Occurs	Holiday	Initial Report Due (T+1)	Repair Due (T+3)
Monday 14:20 PM ET	N/A	Tuesday 8:00 AM ET	Thursday 8:00 AM ET
Monday 23:40 PM ET	N/A	Wednesday 8:00 AM ET	Friday 8:00 AM ET
Friday 11:00 AM ET	N/A	Monday 8:00 AM ET	Wednesday 8:00 AM ET
Friday 16:02 PM ET	N/A	Monday 8:00 AM ET	Wednesday 8:00 AM ET
Friday 16:02 PM ET	Next Monday	Tuesday 8:00 AM ET	Thursday 8:00 AM ET
Wednesday 15:00 PM ET	Thursday, Friday is half day	Friday 8:00 AM ET	Tuesday 8:00 AM ET
Saturday 11:15 AM ET	N/A	Tuesday 8:00 AM ET	Thursday 8:00 AM ET
Saturday 11:15 AM ET	The Following Monday	Wednesday 8:00 AM ET	Friday 8:00 AM ET
Monday 10:00 AM ET (holiday)	On the Event Date	Wednesday 8:00 AM ET	Friday 8:00 AM ET

6.4.3. Deadline for Firm Initiated Corrections and Deletions

CAT specifications allow for Industry Members to correct and delete events that did not produce an error during processing. All such corrections must be submitted within the same correction deadline as described in 6.4.2.

6.5. Security

6.5.1. Encryption (In-transit)

TLS-based encryption, version 1.2 minimum, is required for connection to the Reporter Portal (whether accessed via private line or the SRG) and to the Security Reporter Gateway itself.

For SFTP, in addition to the fact that the SFTP service is only accessible via private line, traffic will be encrypted by virtue of the intrinsic encryption capabilities of SFTP. AES256 will be supported for SFTP; support for other encryption protocols is under evaluation.

6.5.2. Encryption (At-rest)

The CAT system will use native AWS encryption features to encrypt data upon receipt. No action is required by the Industry Member.

6.5.3. Authentication

Two-factor authentication will be required for access to the Reporter Portal. The first factor will be username and password which will require periodic rotation.

The second factor will to be via push notification to an off-the-shelf application installed on a mobile device provided by the user. The user will be required to install the application to their mobile device through their mobile operating system's application store and then complete a registration process on the Reporter Portal or SRG. There is no cost to the Reporter or the user for this mobile application.

The SFTP service similarly requires that two conditions be met to access the interface. The first factor is authentication via username and password. The second is the use of a defined IP source address that is established during initial onboarding. The SFTP system implements an IP whitelist that prevents access from any system not on the whitelist.

More detailed information related to Security is described in the FINRA CAT Connectivity Supplement for Industry Members available at https://www.catnmsplan.com/registration/.

7. Feedback and Corrections

CAT provides feedback associated with CAT submissions for CAT Reporters and Submitters including:

- **File Status:** available via SFTP and the CAT Reporter Portal, indicates the acceptance or associated errors with a Meta and/or Data Submission files.
- **Reporting Statistics:** available via the CAT Reporter Portal, daily summary statistics representing reporting activity and errors for prior submissions and CAT Trading days. Error Rate is also included.
- **Error Feedback:** available via SFTP and the CAT Reporter Portal, errors found during processing will be made available including Rejections, Out of Sequence, and Unlinked events.
- **Corrections Feedback:** available via the CAT Reporter Portal, information is provided for the repair status of all Corrections. When an error has been corrected, the updated status will be reflected.
- **System Status and Announcements:** available via the CAT Reporter Portal, the status of CAT processing will be made available with a distinction for instances when a processing delay or issue is occurring. Additionally, announcements related to system maintenance and upcoming changes will be presented.

This section describes the procedures for obtaining feedback and making corrections/deletions associated with feedback of errors. Additionally this section describes the requirement for making correction/deletions for accepted data for which there was no feedback.

7.1. File and Error Feedback

Feedback files with associated errors are generated at different stages of processing and returned to the CAT Reporter and Submitter. Errors identified during each processing stage will be provided in the following order with the associated Feedback and Error Correction availability:

Table 71: Feedback and Error Correction Availability

Seq	Processing Stage	Feedback	Anticipated Delivery	Delivery No Later Than
1	File Acknowledgement	File Submission Error	Within 10 minutes of File Submission	1 hour of File Submission
2	File Integrity	File Integrity Error	Within 30 minutes of Metadata File Submission	2 hours of Metadata File Submission
3	Data Ingestion	Data Errors including syntax and semantic errors	Within 1 hour of File Integrity Feedback	4 hours of File Integrity Feedback
		Corrections Feedback for	Within 1 hour of File	4 hours of File Integrity

Seq	Processing Stage	Feedback	Anticipated Delivery	Delivery No Later Than
		Ingestion Errors	Integrity Feedback	Feedback
4	Linkage Discovery	Linkage errors including duplicates, out of sequence and linkage errors	T+1 at Noon	T+1 at Noon
		Corrections Feedback for Linkage Errors	Processing Date of Correction Submission + 1 at Noon	Processing Date of Correction Submission + 1 at Noon

7.1.1. Feedback Generation

Feedback associated with all processing stages will be made available via SFTP and/or the CAT Reporter Portal as described in Table 67: CAT Data and Feedback Interface Methods.

For Feedback files made available via SFTP, the following rules apply:

1. The format of feedback files will match the format of the original file submission.
2. Meta Feedback files will be accessible under the `cat/feedback` directory in the Submitter's home directory on the Feedback SFTP server.
3. Error Data Feedback files will be accessible under the `cat/errors` directory in the Submitter's home directory on the Feedback SFTP server.
4. Feedback for data submitted by a CAT Reporting Agent on behalf of a CAT Reporter will be accessible under the CAT Reporter's home directory on the Feedback SFTP server if the CAT Reporter has an SFTP account.
5. If a file is rejected, it will not proceed to the next processing stage.
6. Error Data Feedback files generated during Data Ingestion and Linkage Discovery will be compressed. Each line in the Data File will contain exactly one record ending with a new-line character.
7. The minimum retention time for feedback files on the SFTP server is 10 calendar days. After that time, they may be removed from the server. Feedback will be available via the CAT Reporter Portal for at least 90 days.

7.1.2. Feedback File Names

1. File Submissions, including Meta and Data files, which have a malformed file name will receive a feedback file name, using the following format:

```
<original File Name>.ack.error
```

Example: SUBID_MYID_20170101_000001.ack.error

2. Meta Feedback Files created by CAT during Acknowledgement, File Integrity and Data Ingestion will be named using the following format:

```
<original File Base Name>[.<Type>][.<File
Instruction>].<Stage>[_<Feedback File Number>].<Format Extension>
```

Example: SUBID_MYID_20170101_Group1_OrderEvents_000123.DEL.integrity.json

Table 72: Elements of a Meta Feedback File Name generated during Acknowledgement, File Integrity and Data Ingestion

Field Name	Data Type	Description	Include Key
Original File Base Name		Base Name of the Original File Submission. `<CAT Submitter ID>_<CAT Reporter IMID>_<File Generation Date>_[<Group>_]<File Kind>_<File Number>`	R
Type	Alphanumeric (4)	If the Original File Submission for which feedback is generated was a Metadata File, Type will be set to .meta If the Original File Submission for which feedback is generated was a Data File, Type will not be included.	C
File Instruction	Alphanumeric (4)	Applicable to Delete Files. Set equal to '.DEL' for feedback associated with a Delete File Instruction.	C
Stage	Alphanumeric (9)	Processing stage associated with the Feedback including: • ack - Acknowledgement • integrity – File Integrity • ingestion – Data Ingestion	R
Feedback File Number	Unsigned	Sequence number of the file, 6-digits long, left-padded with zeros. Will be populated as needed to prevent duplicate Feedback file names for instances when multiple feedback files are generated for the same File Submission. The File Number is not required to be populated in submission order.	C
Format Extension	Alphanumeric (4)	Represents the feedback format; Set equal to the feedback format of the original submission. JSON formatted feedback will be set to 'json', and CSV formatted feedback will be populated with 'csv'.	R

3. Meta Feedback Files created by CAT during Linkage Discovery will be named using the following format:

```
<CAT Submitter ID>_<CAT Reporter IMID>_<CAT File Generation Date>_<File
Kind>.linkage[_<Feedback File Number>].<Format Extension>
```

For example: SUBID_MYID_20170101_OrderEvents.linkage_000001.json

Table 73: Elements of a Meta Feedback File Name generated during Linkage Discovery

Field Name	Data Type	Description	Include Key
CAT Submitter ID	Unsigned	CAT Reporting Agent that submitted the data to CAT.	R
CAT Reporter IMID	Alphanumeric (7)	The SRO assigned identifier of the firm to which the data within the file belongs. For Named Errors, the identifier named on the record reported by CAT Reporter whose event is unlinked.	R
CAT File Generation Date	Date	The date the file was generated by CAT.	R
File Kind	Alphanumeric (20)	Set to 'OrderEvents'	R
Type		Not applicable for Linkage Discovery Feedback files	
Stage	Alphanumeric (9)	Set to 'LINKAGE' for Linkage Feedback Set to 'LINKAGE_OUTSTANDING' for Outstanding Linkage Errors Feedback	R
Feedback File Number	Unsigned	Sequence number of the file, 6-digits long, left-padded with zeros. Will be populated as needed to prevent duplicate Feedback file names for instances when multiple feedback files are generated for Linkage errors. The File Number is not required to be populated in submission order.	C
Format Extension	Alphanumeric (4)	Represents the feedback format; Set equal to the feedback format of the original submission. JSON formatted feedback will be set to 'json', and CSV formatted feedback will be populated with 'csv'.	R

4. When there are no Linkage Errors found in Linkage Discovery, the feedback file name will have the following format:

```
<CAT Submitter ID>_<CAT Reporter IMID>_<CAT File Generation
Date>_OrderEvents.linkage[_<Feedback File Number>].success
```

5. Error Data Feedback Files of Ingestion Errors created by CAT during File Ingestion will be named using the following format: (refer to Table 73 for applicable field definitions)

```
<original File Base Name>.ingestion.error[_<Feedback File
Number>].<Format Extension>.bz2
```

Example: SUBID_MYID_20170101_Group1_OrderEvents_000123.ingestion.error.json.bz2

6. Error Data Feedback Files of Linkage Errors created by CAT during Linkage Discovery will be named using the following format: (refer to Table 73 for applicable field definitions)

   <CAT Submitter ID>_<CAT Reporter IMID>_<CAT File Generation Date>_<File Kind>.linkage.error[_<Feedback File Number>].<Format Extension>.bz2

   Example: SUBID_MYID_20170101_OrderEvents.linkage.error_000001.json.bz2

7. Meta Feedback Files for outstanding linkage errors created by CAT during Linkage Discovery will be named using the following format:

   <CAT Submitter ID>_<CAT Reporter IMID>_<CAT File Generation Date>_<File Kind>.linkage_outstanding[_<Feedback File Number>].<Format Extension>

   For example: SUBID_MYID_20170101_OrderEvents.linkage_outstanding_000001.json

8. When Linker Errors were previously found, and there are no outstanding Linkage Errors found in Linkage Discovery, the feedback file name will have the following format:

   <CAT Submitter ID>_<CAT Reporter IMID>_<CAT File Generation Date>_OrderEvents.linkage_outstanding[_<Feedback File Number>].success

9. Error Data Feedback Files of outstanding Linkage Errors created by CAT during Linkage Discovery will be named using the following format: (refer to 62 for applicable field definitions)

   <CAT Submitter ID>_<CAT Reporter IMID>_<CAT File Generation Date>_<File Kind>.linkage_outstanding.error[_<Feedback File Number>].<Format Extension>.bz2

   Example: SUBID_MYID_20170101_OrderEvents.linkage_outstanding.error_000001.json.bz2

7.2. File Acknowledgement

The File Acknowledgement processing stage is where files are received and processing is initiated. Every file submission is acknowledged, and file names are validated.

The following rules apply to File Acknowledgment:

1. Acknowledgement feedback will be generated for all file submissions, including Meta and Data files.
2. The Plan Processor will remove files from the upload directory as soon as each file upload is complete.
3. The Submitter must not delete files from the `/submitterID/cat/upload` directory.

4. File acknowledgement feedback files will include the file extension `.ack`
5. File acknowledgement errors, including when a File Name is malformed, will return the original filename with the .ack.error extension. The file will be empty.

7.2.1. File Acknowledgement Feedback Definition

Table 74: File Acknowledgement Feedback

Seq	Name	Data Type (Length)	Description
1	feedbackVersion	Text (10)	The schema version of the feedback file.
2	submitter	Unsigned	The CAT Submitter ID from the file name.
3	reporter	CAT Reporter IMID	The CAT Reporter IMID from the file name.
4	fileGenerationDate	Date	The file generation date from the file name.
5	fileName	Alphanumeric (90)	File name as submitted for which feedback is being provided.
6	receiptTimestamp	Timestamp	Date and time the file was received. Timestamp will be in STRING format.
7	stage	Alphanumeric (20)	Set to 'FILE_ACKNOWLEDGEMENT'
8	stageCompleteTimestamp	Timestamp	Date and time when the file completed the acknowledgement stage. Timestamp will be in STRING format.
9	status	Alphanumeric (7)	Set to 'Success'.
10	severity	Alphanumeric (7)	Not applicable for the acknowledgement stage.
11	code	Unsigned	Not applicable for the acknowledgement stage.
12	errorFileName	Alphanumeric (90)	Not applicable for the acknowledgement stage.
13	errorCount	Unsigned	Not applicable for the acknowledgement stage
14	errorDetails	Multi-Dimensional Array	Not applicable for the acknowledgement stage.
Error Details – Metadata File Block Start For each Error Type *n*, the following values will be included:			
14.*n*.1	errorType	Alphanumeric (20)	Not applicable for the acknowledgement stage.
14.*n*.2	errorTypeCount	Unsigned	
Error Details – Metadata Block End			
15	doneForDay	Boolean	Not applicable for the acknowledgement stage.
16	metaFileName	Alphanumeric (90)	Not applicable for the acknowledgement stage.

7.2.2. JSON Examples of File Acknowledgement

Metadata File Submission Acknowledgement Success:

Original File Submission File Name	SUBID_MYID_20170307_OrderEvents_000123.meta.json
Meta Feedback File Name	SUBID_MYID_20170307_OrderEvents_000123.meta.ack.json

Acknowledgement of Meta File	{
	  "feedbackVersion": "2.2.1",
	  "submitter": "SUBID",
	  "reporter": "MYID",
	  "fileGenerationDate": 20170307,
	  "fileName": "SUBID_MYID_20170307_OrderEvents_000123.meta.json",
	  "receiptTimestamp": "20170307T153552.000001089",
	  "stage": "FILE_ACKNOWLEDGEMENT",
	  "stageCompleteTimestamp": "20170307T154152.000001089",
	  "status": "Success"
	}

Data File Submission Acknowledgement Success:

Original File Submission File Name	SUBID_MYID_20170307_OrderEvents_000123.json.bz2
Meta Feedback File Name	SUBID_MYID_20170307_OrderEvents_000123.ack.json

Acknowledgement of Data File	{
	  "feedbackVersion": "2.2.1",
	  "submitter": "SUBID",
	  "reporter": "MYID",
	  "fileGenerationDate": 20170307,
	  "fileName": "SUBID_MYID_20170307_OrderEvents_000123.json.bz2",
	  "receiptTimestamp": "20170307T153552.000001089",
	  "stage": "FILE_ACKNOWLEDGEMENT",
	  "stageCompleteTimestamp": "20170307T154152.000001089",
	  "status": "Success"
	}

Data File Submission Acknowledgement Error:

Original File Submission File Name	SUBID_MYID_20170307000123.json.bz2
Meta Feedback File Name	SUBID_MYID_20170307000123.ack.error
Acknowledgement of Data File	empty

7.2.3. CSV Example for File Integrity Feedback

Metadata File Submission Integrity Success:

Original File Submission File Name	SUBID_MYID_20170307_OrderEvents_000123.meta.csv	
Meta Feedback File Name	SUBID_MYID_20170307_OrderEvents_000123.meta.integrity.csv	
Meta File		Not applicable

Metadata File Submission Integrity Error:

Original File Submission File Name	SUBID_MYID_20170307_OrderEvents_000123.meta.csv	
Meta Feedback File Name	SUBID_MYID_20170307_OrderEvents_000123.meta.integrity.csv	
Meta File	LINE 1	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000123.meta.csv, 20170307T153552.000001089,FILE_INTEGRITY, 20170307T154152.000001089,Failure,Error,1107,,,,,

Data File Submission Integrity Success:

Original File Submission File Name	SUBID_MYID_20170307_OrderEvents_000123.csv.bz2	
Meta Feedback File Name	SUBID_MYID_20170307_OrderEvents_000123.integrity.csv	
Meta File	LINE 1	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000123.csv.bz2, 20170307T153552.000001089,FILE_INTEGRITY, 20170307T154152.000001089,Success,,,,,,,

Data File Submission Integrity Error:

Original File Submission File Name	SUBID_MYID_20170307_OrderEvents_000123.csv.bz2	
Meta Feedback File Name	SUBID_MYID_20170307_OrderEvents_000123.integrity.csv	
Meta File	LINE 1	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000123.csv.bz2, 20170307T153552.000001089,FILE_INTEGRITY, 20170307T154152.000001089,Failure,Error,1107,,,,,

7.2.4. CSV Examples of File Acknowledgement

Metadata File Submission Acknowledgement:

Original File Submission File Name	SUBID_MYID_20170307_OrderEvents_000123.meta.csv	
Meta Feedback File Name	SUBID_MYID_20170307_OrderEvents_000123.meta.ack.csv	
Acknowledgement of Meta File	LINE 1	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000123.meta.csv, 20170307T153552.000001089,FILE_ACKNOWLEDGEMENT, 20170307T154152.000001089,Success,,,,,,,

Data File Submission Acknowledgement:

Original File Submission File Name	SUBID_MYID_20170307_OrderEvents_000123.csv.bz2	
Meta Feedback File Name	SUBID_MYID_20170307_OrderEvents_000123.ack.csv	
Acknowledgement of Meta File	LINE 1	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000123.csv.bz2, 20170307T153552.000001089,FILE_ACKNOWLEDGEMENT, 20170307T154152.000001089,Success,,,,,,,

7.3. File Integrity

During the File Integrity processing stage, file names are validated for uniqueness. Filename and Metadata file contents are validated to ensure they are readable, formatted as expected, and include valid information related to the Data file submission. Additionally, Metadata files are paired with Data files to ensure the included File Details represent the information contained in the associated Data file.

The following rules apply:

1. All files with a Success status generated during File Acknowledgement will enter the File Integrity processing stage.
2. File integrity feedback file will include the file extension `.integrity`.
3. Metadata and Data filenames which duplicate prior submissions accepted during File Integrity will reject.
4. Metadata files which are not readable, include invalid identifiers, or values that do not match the file name will reject.
5. Data files which include invalid values in the file name will reject.
6. The CAT Submitter ID of the metadata and data file must be equal to the Submitter ID of the submitter that sent the files (as determined from SFTP or CAT Reporter Portal username).
7. The CAT Reporter IMID within the filename must match the CAT Reporter IMID populated in the metadata file.

8. If the CAT Submitter is reporting on behalf of the CAT Reporter IMID, a Reporting Relationship must be effective.
9. If the CAT Submitter is designating a Third-party CAT Reporting Agent to be able to view and take action on reporting feedback, a Third Party Reporting Agent Relationship must be effective.
10. Metadata files that cannot be paired with a Data file will reject as Data files must be submitted prior to the Metadata file submission.
11. Data Files that do not pair with an associated metadata file within 30 minutes of the file submission (either because the metadata file was not uploaded or had a processing error) will result in a warning.
12. A Data file without an associated Metadata file within 2 hours of the data file submission will reject. The file must be resubmitted. The resubmitted filename may be the same.
13. Once a Data file and Metadata file are paired, validations of the Metadata Block will occur. If an error is found in the contents of the Metadata Block, the associated Data File will reject. In order to resubmit the Data file, a Metadata file for the Data file is also required.
14. Compressed Hash - computed SHA256 must equal metadata Compressed Hash.

7.3.1. JSON Examples for File Integrity Feedback

Metadata File Submission Integrity Success:

Original File Submission File Name	SUBID_MYID_20170307_OrderEvents_000123.meta.json
Meta Feedback File Name	SUBID_MYID_20170307_OrderEvents_000123.meta.integrity.json
Meta File	Not applicable

Metadata File Submission Integrity Error:

Original File Submission File Name	SUBID_MYID_20170307_OrderEvents_000123.meta.json
Meta Feedback File Name	SUBID_MYID_20170307_OrderEvents_000123.meta.integrity.json
Meta File	{ "feedbackVersion": "2.2.1", "submitter": "SUBID", "reporter": "MYID", "fileGenerationDate": 20170307, "fileName": "SUBID_MYID_20170307_OrderEvents_000123.meta.json", "receiptTimestamp": "20170307T153552.000001089", "stage": "FILE_INTEGRITY", "stageCompleteTimestamp": "20170307T154152.000001089", "status": "Failure", "severity": "Error", "code": [1107]

	}

Data File Submission Integrity Success:

Original File Submission File Name	SUBID_MYID_20170307_OrderEvents_000123.json.bz2
Meta Feedback File Name	SUBID_MYID_20170307_OrderEvents_000123.integrity.json
Meta File	{ "feedbackVersion": "2.2.1", "submitter": "SUBID", "reporter": "MYID", "fileGenerationDate": 20170307, "fileName": "SUBID_MYID_20170307_OrderEvents_000123.json.bz2", "receiptTimestamp": "20170307T153552.000001089", "stage": "FILE_INTEGRITY", "stageCompleteTimestamp": "20170307T154152.000001089", "status": "Success" }

7.3.2. File Integrity Feedback Definition

Table 75: File Integrity Feedback

Seq	Name	Data Type (Length)	Description
1	feedbackVersion	Text (10)	The schema version of the feedback file.
2	submitter	Unsigned	The CAT Submitter ID from the file name.
3	reporter	CAT Reporter IMID	The CAT Reporter IMID from the file name.
4	fileGenerationDate	Date	The file generation date from the file name.
5	fileName	Alphanumeric (90)	File name as submitted for which feedback is being provided.
6	receiptTimestamp	Timestamp	Date and time the file was received. Timestamp will be in STRING format.
7	stage	Alphanumeric (20)	Set to 'FILE_INTEGRITY'
8	stageCompleteTimestamp	Timestamp	Date and time when the file completed the integrity stage. Timestamp will be in STRING format.
9	status	Alphanumeric (7)	Populated with 'Success' or 'Failure' as per the processing outcome. Set to 'Failure' when errors and/or warnings are identified.
10	severity	Alphanumeric (7)	Populated when the Status is 'Failure'. If status is 'Failure', severity will be set to 'Error' or 'Warning'.

Seq	Name	Data Type (Length)	Description
			If one or more errors found, will be set to 'Error'. Otherwise will be set to 'Warning'.
11	code	Array	Error codes indicating reason for File Failure. Not applicable for Metadata block errors.
12	errorFileName	Alphanumeric (90)	Not applicable for the integrity stage.
13	errorCount	Unsigned	Not applicable for the integrity stage.
14	errorDetails	Multi-Dimensional Array	Only applicable for feedback file on a metadata file with multiple blocks.
Error Details – Metadata File Block Start For each Metadata Block for which there is an error, the following values will be included:			
14.*n*.1	blockFileName	Alphanumeric (90)	The *fileName* of the data file named within the metadata block which has an associated error.
14.*n*.2	code	Array	Error codes indicating reason for Failure of the metadata block.
Error Details – Metadata Block End			
15	doneForDay	Boolean	Not applicable for the integrity stage.
16	metaFileName	Alphanumeric (90)	Metadata file name that was paired with the Data file. Not populated when a meta and data files were not able to be paired. Not populated for Metadata files for which feedback is being provided.

7.4. Data Ingestion

During Data Ingestion, events within the Data file are validated. Validations to ensure correct syntax and semantics associated with record length, field length, data type, non-null and reference data checks are performed. Validations are initiated by the Action Type and event type of every record contained in the file. Ingestion feedback will be provided with reference to the file in which the data was transmitted.

During the ingestion phase, each record will be checked for proper formatting (JSON field names and values, CSV values in correct positions) and data contents.

The following rules apply:

1. File Ingestion feedback will be generated for every data file for which a Success status was generated during File Integrity. The feedback will consist of a metadata feedback file and an error feedback data file when errors are found.
2. Metadata File Ingestion feedback files will include the file extension `.ingestion`.

3. Ingestion feedback error data files will include the file extension `.ingestion.error`.
4. Data Files which are not readable and for which the record count does not match the record count provided in the meta will be rejected. Records within the file will not be processed. The file must be resubmitted. Meta feedback will be provided including the error code associated with the file error.
5. Any record within a Data File determined to be malformed or otherwise invalid will be rejected.
6. When a record is readable and can be parsed, Ingestion validations will occur for every field within the record.
7. One or more errors may be found within a record.
8. Records with associated errors found during Ingestion will result in a rejection. The record will not participate in Linkage Discovery.
9. Record rejections will be provided in feedback with the generation of a Meta feedback file and Error Data Feedback file that includes the error records.
10. Ingestion error feedback will provide up to eight (8) error codes. If there are more than 8 error codes, the eighth error code will inform the user that there are additional errors associated with the record that were not included in the feedback file.
11. When an error record that was originally submitted in CSV format is readable and parsable, the error feedback will be returned from the 3rd position.
12. When an error record that was originally submitted in CSV format is not readable, the original record submitted to CAT will be returned.
13. When an error is found for events originally submitted in JSON format, the original record submitted to CAT will be returned and will be formatted as a string using JSON rules.
14. Records that are not rejected during Ingestion will participate in Linkage Discovery.

7.4.1. Ingestion Feedback Definitions

Table 76: Ingestion Feedback Metadata File

Seq	Name	Data Type (Length)	Description
1	feedbackVersion	Text (10)	The schema version of the feedback file.
2	submitter	Unsigned	The CAT Submitter ID from the file name.
3	reporter	CAT Reporter IMID	The CAT Reporter IMID from the file name.
4	fileGenerationDate	Date	The file generation date from the file name.
5	fileName	Alphanumeric (90)	File name as submitted.
6	receiptTimestamp	Timestamp	Date and time the file was received. Timestamp will be in STRING format.
7	stage	Alphanumeric (20)	Set to 'INGESTION'
8	stageCompleteTimestamp	Timestamp	Date and time when the file completed the ingestion stage. Timestamp will be in

Seq	Name	Data Type (Length)	Description
			STRING format.
9	status	Alphanumeric (7)	Populated with 'Success' or 'Failure' as per the processing outcome. Set to 'Failure' when data errors and/or warnings are identified.
10	severity	Alphanumeric (7)	Populated when the Status is 'Failure'. If status is 'Failure', severity will be set to 'Error'.
11	code	Unsigned	Error code indicating reason for File Failure. Populated when the Data File is rejected.
12	errorFileName	Alphanumeric (90)	File name associated with the feedback metadata file generated by CAT. Populated if errors were found associated with individual records contained in the Data file.
13	errorCount	Unsigned	Number of Error and Warning records in the file; If no errors found, will be set to 0.
14	errorDetails	Multi-Dimensional Array	Not applicable for the ingestion stage.
Error Details – Metadata Block Start For each Error Type *n*, the following values will be included:			
14.*n*.1	errorType	Alphanumeric (20)	Not applicable for the ingestion stage.
14.*n*.2	errorTypeCount	Unsigned	
Linkage Error Details – Metadata Block End			
15	doneForDay	Boolean	Not applicable for the ingestion stage.
16	metaFileName	Alphanumeric (90)	Metadata file name that was paired with the Data file.

Table 77: Ingestion Feedback Error Data File

Seq	Name	Data Type (Length)	Description
1	errorCode	Array	The CAT Error Codes associated with the *firmROEID* representing up to 8 error codes. If the record has more than 8 errors, 7 error codes will be presented. The 8th error code will be set to "2999" which indicates the event has more than 8 errors. Refer to Appendix E for the definition of all Error Codes.
2	actionType	Alphanumeric (3)	Set to 'RPR'
3	errorROEID	Numeric (20)	Identifier for the record that has errors. Populated with a CAT assigned identifier
4	errorRecord	Unspecified	CSV Format: Original Record, containing all fields of the original record excluding *actionType* and *errorROEID*. JSON Format: Original Record, containing all fields of the original record. The original record will be escaped

Seq	Name	Data Type (Length)	Description
			with JSON rules and returned as a string. Note: the length of the original record will be a max of 8190 characters. The errorRecord will be the original record that was submitted plus additional characters for JSON formats as specified.

7.4.2. JSON Examples for Data Ingestion Feedback

Data File Submission Ingestion Success:

Original File Submission File Name	SUBID_MYID_20170307_OrderEvents_000123.json.bz2
Meta Feedback File Name	SUBID_MYID_20170307_OrderEvents_000123.ingestion.json

Meta File	{
	"feedbackVersion": "2.2.1",
	"submitter": "SUBID",
	"reporter": "MYID",
	"fileGenerationDate": 20170307,
	"fileName": "SUBID_MYID_20170307_OrderEvents_000123.json.bz2",
	"receiptTimestamp": "20170307T153552.000001089",
	"stage": "INGESTION",
	"stageCompleteTimestamp": "20170307T154152.000001089",
	"status": "Success",
	"errorCount": 0
	"metaFileName": "SUBID_MYID_20170307_OrderEvents_000123.meta.json"
	}

Data File Submission Ingestion Error:

Original File Submission File Name	SUBID_MYID_20170307_OrderEvents_000123.json.bz2
Meta Feedback File Name	SUBID_MYID_20170307_OrderEvents_000123.ingestion.json
Meta File	{ "feedbackVersion": "2.2.1", "submitter": "SUBID", "reporter": "MYID", "fileGenerationDate": 20170307, "fileName": "SUBID_MYID_20170307_OrderEvents_000123.json.bz2", "receiptTimestamp": "20170307T153552.000001089", "stage": "INGESTION", "stageCompleteTimestamp": "20170307T154152.000001089", "status": "Failure", "errorFileName": "SUBID_MYID_20170307_OrderEvents_000123 .ingestion.error.json.bz2", "errorCount": 2

	"metaFileName": "SUBID_MYID_20170307_OrderEvents_000123.meta.json" }
Error Data Feedback File Name	SUBID_MYID_20170307_OrderEvents_000123.ingestion.error.json.bz2
Data File	{"errorCode":[2001,2002],"actionType":"RPR","errorROEID":123456,"errorRecord": "{\"actionType\":\"NEW\",\"firmROEID\":\"20170901_ROE1234567\",\"type\":\"MEOJ\",\"orderKeyDate\":\"20170901T120102.123456\",\"eventTimestamp\":\"20170901T120102.123456\",\"manualFlag\":false,\"symbol\":\"XYZ\",\"orderID\":\"T12346\",\"priorOrderID\":\"T12345\",\"priorOrderKeyDate\":\"20170901T120102.000000\",\"initiator\":\"C\",\"quantity\":1000,\"minQty\":100,\"leavesQty\":100}"} {"errorCode":[2003],"actionType":"RPR","errorROEID":144477,"errorRecord": "{\"actionType\":\"NEW\",\"firmROEID\":\"20170901_ROE1230011\",\"type\":\"MEOJ\",\"orderKeyDate\":\"20170901T120162.123456\",\"eventTimestamp\":\"20170901T120162.123456\",\"manualFlag\":false,\"symbol\":\"XYZ\",\"orderID\":\"T12355\",\"priorOrderID\":\"T12344\",\"priorOrderKeyDate\":\"20170901T120092.000000\",\"initiator\":\"C\",\"quantity\":1100,\"minQty\":100,\"leavesQty\":100}"}

7.4.3. CSV Examples for File Ingestion Feedback

Data File Submission Ingestion Success:

Original File Submission File Name	SUBID_MYID_20170307_OrderEvents_000123.csv.bz2	
Meta Feedback File Name	SUBID_MYID_20170307_OrderEvents_000123.ingestion.csv	
Meta File	LINE 1	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000123.csv.bz2, 20170307T153552.000001089,INGESTION, 20170307T154152.000001089,Success,,,,0,,, SUBID_MYID_20170307_OrderEvents_000123.meta.csv

Data File Submission Ingestion Error:

Original File Submission File Name	SUBID_MYID_20170307_OrderEvents_000123.csv.bz2	
Meta Feedback File Name	SUBID_MYID_20170307_OrderEvents_000123.ingestion.csv	
Meta File	LINE 1	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000123.csv.bz2, 20170307T153552.000001089,INGESTION,20170307T154152.000001089,Failure,,, SUBID_MYID_20170307_OrderEvents_000123

<table>
<tr><td></td><td></td><td>.ingestion.error.csv.bz2,2,,,
SUBID_MYID_20170307_OrderEvents_000123.meta.csv</td></tr>
<tr><td>Data Feedback File Name</td><td colspan="2">SUBID_MYID_20170307_OrderEvents_000123.ingestion.error.csv</td></tr>
<tr><td rowspan="2">Data File</td><td>LINE 1</td><td>2001|2002,RPR,123456,<error record></td></tr>
<tr><td>LINE 2</td><td>2003,RPR,123457,<error record></td></tr>
</table>

7.5. Linkage Discovery

During Linkage Discovery, events are compared with other events to perform duplicate checks, out of sequence checks and to perform linkages among events having the same Linkage Keys. The linkage types performed by CAT are defined in Section 2.6.

Linkage Discovery processing will occur in the following order:

Table 78: Steps in Linkage Discovery

Seq	Linkage Discovery Step	Feedback
1	Full Duplicate Checks	When duplicates are found, one record is kept and all others are rejected
2	Order Key, Trade Key, Quote Key and Fulfillment Key Duplicate Checks	When an Event Key is duplicated, all events having the same key are rejected
5	Intrafirm Linkage and Out of Sequence	Events within a firm that do not match or are found to be out of sequence result in an unlinked event
	Interfirm Linkage	Events routed/received between firms that do not match result in an unlinked event, including Route Key duplicate checks
	Exchange Linkage	Events routed to an Exchange that do not match result in an unlinked event, including Route Key duplicate checks
	Trade Linkage	Trade events which name a TRF/ORF/ADF record that do not match result in an unlinked event

The following rules apply:

1. Linkage Discovery processing will be performed for all events which pass Ingestion.
2. Linkage feedback files will include the file extension `.linkage`.
3. Linkage feedback error files will include the file extension `.linkage.error`.
4. The *CATReporterIMID* and all fields included on the original submission, except for the *firmROEID* participate in full duplicate checking.
5. When full duplicates are identified, one event will be kept and all other events which fully duplicate the record will be rejected.

6. When Event Key duplicates are identified, all events having the duplicated key will result in rejections for all records with the same key.
7. Events that passed Event Key duplicate validations participate in the process which generates linkages.
8. When Linkage Key duplicates are identified, all events having the duplicated Linkage Key will result in in unlinked errors for all records with the same key.
9. When linkages are expected but do not occur, a linkage error will be generated reflecting an unlinked event.
10. In cases when linkage did not occur between venues, unlinked feedback will be generated for the CAT Reporter whose record did not link and the CAT Reporter that was named. Separate error codes will be assigned.
11. One or more linkage errors may be found within a record.
12. Named errors are considered repaired when the unlinked event is repaired.
13. Linkage feedback for unlinked errors will be provided in the submission format of the unlinked event, including named unlinked errors.
14. Linkage feedback for named unlinked errors will be provided in the format of the original submission unless the CAT Reporter specifies a preference for named unlinked errors that is different than the unlinked errors on the CAT Reporter Portal.
15. Linkage Discovery Error Data Feedback files will be limited to an uncompressed file size of 1GB.
16. Multiple Unlinked Error Data Feedback files will be provided to ensure the file size maximum is not exceeded. The File Feedback number will be incremented to ensure the feedback file name is not duplicated.
17. When there are no Linkage Discovery Errors, an empty file will be returned with a .success extension.
18. Linkage Feedback Files <u>are named by CAT</u>. These feedback files represent Linkage Feedback across all submissions for the CATReporterIMID/Submitter combination. The Feedback is not associated with specific submission file(s). The file name includes the Processing Date for which the Unlinked Feedback represents.
19. Linkage Feedback Files present linkage fields as they were ingested, not as they were processed for linkage. For example, leading and trailing zeros on a *routedOrderID* or *session* will be reflected in Linkage Feedback Files as they were ingested although they are removed for linkage processing.

7.5.1. Linkage Discovery Feedback Definitions

Linkage Discovery Errors include unlinked events reported by the CAT Reporter, and unlinked events on which the CAT Reporter was named. For named linkage errors, a subset of fields will be provided.

There are 5 types of Unlinked Data errors including:

Unlinked Type	Feedback Definition
1. Unlinked error reported by the CAT Reporter for all event types	Table 80: Linkage Error Reported by CAT Reporter
2. Named on an Unlinked Industry Member Order Event	Table 81: Linkage Error – Named on Unlinked Industry Member Order Event
3. Named on an Unlinked Industry Member Quote Event	Table 82: Linkage Error – Named on Unlinked Industry Member Quote Event
4. Named on an Unlinked Exchange Event	Table 83: Linkage Error – Named on Unlinked Exchange Event
5. Named on an Unlinked Trade Report	Table 84: Linkage Error – Named on Unlinked Trade Report

7.5.1.1. Metadata Feedback File

A metadata feedback file is provided to deliver the status and outcome of validations and linkages that occurred during the Linkage Discovery processing stage. There is only one type of Metadata File, which will include the feedback meta information for all linkage errors, including unlinked events reported by the CAT Reporter and unlinked events on which the CAT Reporter was named.

Table 79: Linkage Discovery Feedback Metadata File Definition

Seq	Name	Data Type (Length)	Description
1	feedbackVersion	Text (10)	The schema version of the feedback file.
2	submitter	Unsigned	The Submitter ID associated with the original submission of the events.
3	reporter	CAT Reporter IMID	The CAT Reporter IMID associated with the events.
4	fileGenerationDate	Date	The CAT Processing Date on which the feedback file was generated. Since multiple file generation dates can participate in a single CAT Processing Date, the file generation date in the feedback file need not equal the file generation date in the actual submissions file.
5	fileName	Alphanumeric (90)	Not applicable for the linkage stage.
6	receiptTimestamp	Timestamp	Not applicable for the linkage stage.
7	stage	Alphanumeric (20)	Set to ‘linkage’
8	stageCompleteTimestamp	Timestamp	For Linkage Error File: Date and time when the file completed the linkage stage. Timestamp will be in STRING format. For Outstanding Linkage Error File: Date and time when repair processing is complete. Timestamp will be in STRING format.
9	status	Alphanumeric (7)	For Linkage Error File: Populated with ‘Success’ or ‘Failure’ as per the processing outcome.

Seq	Name	Data Type (Length)	Description
			For Outstanding Linkage Error File: Populated with 'Failure'.
10	severity	Alphanumeric (7)	Not applicable for Linkage Discovery.
11	code	Unsigned	Not applicable for Linkage Discovery.
12	errorFileName	Alphanumeric (90)	File name associated with the feedback metadata file generated by CAT.
13	errorCount	Unsigned	For Linkage Error File: Total number of Error and Warning records for the CAT Reporter IMID and CAT Submitter ID on the CAT Processing Date. For Outstanding Linkage Error File: Total number of Error records for the CAT Reporter IMID and CAT Submitter ID on the CAT Processing Date that remain unrepaired for the prior three trade dates.
14	errorDetails	Multi-Dimensional Array	Linkage feedback information associated with each linkage type. The list will include all linkage types with the error record count associated with each linkage type. Refer to Linkage Error Details – Metadata Block for information that will be included.
Linkage Error Details – Metadata Block Start For each Linkage Type *n*, the following values will be included:			
14.*n*.1	linkageType	Alphanumeric (20)	The Linkage Type. Values include: • Intrafirm • Interfirm • Exchange • Trade
14.*n*.2	errorTypeCount	Unsigned	Number of Errors and Warnings for each linkage type.
Linkage Error Details – Metadata Block End			
15	doneForDay	Boolean	Used to indicate the last metadata file for Ingestion feedback is delivered. *doneForDay*=`true` when the last file is delivered.
16	metaFileName	Alphanumeric (90)	Not applicable for Linkage Discovery.

7.5.1.2. Linkage Error Reported by CAT Reporter

Table 80: Linkage Error Reported by CAT Reporter specifies the feedback format of unlinked errors reported by the CAT Reporter. All fields of the original event will be provided in the feedback. The feedback format of the errors data file listed in Table 80 through Table 84 applies to both Linkage Error File as well as Outstanding Linkage Error File.

Table 80: Linkage Error Reported by CAT Reporter

Seq	Name	Data Type (Length)	Description
1	errorCode	Array	The CAT Error Codes associated with the *firmROEID* representing up to 2 error codes. Refer to Appendix E for the definition of all Error Codes.
2	actionType	Alphanumeric (3)	Set to 'RPR'
3	errorROEID	Numeric (20)	For unlinked events associated with the CAT Reporter, populated with a CAT assigned identifier.
4	errorRecord	Text (8190)	CSV Format: Original Record, containing all fields of the original record excluding *actionType* and *errorROEID*. JSON Format: Original Record, containing all fields of the original record. For unlinked events associated with the CAT Reporter, the original record will be populated with all fields of the original submission excluding *actionType* and *errorROEID*. Note: the length of the original record will be a max of 8190 characters and will be represented by the original record that was submitted.

7.5.1.3. Named on Unlinked Industry Member Order Event

An unlinked Industry member order event occurs when any of the following linkages fail:

- Industry Member routes an order to another Industry Member or Exchange
- Industry Member receives an order from another Industry Member or Exchange

Table 81: Linkage Error – Named on Unlinked Industry Member Order Event

Seq	Name	Data Type (Length)	Description
1	errorCode	Array	The CAT Error Codes associated with the Named Error. One errorCode will be assigned. Refer to Appendix E. of the CAT Reporting Technical Specifications for Industry Members for the definition of Trade Linkage Named Error Codes.
2	errorType	Message Type	Named Error Type; Set equal to **ERRIM**
3	errorROEID	Numeric (20)	Not applicable for Named Errors.
4	firmROEID	Text(64)	firmROEID of the unlinked event as assigned by the CAT Reporter.
5	type	Message Type	Event Type of the unlinked event.
6	symbol	Symbol	Symbol when populated on the unlinked event.
7	optionID	Text(22)	OptionID when populated on the unlinked event.

Seq	Name	Data Type (Length)	Description
8	eventTimestamp	Timestamp	Timestamp as populated on the unlinked event.
9	side	Choice	Side as populated on the unlinked event.
10	price	Price	Price as populated on the unlinked event.
11	quantity	Real Quantity	Quantity as populated on the unlinked event.
12	senderIMID	Industry Member ID / Exchange ID	senderIMID when populated on the unlinked event.
13	receiverIMID	Industry Member ID	receiverIMID when populated on the unlinked event.
14	destination	Industry Member ID / Exchange ID	destination when populated on the unlinked event.
15	routedOrderID	Text (64)	The routedOrderID as populated on the unlinked event.
16	reservedForFutureUse		Field is Reserved for Future Use.
17	reservedForFutureUse		Field is Reserved for Future Use.

7.5.1.4. Named on Unlinked Industry Member Quote Event

An unlinked Industry member quote event occurs when any of the following linkages fail:

- Industry Member sends a quote to an Inter-dealer Quotation System
- Inter-dealer Quotation System receives a quote from an Industry Member

Table 82: Linkage Error – Named on Unlinked Industry Member Quote Event

Seq	Name	Data Type (Length)	Description
1	errorCode	Array	The CAT Error Codes associated with the Named Error. One errorCode will be assigned. Refer to Appendix E. of the CAT Reporting Technical Specifications for Industry Members for the definition of all Error Codes.
2	errorType	Message Type	Named Error Type; Set equal to **ERRQT**
3	errorROEID	Numeric (20)	Not applicable for Named Errors.
4	firmROEID	Text(64)	firmROEID of the unlinked event as assigned by the CAT Reporter.
5	type	Message Type	Event Type of the unlinked event.
6	symbol	Symbol	Symbol when populated on the unlinked event.
7	eventTimestamp	Timestamp	Timestamp as populated on the unlinked event.
8	bidPrice	Price	bidPrice as populated on the unlinked event.
9	bidQty	Whole Quantity	bidQty as populated on the unlinked event.
10	askPrice	Price	askPrice as populated on the unlinked event.
11	askQty	Whole Quantity	askQty as populated on the unlinked event.

Seq	Name	Data Type (Length)	Description
12	senderIMID	Industry Member ID	senderIMID as populated on the unlinked event.
13	receiverIMID	Industry Member ID	receiverIMID when populated on the unlinked event.
14	destination	Industry Member ID	*destination* when populated on the unlinked event.
15	routedQuoteID	Text (64)	*routedQuoteID as populated on the unlinked event.*
16	receivedQuoteID	Text (64)	*receivedQuoteID* as populated on the unlinked event.
17	reservedForFutureUse		Field is Reserved for Future Use.
18	reservedForFutureUse		Field is Reserved for Future Use.

7.5.1.5. Named on Unlinked Exchange Event

An unlinked Exchange Event occurs when any of the following linkages fail:

- Exchange receives an order from an Industry Member
- Exchange routes an order to an Industry Member

Table 83: Linkage Error – Named on Unlinked Exchange Event

Seq	Name	Data Type (Length)	Description
1	errorCode	Array	The CAT Error Codes associated with the Named Error. One errorCode will be assigned. Refer to Appendix E. of the CAT Reporting Technical Specifications for Industry Members for the definition of Exchange Linkage Named Error Codes.
2	errorType	Message Type	Named Error Type; Set equal to **ERREX**
3	errorROEID	Numeric (20)	Not applicable for Named Errors.
4	recordID	Text(64)	Unique identifier of the unlinked exchange event as assigned by the Plan Participant
5	type	Message Type	Event Type of the unlinked event.
6	symbol	Symbol	Symbol when populated on the unlinked event.
7	optionID	Text(22)	OptionID when populated on the unlinked event.
8	eventTimestamp	Timestamp	Timestamp as populated on the unlinked event.
9	side	Choice	Side as populated on the unlinked event.
10	price	Price	Price as populated on the unlinked event.
11	quantity	Real Quantity	Quantity as populated on the unlinked event.
12	routingParty	Text(20)	RoutingParty as populated on the unlinked event. Populated to represent the identifier used to enter the order into the exchange.
13	exchange	Exchange ID	Plan Participant Exchange Identifier.
14	routedOrderID	Text (64)	The routedOrderID when populated on the unlinked event.

Seq	Name	Data Type (Length)	Description
			Populated using identifier from Exchange Data that includes the Order Identifier for the respective exchange used as part of the linkage key.
15	session	Text (40)	Session as populated on the unlinked event. Populated using identifier from Exchange Data that includes the Session Identifier for the respective exchange used as part of the linkage key.
16	capacity	Choice	Capacity as populated on the unlinked event.
17	reservedForFutureUse		Field is Reserved for Future Use.
18	reservedForFutureUse		Field is Reserved for Future Use.

7.5.1.6. Named on Unlinked Trade Report

An unlinked Trade Report occurs when the following linkage fails:

- Transaction reporting system receives a trade report from an Industry Member

Table 84: Linkage Error – Named on Unlinked Trade Report

Seq	Name	Data Type (Length)	Description
1	errorCode	Array	The CAT Error Codes associated with the Named Error. One errorCode will be assigned. Refer to Appendix E. of the CAT Reporting Technical Specifications for Industry Members for the definition of all Error Codes.
2	errorType	Message Type	Named Error Type Set equal to **ERTRF**
3	errorROEID	Numeric (20)	Not applicable for Named Errors.
4	errorRecordID	Text(64)	Control Number of the unlinked Trade Report as assigned by the FINRA transaction reporting system.
5	symbol	Symbol	Symbol on the unlinked event.
6	eventTimestamp	Timestamp	Execution Timestamp as populated on the unlinked event.
7	quantity	Real Quantity	Execution Quantity on the unlinked event.
8	price	Price	Execution price on the unlinked event.
9	rptngExctgMPID	Text (5)	Reporting Side Executing MPID from the unlinked Trade Report.
10	rptngSideTradeID	Text (40)	Reporting Side Trade ID from the unlinked Trade Report. Populated with Compliance ID in ORF and ADF; Branch Sequence Number in FINRA/NQ TRF and FINRA/NYSE TRF
11	rptngCapacity	Text (1)	Reporting Side Executing Capacity Code from the unlinked Trade Report.

Seq	Name	Data Type (Length)	Description
12	rptngSideCode	Text (1)	Reporting Side Code from the unlinked Trade Report.
13	rptngSideShortCode	Text (2)	Reporting Side Short Code from the unlinked Trade Report.
14	contraExctgMPID	Text (5)	Contra Side Executing MPID from the unlinked Trade Report.
15	contraSideTradeID	Text (40)	Contra Side Trade ID from the unlinked Trade Report. Populated with Compliance ID in ORF and ADF; Branch Sequence Number in FINRA/NQ TRF and FINRA/NYSE TRF
16	contraCapacity	Text (1)	Contra Side Executing Capacity Code from the unlinked Trade Report.
17	contraSideCode	Text (1)	Contra Side Code from the unlinked Trade Report.
18	marketCenterID	Text (2)	FINRA transaction reporting system identifier.
19	reservedForFutureUse		Field is Reserved for Future Use.
20	reservedForFutureUse		Field is Reserved for Future Use.

7.5.2. JSON Examples for Linkage Discovery Feedback

Linkage Discovery Success:

Meta Feedback File Name	SUBID_MYID_20170307_OrderEvents.linkage_000001.success
Meta File	empty

Linkage Discovery Errors:

Meta Feedback File Name	SUBID_MYID_20170307_OrderEvents.linkage_000001.json

Meta File	{
	  "feedbackVersion": "2.2.1",
	  "submitter": "SUBID",
	  "reporter": "MYID",
	  "fileGenerationDate": 20170307,
	  "stage": "LINKAGE",
	  "stageCompleteTimestamp": "20170307T154152.000001089",
	  "status": "Failure",
	  "errorFileName": "SUBID_MYID_20170307_OrderEvents
	.linkage.error_000001.json.bz2",
	    "errorCount": 2
	
	  "linkages": [
	    {
	      "linkageType": "Intrafirm",
	      "errorTypeCount": 1
	    },
	    {
	      "linkageType": "Interfirm",

	"errorTypeCount": 1
	},
	{
	"linkageType": "Exchange",
	"errorTypeCount": 0
	},
	{
	"linkageType": "Trade",
	"errorTypeCount": 0
	}
	],
	"doneForDay": true
	
	}

Error Data Feedback File Name	SUBID_MYID_20170307_OrderEvents.linkage.error_000001.json.bz2
Data File	5004,RPR,123457,<error record as per Table 84: Linkage Error – Named on Unlinked Trade Report>

Outstanding Linkage Discovery Errors:

Meta Feedback File Name	SUBID_MYID_20170307_OrderEvents.linkage_outstanding_000001.json

Meta File	{
	"feedbackVersion": "2.2.1",
	"submitter": "SUBID",
	"reporter": "MYID",
	"fileGenerationDate": 20170307,
	"stage": "LINKAGE",
	"stageCompleteTimestamp": "20170307T154152.000001089",
	"status": "Failure",
	"errorFileName": "SUBID_MYID_20170307_OrderEvents.linkage_outstanding.error_000001.json.bz2",
	"errorCount": 2
	
	"linkages": [
	{
	"linkageType": "Intrafirm",
	"errorTypeCount": 1
	},
	{
	"linkageType": "Interfirm",
	"errorTypeCount": 1
	},
	{
	"linkageType": "Exchange",
	"errorTypeCount": 0
	},
	{
	"linkageType": "Trade",
	"errorTypeCount": 0
	}
	],
	"doneForDay": true
	}

Error Data Feedback File Name	SUBID_MYID_20170307_OrderEvents.linkage.outstanding.error_000001.json.bz2

Data File	{
	"errorCode": [3001,3002]
	"actionType": "RPR"
	"errorROEID": 123456
	"errorRecord": {<errorRecord as per Table 84: Linkage Error – Named on Unlinked Trade Report>}
	}
	{
	"errorCode": [5004]
	"actionType": "RPR"
	"errorROEID": 123457
	"errorRecord": {<error record as per Table 84: Linkage Error – Named on Unlinked Trade Report>}
	}

No Outstanding Linkage Discovery Errors:

Meta Feedback File Name	SUBID_MYID_20170307_OrderEvents.linkage.outstanding_000001.success
Meta File	empty

7.5.3. CSV Examples for Linkage Discovery Feedback

Linkage Discovery Success:

Meta Feedback File Name	SUBID_MYID_20170307_OrderEvents.linkage_000001.success	
Meta File		empty

Linkage Discovery Error:

Meta Feedback File Name	SUBID_MYID_20170307_OrderEvents.linkage_000001.csv	
Meta File	LINE 1	3.1.0,SUBID,MYID,20170307,,,LINKAGE, 20170307T154152.000001089,Failure,,, SUBID_MYID_20170307_OrderEvents .linkage.error_000001.csv.bz2,2, Intrafirm@1|Interfirm@1|Exchange@0|Trade@0,true
Data Feedback File Name	SUBID_MYID_20170307_OrderEvents.linkage.error_000001.csv.bz2	
Data File	LINE 1	3001|3002,RPR,123456,<errorRecord as per Table 80: Linkage Error Reported by CAT Reporter>

	LINE 2	5004,RPR,123457,<error record as per Table 84: Linkage Error – Named on Unlinked Trade Report>

Outstanding Linkage Discovery Errors:

Meta Feedback File Name	SUBID_MYID_20170307_OrderEvents.linkage.outstanding_000001.csv	
Meta File	LINE 1	3.1.0,SUBID,MYID,20170307,,,LINKAGE, 20170307T154152.000001089,Failure,,, SUBID_MYID_20170307_OrderEvents .linkage.outstanding.error_000001.csv.bz2,2, Intrafirm@1|Interfirm@1|Exchange@0|Trade@0,true
Data Feedback File Name	SUBID_MYID_20170307_OrderEvents.linkage.outstanding.error_000001.csv.bz2	
Data File	LINE 1	3001|3002,RPR,123456,<errorRecord as per Table 84: Linkage Error – Named on Unlinked Trade Report>
	LINE 2	5004,RPR,123457,< error record as per Table 84: Linkage Error – Named on Unlinked Trade Report>

No Outstanding Linkage Errors:

Meta Feedback File Name	SUBID_MYID_20170307_OrderEvents.linkage.outstanding_000001.success	
Meta File		empty

7.6. Corrections

Errors found during CAT processing and found by CAT Reporters subsequent to transmission must be repaired. The reporting of Error Corrections is facilitated in CAT through submissions via SFTP and the CAT Reporter Portal. Certain fields are defined within the Event definitions in Section 4 Equity Events, and Section 5 Single Leg Option Events, to facilitate the reporting of corrections including: *actionType*, *firmROEID*, *errorROEID*.

Corrections may be reported for any previously submitted event. A corrected record will replace the original record for all further processing when the corrected record is received prior to T+4. The following scenarios are supported:

- Repair of events for which a CAT Error was provided in feedback
- Correction of events initiated by firms for which there is no associated CAT error feedback
- Deletion of a single event to remove erroneous events which did or did not result in a CAT Error

- Deletion of a file, resulting in the deletion of all events and respective CAT Errors
- The reporting of corrections may occur on the same CAT Processing Date as the original submission

7.6.1. Repair CAT Errors

A repair is instructed when repairing events for which a CAT Error was provided in feedback. The following rules apply:

1. A Repair record must contain the *actionType* 'RPR'
2. Repair records must populate the *errorROEID* equal to the *errorROEID* value provided by CAT in the respective error feedback; otherwise the record will be rejected.
3. Repair records may be reported within data files, among other CAT action types.
4. A Repair record must be reported for CAT Errors generated as a result of a record that is not readable, or when the record has an error associated with the *eventTimestamp*, or *firmROEID*.
5. CAT errors for which a Repair record is processed will be considered repaired.
6. CAT errors for which a Repair record is processed after to T+3 8am will be considered as a late repair.
7. Repair records processed prior to T+4 8am will result in the elimination of the previously submitted record from further processing.
8. Repair records processed after T+4 8am will be appended to the audit trail.
9. In cases where an Industry Member receives an ingestion error on a repair record that was intended to correct a Linker error, two separate errors exist in CAT. To repair these errors, the following actions can be taken:

   - If both submissions that resulted in the errors were submitted with the same firmROEID, then a single repair submission can repair both errors. Industry Members must report the Correction using actionType COR populated with the firmROEID of the errors, which will resolve both errors.

   - If the two original submissions that resulted in the errors were not submitted with the same firmROEID, then two actions are required. Industry Members must submit a Delete instruction for one of the errors, and submit a Repair or Correction for the other.

7.6.1.1. JSON Repair Record Example

```
{
  "actionType": "RPR",
  "errorROEID": 12345678,
  "firmROEID": "20170801_firmROEO12345",
  "type": "MENO",
  "orderKeyDate": "20170801T143031.000000",
  "orderID": "O12345",
  "symbol": "XYZ",
```

```
"eventTimestamp": "20170801T143031.123456",
"manualFlag": false,
"deptType": "O",
"side": "B",
"price": 10.01,
"quantity": 500,
"orderType": "LMT",
"timeInForce": {"DAY":20170801},
"tradingSession": "REG",
"custDspIntrFlag": false,
"firmDesignatedID": "PROP456",
"accountHolderType": "O",
"negotiatedTradeFlag": false
}
```

7.6.1.2. CSV Repair Record Example

```
LINE n  RPR,12345678,20170801_firmROEO12345,MENO,,20170801T143031.000000,
        O12345,XYZ,20170801T143031.123456,false,,,N,O,,Buy,10.01,500,,LMT,
        DAY=20170801,REG,,false,PROP456,O,,,false,,,,,,,,,,
```

7.6.2. Firm Initiated Corrections

A firm initiated correction is instructed for correcting events for which there is no associated CAT error feedback or the firm repairs an error without submitting an *errorROEID*. The following rules apply:

1. A firm initiated correction record must contain the *actionType* ‘COR’.
2. Firm initiated correction records must assign the *firmROEID* equal to the *firmROEID* of the original submission, otherwise the record will be rejected.
3. Firm initiated corrections must be used for correcting events for which there is no associated CAT error.
4. Firm initiated corrections may be used to repair an event for which a CAT Error was provided in feedback.
5. Firm initiated corrections may be reported within data files, among other CAT event types.
6. Events for which a firm initiated correction is processed by 8 am on T+3 will be considered corrected.
7. Events for which a firm initiated correction is processed after to T+3 8am will be considered as a late correction.
8. Events for which a firm initiated correction is processed prior to T+4 8am will result in the elimination of the previously submitted record from further processing.
9. Events for which a firm initiated correction processed after T+4 8am will be appended to the audit trail.
10. Firm identified errors associated with the CAT Reporter IMID must be corrected using the Delete Instruction. Refer to Section 7.7.3 below.

7.6.2.1. JSON Firm Initiated Correction Example


```
{
  "actionType": "COR",
  "firmROEID": "20170801_firmROEO12345",
  "type": "MENO",
  "orderKeyDate": "20170801T143031.000000",
  "orderID": "O12345",
  "symbol": "XYZ",
  "eventTimestamp": "20170801T143031.123456",
  "manualFlag": false,
  "deptType": "O",
  "side": "B",
  "price": 10.01,
  "quantity": 500,
  "orderType": "LMT",
  "timeInForce": {"DAY":20170801},
  "tradingSession": "REG",
  "custDspIntrFlag": false,
  "firmDesignatedID": "PROP456",
  "accountHolderType": "O",
  "negotiatedTradeFlag": false
  }
```


7.6.2.2. CSV Repair Record Example


```
LINE n  COR,,20170801_firmROEO12345,MENO,,20170801T143031.000000,O12345,
        XYZ,20170801T143031.123456,false,,,N,O,,Buy,10.01,500,,LMT,
        DAY=20170801,REG,,false,PROP456,O,,,false,,,,,,,,,,
```


7.6.3. Record Delete Instructions

Record deletions are used to support the removal of one or more erroneous events reported to CAT. The following rules apply:

1. A delete instruction must contain the *actionType* 'DEL'.
2. A delete instruction does not support the full restatement of the record that is being deleted.
3. Delete instructions associated with a CAT error may populate the *errorROEID* equal to the *errorROEID* value provided by CAT in the respective error feedback OR may populate the *firmROEID* equal to the *firmROEID* of the original submission.
4. A Delete instruction for an event for which a CAT error was not generated must populate the *firmROEID* equal to the *firmROEID* of the original submission.
5. Delete instructions may be reported within data files, among other CAT event types.
6. CAT errors for which a Delete instruction is processed will be considered deleted.
7. CAT errors for which a Delete instruction is processed after to T+3 8am will be considered as a late repair.

8. Delete instructions processed prior to T+4 8am will result in the elimination of the previously submitted record from further processing.
9. Delete instructions processed after T+4 8am will be appended to the audit trail.
10. A *firmROEID* used in a CAT record for which received a Delete instruction was reported may be re-used after the Delete instruction is processed.
11. Repair or Delete instructions for CAT errors where the CAT record was malformed or had an error associated with the eventTimestamp or firmROEID must be reporting using the error ROE ID provided by CAT.

Table 85: Delete Instruction Record Format

Seq	Name	Data Type (Length)	Description	Include Key
1	actionType	Choice	Set equal to 'DEL'	R
2	errorROEID	Numeric (20)	When deleting an event for which a CAT Error was provided, populate the *errorROEID* equal to the *errorROEID* value provided by CAT in the respective error feedback.	C
3	firmROEID	Text (64)	When deleting an event for which a CAT error was not generated must populate the *firmROEID* equal to the *firmROEID* of the original submission.	C

7.6.3.1. JSON Record Delete Examples

Delete record for an event with an associated CAT Error:

```
{
  "actionType": "DEL",
  "errorROEID": 45678901
}
```

Delete record for an event without an associated CAT Error

```
{
  "actionType": "DEL",
  "firmROEID": "20190416_FirmROE123"
}
```

7.6.3.2. CSV Record Delete Example

Delete record for an event with an associated CAT Error:

```
LINE n  DEL, 45678901,
```

Delete record for an event without an associated CAT Error:

```
LINE n  DEL,,20190416_FirmROE123
```

7.6.4. File Deletion

File Deletion is used to support the deletion of all events within a single data file, including all respective CAT errors for those events. File Deletions are used for files with included Event data representing an Event Date that is prior to T+4 8am. Deletion of events for Event Dates after T+4 8am is possible using the Delete Record instructions described in 7.7.3.

The following rules apply:

1. Data files must be deleted individually by the original Submitter of the file. Blocks are not supported.
2. File Acknowledgement and File Integrity feedback will be generated for every file delete instruction submitted by the firm.
3. After the File Delete Instruction has been acknowledged, a *firmROEID* that was contained in the file being deleted can be reused in a new submission.
4. The file deletion process will not be supported after T+4 8am. All events contained in the original file for which the file delete instruction was received, must represent a CAT Trading Day that is prior to T+4 8am.
5. File deletions are not supported for events with an Action Type of COR, DEL or RPR. All events contained with the original file for which the file deletion instruction was received, must have an Action Type of NEW.
6. Records contained in the original file being deleted will be removed from further processing and related CAT Errors will be considered as deleted.
7. Delete file instructions are reported using a Metadata file with an associated empty file. The hash value represents the empty file.
8. Filenames must not be reused, even after a file is deleted.
9. Delete file instructions are reported by submitting a Metadata file named as: <file base name of original data file>.meta.DEL.<Format Extension> (refer to Section 6.1.3) and an associated empty data file named as: <file base name of original data file>.DEL.<Format Extension>.<Compression Extension> Refer to the following example:

   Metadata filename: `SUBID_MYID_20190207_OrderEvents_000002.meta.DEL.json`

```
{
  "type": "META",
```

```
  "fileGenerationDate": 20190207,
  "reporter": "MYID",
  "submitter": "SUBID",
  "fileVersion": "2.2.1",
  "files": [
    {
  "fileName": "SUBID_MYID_20190207_OrderEvents_000002.DEL.json.bz2",
      "recordCount": "0",

      "compressedHash": "99A7712E2CC1CB3A5789B91E3C1D1E76D7F83D82C8D35FF1F
56B156A49C228E2"
    }
  ]
}
```


Empty Data File: `SUBID_MYID_20190207_OrderEvents_000002.DEL.json.bz2`

7.6.5. Same Day Corrections

When error feedback is received, the CAT Reporter can take immediate action which may result in the original submission and correction occurring during the same processing date. Additionally, there will be instances when a Submitter identifies a CAT submissions issue for which CAT error feedback is expected but has not yet been received. In such cases, it is also possible to submit a same day correction.

Although the CAT Processor design processes data submissions in processing stages, the data within each stage does not have a prescribed processing order. To support the processing of same day corrections for which error feedback has not been received, the following guidelines for usage of each correction mechanism are recommended:

1. File Deletion instructions may be reported any time subsequent to the delivery of File Integrity feedback of the associated file.
2. Record deletions may be instructed after receiving File Ingestion feedback for the file in which the record was submitted.
3. Firm initiated corrections may be reported after receiving File Ingestion feedback for the file in which the record was submitted.

8. Testing

CAT will provide an environment for testing that mirrors the current functionality of the CAT production environment, as well as functionality for the next release version of the CAT environment when available. The CAT testing environment will automatically determine which specification version Industry Members and CAT Reporting Agents are using for submissions. If error reporting formats change, Industry Members and CAT Reporting Agents will receive feedback in the current and new specification via sftp, as well as have access to current/new CAT Reporter portal URLs for specification changes that impact the CAT Reporter portal. Current/new connectivity changes will also be supported concurrently.

The testing environment performs lifecycle linkage, and Industry Members and CAT Reporting Agents are encouraged to coordinate testing with their counterparties so as to test lifecycle linkage with their counterparties. Without simultaneous contra-party reporting in the test environment, Industry Members and CAT Reporting Agents will not be able to test linkage with their counterparties.

Industry Members and CAT Reporting Agents must test their submissions using the testing environment before they begin submitting to the production environment.

The test environment is available 24 hours a day, 6 days a week. Refer to the CAT website for contact information and hours of operation for support.

Industry Members and CAT Reporting Agents connect to the test environment in the same manner they would connect to the production environment. However, for the connection to the test environment, one or more alternate IP addresses or URLs may be used.

Testing does not relieve an Industry Member of its responsibilities to submit production data to the CAT System.

9. Additional Information

9.1. Public Website

The CAT Public Website, www.catnmsplan.com, is available via the public internet, and is hosted outside the CAT secure network. The CAT Public Website provides information about CAT, including links to SEC Rule 613, Participant and Industry Member Technical Specifications, FAQs, training materials, and CAT Help Desk contact information.

Web announcements will be made available on the public website (www.catnmsplan.com). You can also subscribe to receive email notifications regarding changes to the website. These announcements are used to post information related to the operation of CAT.

Contact help@finracat.com for any questions and/or feedback regarding this document.

Appendices

Appendix A: Change Release Management Process

Following publication of version 1.0, changes to this Industry Member Technical Specification will be released as follows:

- All proposed amendments to the Technical Specifications will be made in accordance with the CAT NMS Plan, including being approved or deemed approved (as applicable) by the Consolidated Audit Trail, LLC Operating Committee.
- Prior to the go-live date for any system changes set forth in the Technical Specifications:
  - A new Technical Specifications will be posted to the CAT Public Website, www.catnmsplan.com.
  - A notice will be posted on the CAT NMS Plan Public website with a summary of changes, the go-live date for the changes and links to relevant information.
  - One or more email alerts will be sent to the email address(es) on file for the CAT Reporters with a summary of changes set forth in the revised Technical Specifications, the go-live date for the changes and links to relevant information.
  - Industry Members will be permitted to perform testing of the revised Technical Specifications in advance of the go-live date for the changes. Information on such testing will be set forth in the notices and alerts described above.
  - As the go-live date approaches, Industry Members will be able to conduct testing and will receive support from the Plan Processor to prepare for production reporting using the revised Technical Specifications format. The revised Technical Specifications will include a summary list of changes as well as a table listing the specific areas of the document where the changes have been made.

Appendix B: Clock Synchronization Requirement

In previous sections, details are described regarding Order Events and data elements. Timestamp, as one of the required data elements for each order event, must be correctly reported by Industry Members at predefined granularity. This section provides an overview of the corresponding clock synchronization requirements applicable to Industry Members.

In order to comply with applicable requirements of Clock Synchronization and correctly record the Timestamp fields for order events. Industry Members are required to synchronize Business Clocks at a minimum to within 50 milliseconds of the time maintained by the National Institute of Standards and Technology (NIST) and to maintain such synchronization. Business Clocks that are solely used for Manual CAT events or for the time of allocation on Allocation Reports must be synchronized at a minimum to within a one second tolerance.

The tolerance includes:

- The difference between the NIST standard and a time provider's clock;
- Transmission delay from the source; and
- The amount of drift in the Participant's clock.

To ensure the accuracy of timestamps for Reportable Events, Industry Members must document and maintain their synchronization procedures for Business Clocks. Industry Members must keep a log of the time when they synchronize their Business Clocks and the results of the synchronization process. This log must include notice of any time a Business Clock drifts more than the applicable tolerances specified above. Such log must include results for a period of time of not less than five years ending on the then current date, or for the entire period for which the Industry Member has been required to comply with this Rule if less than five years. Industry Members must also certify their compliance with these clock synchronization requirements and report violations according to requirements established by the Operating Committee.

Any time provider and technology may be used for clock synchronization as long as the Business Clocks are in compliance with the accuracy requirement.

If additional details are needed, refer to Participants' applicable rules.

Appendix C: Representative Order Linkages

The CAT NMS Plan requires that customer orders be linked to representative orders created in firm accounts for the purpose of facilitating the execution of a customer order. This Appendix outlines reporting requirements for creating linkages between customer and representative orders.

C.1 Representative Order Reporting Requirements

C.1.1 Representative Order Reporting

Representative orders must be reported to CAT and marked as a representative order using the *representativeInd* field on New Order events.

The table below describes the *representativeInd* field values:

Table 86: representativeInd Field Values

Value	Definition	Explanation
Equities Values		
Y	Representative order, linkage required	This value must be used for representative orders where linkage is required as described below.
YS	Representative order, linkage required; details in supplement event	This value must be used if a firm provides aggregated order IDs on an order supplement event.
YP	Representative order, pricing guarantee, no linkage required	This value must be used when a firm receives a client order, guarantees an execution price (e.g., VWAP) and then originates proprietary orders in an effort to work the client order. Linkage may not be possible as the client order may not be filled from the proprietary orders if the guaranteed price is not achieved.
YE	Representative eligible - Order eligible for customer fills via an unlinked system (unlinked OMS-EMS or position fill workflow)	This value must be used to report proprietary orders that are originated as part of workflows where there is no systemic link between client orders and representative firm orders and which includes disparate OMS-EMS scenarios and position fill workflows. In such workflows, MENO events for any street side orders reported with a YE indicator are not required to be linked to a customer order, and the *aggregatedOrders* field must be blank. Firms should note that explicit linkage in workflows covered by YE may be required in future phases of CAT.
Options Values		
O	Options combined order, linkage required	This value must be used for options combined orders where linkage is required as described

Value	Definition	Explanation
		below.
OS	Options combined order, linkage required; details in a supplement event	This value must be used for options combined orders where a firm provides aggregated order IDs on an options order supplement event. (Phase 2d only)
Common Values – Applicable to both equities and options		
N	Not a representative order/options combined order, linkage is not applicable	The value of N must be provided on any order that a firm is able to explicitly determine is not a representative order or an options combined order.

C.1.2 Representative Order Linkages

Linkage is required between the representative street side order and the order being represented for both executed and unexecuted orders. Executed orders must also have a link between the Order Fulfillment event for the customer/client order and the representative order from which the fill came.

The following fields are used in the linkage process:

At the Order Level

- *representativeInd* indicates if an order was originated to represent a customer/client order.
- *aggregatedOrders* specifies the original order IDs and quantities being consolidated in the representative order.

At the Order Fulfillment Level

- *orderID* contains the firm side order that was used to fill the customer order.
- *fulfillmentLinkType* indicates whether there is order level and trade level linkage, only trade level linkage (e.g., fill from the pre-existing customer order), or why the firm side details are not present.
- FDID contains the firm account that was used to fill the customer order (only applicable when a *fulfillmentLinkType* of YE is populated).
- Linkage on the Order Fulfillment is indicated by the *fulfillmentLinkType.*

The following table describes the *fulfillmentLinkType* field values:

Table 87: fulfillmentLinkType Field Values

Value	Definition	Explanation
Equities Values		
Y	Representative order, linkage required	This value must be used for representative orders where linkage is required. If this value is used, the *orderID* field in the firm side details is required to be populated.
YS	Client order filled from multiple representative orders, linkage required; details provided in a supplement event	This value must be used when a client order is filled from multiple representative orders. If this value is used, *firmDetails* in the MEOF event must be blank, and the details of each representative order used to fill the client order must be provided in a MEOFS event.
YP	Fill from pre-existing Principal order, linkage required	This value must be used when a client order is filled from a proprietary order that was originated prior to receipt of the client order. For example, this value must be used when a client order is filled as a result of a Manning obligation and the proprietary order was not reported to CAT with the client order ID in the *aggregatedOrders* field.
YE	Representative eligible - Order eligible for customer fills via an unlinked system (unlinked OMS-EMS or position fill workflow)	This value must be used to report proprietary orders that are originated as part of workflows where there is no systemic link between client orders and representative firm orders and which includes disparate OMS-EMS scenarios and position fill workflows. In such workflows, MEOF events for any client orders that are filled from a representative order reported with a YE indicator are required to contain the FDID of the firm account from which the order was filled. In addition, the *accountHolderType* must be populated with the type of firm account. Firms should note that explicit linkage in workflows covered by YE may be required in future phases of CAT.
FOR	Fulfillment on an order routed to a foreign destination, no linkage required	This value must be used to report the fill of an order (customer or proprietary) that was routed to a foreign destination. When a value of FOR is populated, the *firmDetails* must be blank.
Options Values		
O	Combined options order, linkage required	This value must be used for options combined orders where linkage is required. If this value is used, the *orderID* field in the *firmDetails* is required to be populated.

C.2 Representative Order Marking and Linkage Requirements

C.2.1 Single Order Scenarios

The table below details requirements for both linkage and marking of a Representative Order in Single Order scenarios. Refer to the Data Dictionary for relevant field values. Refer to the CAT Industry Member Reporting Scenarios document for further information on how the relevant field values must be populated for each scenario.

Table 88: Requirements for Both Linkage and Marking of a Representative Order in Single Order Scenarios

Scenario Description	Is Linkage Required?		Is Rep Order Marking Required?	
	MENO	MEOF	MENO	MEOF
Riskless Principal Scenarios				
A. Single Prop Order, single fill	Yes	Yes	Yes	Yes
B. Single Prop Order, multiple fills, print for print	Yes	Yes	Yes	Yes
C. Single Prop Order, multiple fills, average price fill to customer	Yes	Yes	Yes	Yes
D. Multiple Prop Orders, multiple fills, print for print	Yes	Yes	Yes	Yes
E. Multiple Prop Orders, multiple fills, average price fill to customer	Yes	Yes	Yes	Yes
F. Fill of a customer order from a pre-existing principal order (Manning scenario)	No	Yes	No	Yes
Agency Scenarios - applies when a firm's order handling and/or reporting system does not allow for a route to be directly associated with the customer order or child order (with the same Order ID) and instead must generate/report a route from a separate order (with a different Order ID) created by the firm for the purpose of working the customer order.				
G. Single Rep Order, single fill	Yes	Yes	Yes	Yes
H. Single Rep Order, multiple fills, print for print to customer account	Yes	Yes	Yes	Yes
I. Single Rep Order, multiple fills, single average price booking to customer account; no print for print details available to customer account	Yes	Yes	Yes	Yes
J. Multiple Rep Orders, multiple fills, print for print	Yes	Yes	Yes	Yes
K. Multiple Prop Orders, multiple fills, average price fill to customer	Yes	Yes	Yes	Yes
Other Single Order Scenarios				
Q. Price Guarantee Scenarios (e.g., GVWAP, Stop Stock) - either single or aggregated orders	No	Yes	Yes	Yes
R. Single customer order filled from multiple representative orders	Yes	Yes	Yes	Yes

C.2.2 Net Trading Scenarios

The table below details requirements for both linkage and marking of a Representative Order in Net Trading scenarios. Refer to the Data Dictionary for relevant field values. Refer to the CAT Industry Member Reporting Scenarios document for further information on how the relevant field values must be populated for each scenario.

Table 89: Requirements for Both Linkage and Marking of a Representative Order in Net Trading Scenarios

Scenario Description	Is Linkage Required?		Is Rep Order Marking Required?	
	MENO	MEOT	MENO	MEOT
Principal Net Trading - assumed that all street side fills are guaranteed to go to the customer order				
L. Single Prop Order, multiple fills, print for print	Yes	Yes	Yes	N/A
M. Single Prop Order, multiple fills, print for print	Yes	Yes	Yes	N/A
N. Single Prop Order, multiple fills, average price fill to customer	Yes	Yes	Yes	N/A
O. Multiple Prop Orders, multiple fills, print for print	Yes	Yes	Yes	N/A
P. Multiple Prop Orders, multiple fills, average price fill to customer	Yes	Yes	Yes	N/A

C.2.3 Options Scenarios

The table below details Phase 2b and Phase 2d requirements for both linkage and marking of options combined orders. Refer to the Data Dictionary for relevant field values. Refer to the CAT Industry Member Reporting Scenarios document for further information on how the relevant field values must be populated for each scenario.

Table 90: Requirements for Both Linkage and Marking of Options Combined Orders

Scenario Description	Is Linkage Required?				Is Rep Order Marking Required?			
	MONO		MOOF		MONO		MOOF	
	Phase 2b	Phase 2d	Phase 2b	Phase 2d	Phase 2b	Phase 2d	Phase 2b	Phase 2d
A. Single combined order, multiple customer fills	No	Yes	No	Yes	Yes	Yes	Yes	Yes

C.2.4 Aggregated Order Scenarios

The table below details requirements for both linkage and marking of a Representative Order in Aggregated Order scenarios. Refer to the Data Dictionary for relevant field values. Refer to the CAT Industry Member Reporting Scenarios document for further information on how the relevant field values must be populated for each scenario.

Table 91: Requirements for Both Linkage and Marking of a Representative Order in Aggregated Order Scenarios

Scenario Description	Is Linkage Required?		Is Rep Order Marking Required?	
	MENO	MEOF	MENO	MEOF
A. Multiple customer orders, single aggregated order	Yes	Yes	Yes	Yes
B. Multiple customer orders, multiple aggregated orders	Yes	Yes	Yes	Yes
C. Multiple orders from one customer combined into one aggregated order in the customer's account	Yes	Yes	Yes	Yes
D. Multiple customer orders combined into a single aggregated order, Riskless Principal order created to represent the aggregated order	Yes	Yes	Yes	Yes

C.2.5 Representative Eligible Scenarios

The table below details requirements for both linkage and marking of an order that is "Representative Eligible". Refer to the Data Dictionary for relevant field values. Refer to the CAT Industry Member Reporting Scenarios document for further information on how the relevant field values must be populated for each scenario.

Table 92: Requirements for Both Linkage and Marking of a Representative Eligible Order

Scenario Description	Is Linkage Required?		Is Rep Order Marking Required?	
	MENO	MEOF	MENO	MEOF
A. There is no systemic link between customer orders and representative firm orders because of disparate OMS-EMS.	No*	No*	Yes	Yes
B. There is no systemic link between	No*	No*	Yes	Yes

Scenario Description	Is Linkage Required?		Is Rep Order Marking Required?	
	MENO	MEOF	MENO	MEOF
customer orders and representative firm orders because the customer orders were filled from an existing position.				

* Firms should note that explicit linkage may be required in future phases of CAT.

Appendix D: CAT Date Definitions and Reporting Guidelines

The following key date terms are used throughout the document for reporting instructions:

Table 93: Key Date Terms

Term	Definition	Usage
Event Timestamp	The date and time the event occurred. If electronic, required to be reported at the most granular level an Industry Member's order handling or execution systems use to capture data for the reported event, with at least millisecond granularity. If manual, required to be reported in increments of at least one second. If the order is immediately systematized, required to be reported with at least millisecond granularity.	*eventTimestamp* is a field defined on every CAT event. Used to assign the CAT Trading Day.
Event Date	The date portion of the Event Timestamp.	Part of all Route Linkage Keys and the TRF Linkage Key, used to link records within the Event Date. Required to be populated as the prefix of a *firmROEID* assignment.
File Generation Date	The date the file was generated or reported.	Used to guarantee uniqueness for a file across dates.
CAT Trading Day	Trading Day for Industry Members is defined as beginning immediately after 4:15:00PM and no fractions of a second Eastern Time on one trade date and ending at exactly 4:15:00PM and no fractions of a second Eastern Time on the next trading date. Weekends and holidays are not considered a Trading Day. Trading Days that close early end 15 minutes after the Market Close. For an event occurring on CAT Trading Day T, submissions are due to CAT by T+1 8:00 AM EST; Corrections are due by T+3 8:00 AM EST. Refer to Section 6.4 for more information. Examples demonstrating the calculation of CAT Trading Day, Reporting Due Date and Repair Due Date.	Used to calculate the submission due date, and corrections due date. **Submission Due Date:** CAT Trading Day + 1 8:00AM ET **Correction Due Date:** CAT Trading Day + 3 8:00AM ET
Trade Date	Trade Date for Industry Member is defined as beginning immediately after 23:59:59.999999 ET on Trade Date T - 1 and up to 23:59:59.999999 ET of the next Trade Date T. Weekends and holidays are not considered a Trade Date. An event occurring on a weekend or holiday	Used to calculate the due date of data delivered to Regulatory Users. **Due Date for Data and Associated Lifecycle Assignment delivery to Regulatory Users:** Trade Date + 5 8:00AM ET Used to calculate summaries and present feedback on the CAT Reporter Portal representing events for the same Trade

Term	Definition	Usage
	will be assigned to the next Trade Date.	Date, regardless of when the events were reported.
CAT Processing Date	Date representing the set of events reported for a CAT Trading Day. Events reported late to CAT will be assigned the CAT Processing Date reflective of when they were reported. For example, an event, that occurred at 2pm on T which is reported to CAT after T+1 8am and prior to T+2 8AM will be assigned CAT Processing Date of T+1.	Used to identify late submissions and late repairs. Used to calculate summaries and present feedback on the CAT Reporter Portal representing events reported on the CAT Processing Date, regardless of the Event Date.
Order Key Date	The date and time the OrderID was assigned.	*orderKeyDate* is a field defined on Order events, and other events which specify an Order Key. Used to support uniqueness of an Order Key. If time is not needed to guarantee a unique Order Key, the time portion may be populated with zeros.
Trade Key Date	The date and time the TradeID was assigned.	*tradeKeyDate* is a field defined on Trade events. Used to support uniqueness of a Trade Key. If time is not needed to guarantee a unique Trade Key, the time portion may be populated with zeros.
Quote Key Date	The date and time the QuoteID was assigned.	*quoteKeyDate* is a field defined on Quote events. Used to support uniqueness of a Quote Key. If time is not needed to guarantee a unique Quote Key, the time portion may be populated with zeros.
Fill Key Date	The date and time the FulfillmentID was assigned.	*fillKeyDate* is a field defined on Fulfillment events. Used to support uniqueness of a Fulfillment Key. If time is not needed to guarantee a unique fulfillment Key, the time portion may be populated with zeros.
Allocation Key Date	The date and time the AllocationID was assigned	*allocationKeyDate* is a field defined on Allocation events. Used to support uniqueness of an Allocation Key. If time is not needed to guarantee a unique Allocation Key, the time portion may be populated with zeros.

The following table illustrates the assignment of the Event Date, CAT Trading Day and the associated deadlines for Submission and Correction.

Table 94: Deadlines for Submission and Correction

#	Event Timestamp	Event Date	Holiday	CAT Trading Day	Submission Due	Corrections Due
1	Wed, 9/12/18 16:13:00 ET	9/12/18	n/a	9/12/18	9/13/18, 8:00 AM ET	9/17/18 8:00 AM ET
2	Wed, 9/12/18 16:16:00 ET	9/12/18	n/a	9/13/18	9/14/18, 8:00 AM ET	9/18/18 8:00 AM ET
3	Fri, 9/14/18 16:01:00 ET	9/14/18	n/a	9/14/18	9/17/18, 8:00 AM ET	9/19/18 8:00 AM ET
4	Fri, 9/14/18 16:45:00 ET	9/14/18	n/a	9/17/18	9/18/18, 8:00 AM ET	9/20/18 8:00 AM ET
5	Sat, 9/15/18 12:30:01 ET	9/15/18	n/a	9/17/18	9/18/18, 8:00 AM ET	9/20/18 8:00 AM ET
6	Mon, 9/17/18 10:30:05 ET	9/17/18	n/a	9/17/18	9/18/18, 8:00 AM ET	9/20/18 8:00 AM ET
7	Wed, 1/16/19 11:00 AM ET	1/16/19	1/21/19	1/16/19	1/17/19 8:00 AM ET	1/22/19 8:00 AM ET
8	Thur, 1/17/19 16:22 PM ET	1/17/19	1/21/19	1/18/19	1/22/19 8:00 AM ET	1/24/19 8:00 AM ET
9	Sat, 1/19/19 11:15 AM ET	1/19/19	1/21/19	1/22/19	1/23/19 8:00 AM ET	1/25/19 8:00 AM ET
10	Mon, 1/21/19 10:00 AM ET	1/21/19	1/21/19	1/22/19	1/23/19 8:00 AM ET	1/25/19 8:00 AM ET

Appendix E: Error Codes

This section defines the error and warning codes generated by CAT. Each code is defined to include the reason for the error or warning, including the associated fields. Warnings are not subject to further processing and firms are not required to take any action on them. Codes are assigned in ranges to represent similar types of errors within the same range, related by validation type and/or by linkage type. Codes are organized by the CAT Processing stages including:

- File Integrity
- Data Ingestion
- Linkage Discovery

E.1 File Integrity Errors

The table below contains error messages that are associated with file integrity. Errors are associated with files, filenames and metadata within Metadata files.

Table 95: File Integrity Errors

Error Code	Error Code Description	Explanation	Error/ Warning
1101	Missing Metadata File	Timeout waiting for associated metadata file. Data files for which an associated Metadata file is not received within 30 minutes of the receipt of the data file.	Warning
1103	Duplicate File	A file with the same base name was previously accepted by CAT.	Error
1104	Missing or Invalid CAT Submitter ID	CAT Submitter ID is missing or invalid.	Error
1105	Missing or Invalid CAT Reporter IMID	CAT Reporter IMID is missing or is not a valid Market Participant for the Generation Date.	Error
1106	Missing or Invalid File Generation Date	File Generation Date is missing or is not a valid date.	Error
1107	Metadata File Not Readable	Metadata file format is not readable as it is not in a valid JSON format or contains an incorrect delimiter.	Error
1108	File exceeds the supported size limit	File size exceeds the maximum uncompressed size of 100 GB via SFTP and 1GB via the CAT Reporter Portal.	Error
1109	Unauthorized CAT Submitter ID	CAT Submitter ID has not been authorized to submit for the CAT Reporter IMID. Verify that the CAT Submitter ID and CAT Reporter IMID in the file name have a transmitting relationship.	Error

Error Code	Error Code Description	Explanation	Error/ Warning
1110	Missing File Information	File information is not found in the Metadata File submission.	Error
1111	Missing or Invalid record count	The record count in the metadata file is missing or is a negative number, or a non-zero number for DEL file.	Error
1112	Mismatched Metadata File Format	The associated Metadata file is not in the same format as the data file submitted to CAT.	Error
1115	Missing or Invalid Compressed Hash	Compressed Hash in meta file is missing or invalid (e.g., doesn't match the data file).	Error
1116	Missing or Invalid File Version	File Version in Metadata file is missing or invalid.	Error
1120	Invalid File in Delete Instruction	The delete instruction is on a file that does not exist in CAT, contains event dates more than four days prior to the current processing date, or contains *actionType* other than 'NEW'.	Error
1121	Missing Metadata File	Timeout waiting for associated metadata file. Data files for which an associated Metadata file is not received within 2 hours of the receipt of the data file.	Error
1122	Missing Data File	Metadata file includes one or more data files that were not received prior to the receipt of the metadata file.	Error
1123	Invalid thirdParty	Third Party is invalid.	Error
1124	Unauthorized thirdParty	Third Party Reporting Agent has not been authorized to view feedback and error data for data submitted on behalf of the CAT Reporter. Verify that the CAT Reporter IMID and the thirdParty provided in the meta data file have an active reporting relationship.	Error
1126	Missing or Invalid doneForDay	doneForDay is missing or with invalid value.	Error
1127	Missing or Invalid Type	Type in the Metadata file is missing or invalid.	Error
1128	File exceeds maximum records allowed for Web upload	A single data file uploaded via the Reporter Portal must not contain greater than 100,000 records.	Error

E.2 Data Ingestion Errors

The table below contains error messages that are associated with Data Ingestion. Error codes are associated with specific fields within an event.

Table 96: CAT Event Ingestion Errors

Error Code	Error Code Description	Explanation	Warning/ Error
2001	Missing or Invalid *accountHolderType*	*accountHolderType* must be populated with one of the allowable values.	Error
2002	Missing or Invalid *actionType*	*actionType* must be populated with one of the allowable values.	Error
2003	Missing or Invalid *affiliateFlag*	*affiliateFlag* must be populated with one of the allowable values.	Error
2004	Missing or Invalid *aggregatedOrders*	If populated, *aggregatedOrders* must be in the correct format.	Error
2005	Missing or Invalid *askPrice*	When required, *askPrice* must be in the correct format. Required when *askQty* is populated.	Error
2006	Missing or Invalid *askQty*	When required, *askQty* must be in the correct format. Required *askPrice* is populated.	Error
2007	Missing or Invalid *atsDisplayInd*	When required, *atsDisplayInd* must be one of the allowable values.	Error
2008	Missing or Invalid *atsOrderType*	When required, *atsOrderType* must be equal to a unique identifier representing the specific order type provided to CAT by the ATS.	Error
2009	Missing or Invalid *bidPrice*	When required, *bidPrice* must be in the correct format; must be populated if *bidQty* is populated.	Error
2010	Missing or Invalid *bidQty*	When required, *bidQty* must be in the correct format; must be populated if *bidPrice* is populated.	Error
2011	Invalid *CATReporterIMID*	If populated, *CATReporterIMID* must be valid for the Event Date and must equal the *CATReporterIMID* in the filename.	Error
2012	Missing or Invalid *cancelQty*	*cancelQty* must be populated in the correct format.	Error
2013	Missing or Invalid *cancelFlag*	*cancelFlag* must be populated in the correct format.	Error
2014	Missing or Invalid *cancelTimestamp*	When required, *cancelTimestamp* must be in the correct format; must be populated if *cancelFlag* is True.	Error
2015	Missing or Invalid *capacity*	*capacity* must be populated with one of the allowable values.	Error
2017	Missing or Invalid *custDspIntrFlag*	*custDspIntrFlag* must be populated with one of the allowable values.	Error
2018	Missing or Invalid *deptType*	*deptType* must be populated with one of the allowable values.	Error

Error Code	Error Code Description	Explanation	Warning/ Error
2019	Combination of *destination* and *destinationType* is Invalid	For Route Events, the following *destinationType* and *destination* combinations are required: • If *destinationType* is F or O, the *destination* must be the IMID of an Industry Member. Must be valid for the Event Date. • If *destinationType* is E, the *destination* must be one of the allowable values.	Error
2020	Missing or Invalid *destinationType*	*destinationType* must be populated with one of the allowable values.	Error
2021	Missing or Invalid *displayPrice*	When required, *displayPrice* must be in the correct format.	Error
2022	Missing or Invalid *displayQty*	When required, *displayQty* must be in the correct format.	Error
2023	Missing or Invalid *dupROIDCond*	*dupROIDCond* must be populated with one of the allowable values.	Error
2024	Missing or Invalid *electronicDupFlag*	*electronicDupFlag* must be populated and is one of the allowable values.	Error
2025	Invalid *electronicTimestamp*	*electronicTimestamp* must be in the correct format.	Error
2026	Missing or Invalid *errorROEID*	*errorROEID* must be blank when the *actionType* is 'NEW'; must be populated when *actionType* is 'RPR'.	Error
2027	Missing or Invalid *eventTimestamp*	*eventTimestamp* must be in the correct format. If *manualFlag* is true, *eventTimestamp* must be reported in increments of at least one second. If *manualFlag* is false, *eventTimestamp* must be reported in increments of at least milliseconds.	Error
2028	Combination of *exchOriginCode and destinationType* is invalid	For Option Order Route events, the following *exchOriginCode* and *destinationType* combination are required: • If *destinationType* is not E, *exchOriginCode* must be blank. • If *destinationType* is E, *exchOriginCode* must be populated.	Error
2030	Missing or Invalid *fillKeyDate*	*fillKeyDate* must be populated in the correct format.	Error
2031	Missing or Invalid *firmDesignatedID*	When required, *firmDesignatedID* must be in the correct format and unique among all identifiers from any given Industry Member for each business date.	Error
2032	Missing or Invalid *firmROEID*	*firmROEID* must be populated and in the correct format.	Error
2033	Invalid Event Date in the *firmROEID*	The Event Date portion of the *firmROEID* must be in the correct format and must equal the date portion of *eventTimestamp*.	Error
2034	Missing or Invalid *fulfillmentID*	*fulfillmentID* must be populated in the correct format.	Error
2035	Missing or Invalid *fulfillmentLinkType*	*fulfillmentLinkType* must be populated with one of the allowable values.	Error

Error Code	Error Code Description	Explanation	Warning/ Error
2036	Invalid *handlingInstructions*	*handlingInstructions* must be in the correct format and must include allowable values. Name and value must be provided when applicable.	Error
2037	Invalid *infoBarrierID*	*infoBarrierID* must be in the correct format.	Error
2038	Missing or Invalid *initiator*	*initiator* must be populated with one of the allowable values.	Error
2039	Missing or Invalid *isoInd*	When required, *isoInd* value must be one of the allowable values.	Error
2040	Missing or Invalid *leavesQty*	When required, *leavesQty* must be in the correct format, and must be less than or equal to quantity.	Error
2041	Missing or Invalid *manualFlag*	*manualFlag* must be one of the allowable values.	Error
2042	Missing or Invalid *manualOrderKeyDate*	*manualOrderKeyDate* must be in the correct format; required if *manualOrderID* is populated.	Error
2043	Missing or Invalid *manualOrderID*	*manualOrderID* must be in the correct format.	Error
2044	Missing or Invalid *marketCenterID*	When required, *marketCenterID* must be one of the allowable values.	Error
2045	Invalid *minQty*	*minQty* must be in the correct format, must be greater than zero.	Error
2046	Invalid *mpStatusCode*	*mpStatusCode* must be one of the allowable values.	Error
2047	Missing or Invalid *nbboSource*	When required, *nbboSource* must be one of the allowable values.	Error
2048	Missing or Invalid *nbboTimestamp*	When required, *nbboTimestamp* must be in the correct format.	Error
2049	Missing or Invalid *nbbPrice*	When required, *nbbPrice* must be in the correct format.	Error
2050	Missing or Invalid *nbbQty*	When required, *nbbQty* must be in the correct format.	Error
2051	Missing or Invalid *nboPrice*	When required, *nboPrice* must be in the correct format.	Error
2052	Missing or Invalid *nboQty*	When required, *nboQty* must be in the correct format.	Error
2053	Missing or Invalid *negotiatedTradeFlag*	*negotiatedTradeFlag* must be populated and one of the allowable values.	Error
2054	Missing or Invalid *sideDetailsInd*	*sideDetailsInd* must be populated with one of the allowable values.	Error
2055	Invalid *nextUnlinked*	*nextUnlinked* must be one of the allowable values.	Error
2056	Missing or Invalid *onlyOneQuoteFlag*	*onlyOneQuoteFlag* must be populated with one of the allowable values if required to populate.	Error
2057	Missing or Invalid *openCloseIndicator*	When required, *openCloseIndicator* must be one of the allowable values.	Error
2058	Missing or Invalid *optionID*	*optionID* must be populated in the correct format.	Error
2060	*optionID* not effective on Event Date	*optionID* is not effective on the event date.	Error

Error Code	Error Code Description	Explanation	Warning/ Error
2061	Missing or Invalid *orderID*	*orderID* must be populated in the correct format.	Error
2062	Missing or Invalid *orderType*	*orderType* must be populated one of the allowable values.	Error
2063	Missing or Invalid *orderKeyDate*	*orderKeyDate* must be populated and in the correct format.	Error
2064	Missing or Invalid *originatingIMID*	If populated, *originatingIMID* must be in the correct format on all secondary events. Must be valid for the Event Date.	Error
2065	Missing or Invalid *parentOrderID*	*parentOrderID* must be populated in the correct format.	Error
2066	Missing or Invalid *parentOrderKeyDate*	*parentOrderKeyDate* must be populated in the correct format.	Error
2067	Missing or Invalid *price*	*price* must be in the correct format.	Error
2068	Missing or Invalid *priorFillKeyDate*	When required, *priorFillKeyDate* must be populated and in the correct format.	Error
2070	Missing or Invalid *priorFulfillmentID*	When required, *priorFulfillmentID* must be in the correct format.	Error
2071	Missing or Invalid *priorOrderID*	When required, *priorOrderID* must be populated in the correct format.	Error
2072	Missing or Invalid *priorOrderKeyDate*	When required, *priorOrderKeyDate* must be populated in the correct format.	Error
2073	Missing or Invalid *priorQuoteKeyDate*	When required, *priorQuoteKeyDate* must be populated in the correct format.	Error
2074	Missing or Invalid *priorQuoteID*	When required, *priorQuoteID* must be populated and must be in the correct format.	Error
2075	Invalid *priorUnlinked*	*priorUnlinked* value must be one of the allowable values.	Error
2076	Missing or Invalid *quantity*	*quantity* must be in the correct format.	Error
2077	Missing or Invalid *quoteID*	*quoteID* must be populated in the correct format.	Error
2078	Missing or Invalid *quoteKeyDate*	*quoteKeyDate* must be populated and in the correct format.	Error
2080	Missing or Invalid *quoteRejectedFlag*	When required, *quoteRejectedFlag* must be populated in one of the allowable values.	Error
2081	Missing or Invalid *receivedQuoteID*	*receivedQuoteID* must be populated in the correct format.	Error
2082	Missing or Invalid *receiverIMID*	*receiverIMID* must be populated in the correct format. Must be valid for the Event Date.	Error
2083	Missing or Invalid *receivingDeskType*	*receivingDeskType* must be populated in one of the allowable values.	Error
2084	Invalid *reportingExceptionCode*	*reportingExceptionCode* must be one of the allowable values.	Error
2085	Missing or Invalid *representativeInd*	*representativeInd* must be populated in one of the allowable values.	Error
2086	Invalid *routedOrderID*	*routedOrderID* must be populated in the correct	Error

Error Code	Error Code Description	Explanation	Warning/ Error
		format.	
2087	Invalid *routedQuoteID*	When required, *routedQuoteID* must be populated in the correct format.	Error
2088	Invalid *routeRejectedFlag*	*routeRejectedFlag* must be one of the allowable values.	Error
2089	Combination of *senderType* and *senderIMID* is invalid	If *senderType* = F or O, *senderIMID* is the IMID of an Industry Member. If *senderType* = E, *senderIMID* must be one of the allowable values.	Error
2090	Missing or Invalid *senderType*	When required, *senderType* must be one of the allowable values.	Error
2091	Missing or Invalid *senderIMID*	When required, *senderIMID* must be populated in the correct format. Must be valid for the Event Date.	Error
2092	Missing or Invalid *seqNum*	When required, *seqNum* must be in the correct format.	Error
2093	Missing or Invalid *session*	When required, *session* must be populated. Required when *destinationType* is E.	Error
2095	Missing or Invalid *side*	*side* must be populated in one of the allowable values.	Error
2096	Missing or Invalid *symbol*	*symbol* must be populated in the correct format.	Error
2098	*symbol* not effective on Event Date	*symbol* is not effective on the event date.	Error
2099	*symbol* does not match listing market format	For exchange listed securities, the *symbol* format must match the format published by the primary listing market.	Error
2100	Invalid *tapeTradeID*	If populated, *tapeTradeID* must be in the correct format.	Error
2101	Missing or Invalid *timeInForce*	*timeInForce* value must be populated in the correct format. Name and value must be provided when applicable.	Error
2102	Missing or Invalid *tradeID*	*tradeID* must be populated in the correct format.	Error
2103	Missing or Invalid *tradeKeyDate*	*tradeKeyDate* must be populated in the correct format.	Error
2104	Missing or Invalid *tradingSession*	*tradingSession* must be populated in one of the allowable values.	Error
2105	Missing or Invalid *type*	For each event type, *type* must be populated and one of the allowable values.	Error
2106	Missing or Invalid *unsolicitedInd*	*unsolicitedInd* must be populated in one of the allowable values.	Error
2107	Invalid *workingPrice*	*workingPrice* must be blank if *atsDisplayInd* is blank. When required, *workingPrice* must be populated in the correct format if *atsDisplayInd* is populated. If no *workingPrice* is applicable, it must be 0.	Error

Error Code	Error Code Description	Explanation	Warning/ Error
2108	Missing or Invalid *buyDetails*	If *sideDetailsInd* = BUY, *buyDetails* must be populated. If *sideDetailsInd* = SELL, *buyDetails* must not be populated.	Error
2109	Missing or Invalid *orderID* in *buyDetails*	When required, *orderID* must be populated in the correct format.	Error
2110	Missing or Invalid *orderKeyDate* in *buyDetails*	When required, *orderKeyDate* must be populated in the correct format.	Error
2111	Missing or Invalid *side* in *buyDetails*	*side* must be populated in the correct format.	Error
2112	Missing or Invalid *firmDesignatedID* in *buyDetails*	When required, *firmDesignatedID* must be populated in the correct format.	Error
2113	Missing or Invalid *accountHolderType* in *buyDetails*	When required, *accountHolderType* must be one of the allowable values.	Error
2114	Invalid combination of *firmDesignatedID* and *orderID* in *buyDetails*	When required, the combination of *firmDesignatedID* and *orderID* in *buyDetails* must be valid. See Table 35: Trade Side Details for more details.	Error
2115	Missing or Invalid *sellDetails*	If *sideDetailsInd* = SELL, *sellDetails* must be populated. If *sideDetailsInd* = BUY, *sellDetails* must not be populated.	Error
2116	Missing or Invalid *orderID* in *sellDetails*	When required, *orderID* must be populated in the correct format.	Error
2117	Missing or Invalid *orderKeyDate* in *sellDetails*	When required, *orderKeyDate* must be populated in the correct format.	Error
2118	Missing or Invalid *side* in *sellDetails*	*side* must be populated in the correct format.	Error
2119	Missing or Invalid *firmDesignatedID* in *sellDetails*	When required, *firmDesignatedID* must be populated in the correct format.	Error
2120	Missing or Invalid *accountHolderType* in *sellDetails*	When required, *accountHolderType* must be populated in the correct format.	Error
2121	Missing or Invalid *orderID* in *clientDetails*	*orderID* must be populated in the correct format.	Error
2122	Missing or Invalid *orderKeyDate* in *clientDetails*	*orderKeyDate* must be populated in the correct format.	Error
2123	Missing or Invalid *side* in *clientDetails*	*side* must be populated in the correct format.	Error
2124	Invalid *firmDesignatedID* in *clientDetails*	*firmDesignatedID* must be blank.	Error
2125	Invalid	*accountHolderType* must be blank.	Error

Error Code	Error Code Description	Explanation	Warning/ Error
	accountHolderType in *clientDetails*		
2126	Missing or Invalid *orderID* in *firmDetails*	When required, *orderID* must be populated and in the correct format.	Error
2127	Missing or Invalid *orderKeyDate* in *firmDetails*	When required, *orderKeyDate* must be populated in the correct format.	Error
2128	Missing or Invalid *side* in *firmDetails*	*side* must be populated and in the correct format.	Error
2129	Missing or Invalid *firmDesignatedID* in *firmDetails*	When required, *firmDesignatedID* must be in the correct format.	Error
2130	Missing or Invalid *accountHolderType* in *firmDetails*	When required, *accountHolderType* must be one of the allowable values.	Error
2132	Record exceeds maximum length	Record length must not exceed the maximum length for each record.	Error
2133	Additional fields are specified in the record but are not defined for this CAT event type	Refer to Sections 3.3.3 & 4.15 for permitted fields for each CAT event type.	Error
2134	Invalid JSON or CSV format	The record is not represented in a valid format as specified in Section 2.5 Data Types.	Error
2136	Invalid Alphanumeric Character	A field value in the record contains a delimiter or a non-allowable ASCII character	Error
2137	Invalid correction, deletion or a repair	*actionType* 'COR', 'RPR' or 'DEL' is received for a *firmROEID* or an *errorROEID* that does not exist in CAT.	Error
2139	*eventTimestamp* is greater than the current date and time	The *eventTimestamp* is greater than system date.	Error
2142	Invalid combination of *aggregatedOrders* and *representativeInd*	The combination of *aggregatedOrders* and *representativeInd* must be valid. See Appendix C for more details on reporting representative and combined orders.	Error
2143	Invalid combination of *electronicDupFlag* and *manualFlag*	The combination of *electronicDupFlag* and *manualFlag* must be valid. See Section 3.2.2 for more details.	Error
2144	Invalid combination of *electronicTimestamp* and *manualFlag*	The combination of *electronicTimestamp* and *manualFlag* must be valid. See Section 3.2.2 for more details.	Error
2145	Invalid combination of *fulfillmentLinkType* and *firmDetails*	The combination of *fulfillmentLinkType* and *firmDetails* must be valid. See Appendix C for more details on reporting representative and combined orders.	Error
2146	Missing or Invalid *clientDetails*	*clientDetails* must be populated in the correct format.	Error
2147	Missing or Invalid	*firmDetails* must be populated in the correct format.	Error

Error Code	Error Code Description	Explanation	Warning/ Error
	firmDetails		
2148	Invalid combination of *firmDesignatedID* and *orderID* in sellDetails	When required, the combination of *firmDesignatedID and orderID in sellDetails* must be valid. See Table 35: Trade Side Details for more details.	Error
2149	*CATReporterIMID* and *senderIMID* must be assigned to the same firm	*CATReporterIMID* and *senderIMID* must be assigned to the same firm.	Error
2150	*CATReporterIMID* and *receiverIMID* must be assigned to the same firm	*CATReporterIMID* and *receiverIMID* must be assigned to the same firm.	Error
2151	Firm provided record count in meta file does not equal row count in the data file	The record count in the data file as calculated by CAT does not match the record count provided in the metadata file.	Error
2153	Data File is not Readable	Data file format is not readable as it contains an invalid compression format.	Error
2154	Invalid *quoteWantedInd*	When required, *quoteWantedInd* must be populated in one of the allowable values.	Error
2156	Invalid *reservedForFutureUse*	*reservedForFutureUse* must not be populated.	Error
2157	Invalid *quantity* in *buyDetails*	If populated, *quantity* in *buyDetails* must be in the correct format.	Error
2158	Invalid *originatingIMID* in *buyDetails*	If populated, *originatingIMID* in *buyDetails* must be in the correct format.	Error
2159	Invalid *quantity* in *sellDetails*	If populated, *quantity* in *sellDetails* must be in the correct format.	Error
2160	Invalid *originatingIMID* in *sellDetails*	If populated, *originatingIMID* in *sellDetails* must be in the correct format.	Error
2161	Invalid *quantity* in *clientDetails*	If populated, *quantity* in *clientDetails* must be in the correct format.	Error
2162	Invalid *originatingIMID* in *clientDetails*	If populated, *originatingIMID* in *clientDetails* must be in the correct format.	Error
2163	Invalid *quantity* in *firmDetails*	If populated, *quantity* in *firmDetails* must be in the correct format.	Error
2164	Invalid *originatingIMID* in *firmDetails*	If populated, *originatingIMID* in *firmDetails* must be in the correct format	Error
2165	Missing or Invalid *orderID* in *aggregatedOrders*	When required, *orderID* in *aggregatedOrders* must be populated in the correct format.	Error
2166	Missing or Invalid *orderKeyDate* in *aggregatedOrders*	When required, *orderKeyDate* in *aggregatedOrders* must be populated in the correct format.	Error
2167	Invalid *quantity* in *aggregatedOrders*	If populated, *quantity* in *aggregatedOrders* must be in the correct format.	Error
2168	Invalid *originatingIMID* in *aggregatedOrders*	If populated, *originatingIMID* in *aggregatedOrders* must be in correct format.	Error
2169	Invalid combination of	The combination of *reportingExceptionCode* and	Error

Error Code	Error Code Description	Explanation	Warning/ Error
	reportingExceptionCode and *tapeTradeID*	*tapeTradeID* must be valid. Refer to Section 4.12. for more details.	
2170	Missing or Invalid *allocationKeyDate*	*allocationKeyDate* must be populated in the correct format.	Error
2171	Missing or Invalid *allocationID*	*allocationID* must be populated in the correct format.	Error
2172	Missing or Invalid *priorAllocationKeyDate*	When required, *priorAllocationKeyDate* must be populated in the correct format.	Error
2173	Missing or Invalid *priorAllocationID*	When required, *priorAllocationID* must be populated and must be in the correct format.	Error
2174	Missing or Invalid *custType*	If populated, *custType* must be populated with an allowable value.	Error
2175	Missing or Invalid *institutionFlag*	*institutionFlag* must be populated with one of the allowable values	Error
2176	Missing or Invalid *tradeDate*	*tradeDate* must be populated in the correct format.	Error
2177	Missing or Invalid *settlementDate*	*settlementDate* must be populated in the correct format.	Error
2178	Missing or Invalid *allocationType*	*allocationType* must be populated with one of the allowable values	Error
2179	Missing or Invalid *DVPCustodianID*	When required, *DVPCustodianID* must be populated in the correct format.	Error
2180	Invalid *correspondentCRD*	If populated, *correspondentCRD* must be populated in the correct format.	Error
2181	Invalid *newOrderFDID*	If populated, *newOrderFDID* must be populated in the correct format.	Error
2182	Invalid *allocationInstructionTime*	If populated, *allocationInstructionTime* must be in the correct format.	Error
2183	Missing or Invalid *quotingIDQS*	When required, *quotingIDQS* must be populated in the correct format.	Error
2184	Invalid combination of *clearingFirm* and *reportingExceptionCode*	Combination of *clearingFirm* and *reportingExceptionCode* must be valid.	Error
2185	Invalid combination of *counterparty* and *reportingExceptionCode*	Combination of *counterparty* and *reportingExceptionCode* must be valid.	Error
2186	Missing or Invalid *solicitationFlag*	*solicitationFlag* must be populated with one of the allowable values	Error
2187	Invalid *RFQID*	If populated, *RFQID* must be in the correct format.	Error
2188	Missing or Invalid *unpricedInd*	*unpricedInd* must be populated with one of the allowable values	Error
2189	Invalid combination of *senderIMID* and *destination* or *receiverIMID*	On Order Route or New Quote events, *senderIMID* must not equal *destination*. On Order Accepted, Order Modified, and Quote Received events, *senderIMID* must not equal *receiverIMID.*	Error

Error Code	Error Code Description	Explanation	Warning/ Error
2190	Invalid combination of *orderID* and *parentOrderID* or *priorOrderID*	When populated, the combination of *parentOrderID* and *parentOrderKeyDate* or *priorOrderID* and *priorOrderKeyDate* must not equal the combination of *orderID* and *orderKeyDate*.	Error
2191	Invalid combination of *orderID* and *orderID* in *aggregatedOrders*	When populated, the combination of *orderID* and *orderKeyDate* must not equal any combination of *orderID* and *orderKeyDate* within the *aggregatedOrders* field.	Error
2192	Invalid *triggerPrice*	If populated, *triggerPrice* must be in the correct format.	Error
2801		*Reserved*	
2802		*Reserved*	
2803		*Reserved*	
2999	Exceeds Max Error Limit	The record contains more than 8 errors.	Error

E.3 Linkage Discovery Errors

Linkage Discovery errors are generated by performing event comparisons that result in the identification of duplicates, out of sequence events and unlinked events. To identify duplicate Linkage Keys, the CAT Processor will ensure the *CAT Linkage Keys*, as defined in Section 2.6.1, are not repeated.

Unlinked error codes are assigned based on a processing order when determining the reason for an unlinked event. The process begins with the check associated with the codes having the lowest sequence value. When the “Multiple Fields did not Match” reason is assigned, it is because a determination could not be made. In such cases, it is possible that the unlink reason is because the other party’s event was not reported or had a processing error which prevented the event from participating in Linkage Discovery.

In cases when linkage did not occur between venues, separate error codes will be assigned to the CAT Reporter whose record did not link and the CAT Reporter that was named. Error Code Descriptions that begin with “Named” indicate when the CAT Reporter was named in a record submitted by another CAT Reporter (Industry Member, Exchange or TRF/ADF/ORF) that is unlinked.

The below table contains error messages that are associated with Linkage Discovery Errors.

Table 97: Intra-Linkage Errors

Error Code	Error Code Description	Explanation	Warning/ Error
3002	Duplicate *firmROEID* on same day	Duplicate *firmROEID* received by CAT; must be unique for the Event Date and CAT Reporter IMID.	Error

Error Code	Error Code Description	Explanation	Warning/ Error
3003	Duplicate *firmROEID* on a prior processing day	One or more events were reported with the same *firmROEID* as an event reported on a previous day. All events received on the current CAT Processing Date associated with the duplicate *firmROEID* will be rejected. The events received on a previous day associated with the duplicate *firmROEID* will not be rejected.	Error
3004	Duplicate Order Key reported on same day	More than one primary order event and/or secondary order event which reassigned an Order Key was reported with the same Order Key on the current CAT Processing Date. All events associated with the duplicate Order Key will be rejected.	Error
3007	Duplicate Order Key reported on a prior processing day	One or more primary order events and/or secondary order event which reassigned an Order Key were reported that have the same Order Key as an order reported on a previous day. All events received on the current CAT Processing Date associated with the duplicate Order Key will be rejected. The events received on a previous day associated with the duplicate Order Key will not be rejected.	Error
3010	Duplicate Trade Key reported on same day	More than one Trade event was reported with the same Trade Key on the current CAT Processing Date. All events associated with the duplicate Trade Key will be rejected.	Error
3011	Duplicate Trade Key reported on prior processing day	One or more Trade events were reported with the same Trade Key as an event reported on a previous day. All events received on the current CAT Processing Date with a duplicate Trade Key will be rejected. The events received on a previous day associated with the duplicate Trade Key will not be rejected.	Error
3012	Duplicate Fulfillment Key reported on same day	More than one Order Fulfillment events or Fulfillment Amendment events which assigned a new Fulfillment key were reported with the same Fulfillment Key on the current CAT Processing Date. All events with a duplicate Fulfillment Key will be rejected.	Error
3015	Duplicate Fulfillment Key reported on prior processing day	One or more Order Fulfillment events or Fulfillment Amendment events which assigned a new Fulfillment key were reported with the same Fulfillment Key as an event reported on a previous day. All events received on the current CAT Processing Date associated with the duplicate Fulfillment Key will be rejected. The events received on a previous day with a duplicate Fulfillment Key will not be rejected.	Error
3016	Duplicate Quote Key reported on same day	More than one New Quote event were reported with the same Quote Key on the current CAT Processing Date. All events associated with the duplicate Quote Key will be rejected.	Error
3017	Duplicate Quote Key reported on prior processing day	One or more New Quote events were reported that have the same Quote Key as an event reported on a previous day. All events received on the current CAT Processing Date associated with the duplicate Quote Key will be rejected. The events received on a previous day associated with the duplicate Quote	Error

Error Code	Error Code Description	Explanation	Warning/ Error
		Key will not be rejected.	
3020	Duplicate Allocation Key reported on same day	More than one Post-Trade Allocation event or Amended Allocation event which assigned a new Allocation Key were reported with the same Allocation Key on the current CAT Processing Date. All events associated with the duplicate Allocation Key will be rejected.	Error
3021	Duplicate Allocation Key reported on prior processing day	One or more Post-Trade Allocation events or Amended Allocation events which assigned a new Allocation Key were reported that have the same Allocation Key as an event reported on a previous day. All events received on the current CAT Processing Date associated with the duplicate Allocation Key will be rejected. The events received on a previous day associated with the duplicate Allocation Key will not be rejected.	Error
3501	Secondary Event – Order Key, Trade Key, Quote Key, Fulfillment Key, or Allocation Key not found	The Secondary Event (as defined in Appendix F) references an Order Key, Trade Key, Quote Key, Fulfillment Key, or Allocation Key that does not exist in CAT because it was not reported or was rejected.	Error
3502	Trade Event –Order not found	The Trade Event side details reference an Order Key that does not exist in CAT because it was not reported or was rejected.	Error
3503	Fulfillment Event –Order not found	The Fulfillment Event side details reference an Order Key that does not exist in CAT because it was not reported or was rejected.	Error
3504	Aggregated Order – Client order not found	Aggregated order references an Order Key that does not exist in CAT because it was not reported or was rejected.	Error
3505	Electronic Duplicate Order – Manual order not found	Electronic duplicate order references a Manual Order Key that does not exist in CAT because it was not reported or was rejected.	Error
3601	Intrafirm Out of Sequence Event	*eventTimestamp* of a Secondary Event (as defined in Appendix F) is prior to the eventTimestamp of the related Primary Event (as defined in Appendix F). When comparing *eventTimestamp*, the Clock Drift allowance as specified in Appendix B must be considered.	Error
3602	Mismatched eventTimestamp on the Order/Modification/Trade supplement event	*eventTimestamp* on the Order/Modification/Trade supplement event did not match the *eventTimestamp* on the corresponding Order/Modification/Trade event. Timestamp compared up to milliseconds.	Error

Table 98: Trade Linkage Error Codes (Reported to CAT)

Error Code	Error Code Description	Explanation	Warning/ Error
4003	Matching *tapeTradeID*	The *tapeTradeID* reported on a Trade event did not match the unique identifier (e.g., Branch Sequence	Error

Error Code	Error Code Description	Explanation	Warning/ Error
	cannot be found	Number, Compliance ID) provided on the TRF/ADF/ORF Trade Report.	
4005	*marketCenterID* cannot be found	The *marketCenterID* reported on the Trade event did not match the Market Center ID on the TRF/ADF/ORF trade report.	Error
4007	*symbol* cannot be found	The *symbol* reported on the Trade event did not match the symbol on the TRF/ADF/ORF trade report.	Error
4009	Multiple fields did not match	A TRF/ADF/ORF Trade Report with a matching unique identifier (i.e. Branch Sequence Number) was found; however, the *symbol, CATReporterIMID* or a combination of fields reported on the Trade event did not match the corresponding symbol or reporting/contra firm on the TRF/ADF/ORF Trade Report.	Error
4011	Duplicate TRF Linkage Key	Unlinked due to duplicated TRF Linkage Key.	Error
4013	*CATReporterIMID* cannot be found	The *CATReporterIMID* used to report the Trade event did not match the Reporting Execution or Contra Execution MPID on the TRF/ADF/ORF trade report.	Error

Table 99: Trade Linkage Error Codes (Reported to TRF/ADF/ORF)

Error Code	Error Code Description	Explanation	Warning/ Error
5004	Named - Matching *tapeTradeID* cannot be found	Named on a TRF/ADF/ORF Trade Report, but the *tapeTradeID* on the Trade event did not match the unique identifier (e.g., Branch Sequence Number, Compliance ID) on the corresponding TRF/ADF/ORF Trade Report.	Error
5006	Named – *marketCenterID* cannot be found	Named on a TRF/ADF/ORF Trade Report, but the *marketCenterID* reported on the Trade event did not match the Market Center ID on the corresponding Trade event.	Error
5008	Named - *symbol* cannot be found	Named on a TRF/ADF/ORF Trade Report, but the *symbol* reported on the Trade event did not match the symbol on the TRF/ADF/ORF Trade Report.	Error
5010	Named - Multiple fields did not match	Named on a TRF/ADF/ORF Trade Report and a matching *tapeTradeID* on the CAT Trade Event was found; however, the *symbol, CATReporterIMID* or a combination of fields reported on the Trade event did not match the corresponding symbol or reporting/contra firm on the TRF/ADF/ORF Trade Report.	Error
5014	Named - *CATReporterIMID* cannot be found	Named on a TRF/ADF/ORF Trade Report, but the *CATReporterIMID* reported on the Trade event did not match the Reporting Execution or Contra Execution MPID on the corresponding Trade Report.	Error

Table 100: Exchange Linkage Error Codes (Reported to CAT)

Error Code	Error Code Description	Explanation	Warning/ Error
6003	Matching *routedOrderID* cannot be found	The *routedOrderID* reported on the Order Route or Order Accepted event does not match to a corresponding *routedOrderID* on the exchange order.	Error
6005	*senderIMID* did not match	A matching *routedOrderID* was identified on the exchange order; however, the *senderIMID* on the Order Route or Order Accepted event did not match the corresponding *routingParty* on the exchange order.	Error
6007	*symbol/optionID* did not match	A matching *routedOrderID* was identified in the exchange order; however, the *symbol/optionID* on the Order Route or Order Accepted event did not match the corresponding symbol/optionID on the exchange order.	Error
6009	*session* did not match	A matching *routedOrderID* was identified on the exchange order; however, the *session* on the Order Route event did not match the *session* on the exchange order.	Error
6011	Multiple fields did not match	A matching *routedOrderID* was identified on the exchange order; however, the *symbol/optionID, senderIMID,* or a combination of fields reported on the Order Route or Order Accepted event did not match the corresponding *symbol/optionID, routingParty* or a combination of fields on the exchange order.	Error
6013	Duplicate Route Linkage Key on Route to Exchange	Unlinked due to duplicated Route Linkage Key on a Route to an Exchange.	Error
6015	Duplicate Route Linkage Key on Order Accepted or Modification from Exchange	Unlinked due to duplicated Route Linkage Key on an Order Accepted or Modification received from an Exchange.	Error
6017	*destination* did not match	A matching *routedOrderID* was identified on the exchange order; however, the *destination* on the Order Route event did not match the exchange ID on the exchange order.	Error
6019	*receiverIMID* did not match	A matching *routedOrderID* was identified on the exchange order; however, the *receiverIMID* on the Order Accepted event did not match the exchange ID on the exchange order	Error

Table 101: Exchange Linkage Error Codes (Reported by Exchange)

Error Code	Error Code Description	Explanation	Warning/ Error
7004	Named - Matching *routedOrderID* cannot be found	Named on an exchange order, but the *routedOrderID* reported on the Order Route or Order Accepted event does not match to a corresponding *routedOrderID* on the exchange order.	Error

Error Code	Error Code Description	Explanation	Warning/ Error
7006	Named - *senderIMID* did not match	Named on an exchange order with a matching *routedOrderID* identified on the Order Route or Order Accepted event; however, the *senderIMID* on the Order Route or Order Accepted event did not match the *routingParty* reported on the corresponding exchange order.	Error
7008	Named – *symbol/optionID* did not match	Named on an exchange order with a matching *routedOrderID* identified on the Order Route or Order Accepted event; however, the *symbol/optionID* on the Order Route or Order Accepted event did not match the *symbol/optionID* on the corresponding exchange order.	Error
7010	Named - *session* did not match	Named on an exchange order with a matching *routedOrderID* identified on the Order Route event; however, the *session* on the Order Route event did not match the *session* on the corresponding exchange order.	Error
7012	Named - Multiple fields did not match	Named on an Order Route or Order Accepted event with a matching *routedOrderID* identified in the Order Route or Order Accepted event; however, the *symbol/optionID*, *senderIMID* or a combination of fields reported on the Order Route or Order Accepted event did not match the *symbol/optionID* or *routingParty* on the corresponding exchange order.	Error
7018	Named – *destination* did not match	Named on an exchange order with a matching *routedOrderID* identified on the Order Route event; however, the *destination* reported on the corresponding Order Route event did not match the exchange ID on the corresponding exchange order.	Error
7020	Named – *receiverIMID* did not match	Named on an exchange order with a matching *routedOrderID* identified on the Order Accepted event; however, the *receiverIMID* reported on the corresponding Order Accepted event did not match the exchange ID on the corresponding exchange order.	Error

Table 102: Inter-firm Linkage Error Codes (Sender Reported to CAT)

Error Code	Error Code Description	Explanation	Warning/ Error
8003	Matching *routedOrderID* cannot be found	The *routedOrderID* reported on the Order Route event does not match to a corresponding *routedOrderID* on the Order Accepted/Order Modified event.	Error
8004	Named - Matching *routedOrderID* cannot be found	Named on an Order Route event, but the *routedOrderID* reported on the Order Accepted/Order Modified event does not match to a corresponding *routedOrderID* on the Order Route event.	Error
8005	*senderIMID* did not match	A matching *routedOrderID* was identified in the Order Accepted/Order Modified event; however, the *senderIMID* on the Order Route event did not match the *senderIMID* on the Order Accepted/Order Modified	Error

Error Code	Error Code Description	Explanation	Warning/ Error
		event.	
8006	Named - *senderIMID* did not match	Named on an Order Route event, but the *senderIMID* on the Order Accepted/Order Modified event does not match the *senderIMID* reported on the corresponding Order Route event.	Error
8007	*destination* did not match	A matching *routedOrderID* was identified in the Order Accepted/Order Modified event; however, the *destination* on the Order Route event did not match the *receiverIMID* on the Order Accepted/Order Modified event.	Error
8008	Named – *destination* did not match	Named on an Order Route event, but the *receiverIMID* on the Order Accepted/Order Modified event does not match the *destination* reported on the corresponding Order Route event.	Error
8009	*symbol/optionID* did not match	A matching *routedOrderID* was identified in the Order Accepted/Order Modified event; however, the *symbol/optionID* on the Order Route event did not match the *symbol/optionID* on the Order Accepted/Order Modified event.	Error
8010	Named – *symbol/optionID* did not match	Named on an Order Route event with a matching *routedOrderID* identified in the Order Accepted/Order Modified Event; however, the *symbol/optionID* on the Order Accepted/Order Modified event did not match the *symbol/optionID* on the Order Route event.	Error
8011	Multiple fields did not match	A matching *routedOrderID* was identified in the Order Accepted/Order Modified event; however, the *symbol/optionID*, *senderIMID, destination,* or a combination of fields on the Order Route event did not match the *symbol/optionID*, *senderIMID,* or *receiverIMID* on the Order Accepted/Order Modified event.	Error
8012	Named - Multiple fields did not match	Named on an Order Route event with a matching *routedOrderID* identified in the Order Accepted/Order Modified event; however, the *symbol/optionID*, *senderIMID, receiverIMID* or a combination of fields on the Order Accepted/Order Modified event did not match the corresponding *symbol/optionID*, *senderIMID,* or *destination* on the Order Route event.	Error
8013	Duplicate Route Linkage Key on Route to Industry Member	Unlinked due to duplicated Route Linkage Key on a Route to another Industry Member.	Error

Table 103: Interfirm Linkage Error Codes (Receiver Reported to CAT)

Error Code	Error Code Description	Explanation	Warning/ Error
9003	Matching *routedOrderID* cannot be found	The *routedOrderID* reported on the Order Accepted event does not match to a corresponding *routedOrderID* on the Order Route event.	Error

Error Code	Error Code Description	Explanation	Warning/ Error
9004	Named - Matching *routedOrderID* cannot be found	Named on an Order Accepted event, but the *routedOrderID* reported on the Order Route event does not match to a corresponding *routedOrderID* on the Order Accepted event.	Error
9005	*senderIMID* did not match	A matching *routedOrderID* was identified in the Order Route event; however, the *senderIMID* on the Order Accepted/Order Modified event did not match the *senderIMID* on the Order Route event.	Error
9006	Named - *senderIMID* did not match	Named on an Order Accepted/Order Modified event but the *senderIMID* reported on the Order Route does not match to a corresponding *senderIMID* on the Order Accepted/Order Modified event.	Error
9007	*receiverIMID* did not match	A matching *routedOrderID* was identified in the Order Route event; however, the *receiverIMID* on the Order Accepted/Order Modified event did not match the *destination* on the Order Route event.	Error
9008	Named - *receiverIMID* did not match	Named on an Order Accepted/Order Modified event but the *destination* reported on the Order Route does not match to a corresponding *receiverIMID* on the Order Accepted/Order Modified event.	Error
9009	*symbol/optionID* did not match	A matching *routedOrderID* was identified in the Order Route event; however, the *symbol/optionID* on the Order Accepted/Order Modified event did not match the *symbol/optionID* on the Order Route event.	Error
9010	Named – *symbol/optionID* did not match	Named on an Order Accepted/Order Modified event with a matching *routedOrderID* identified in the Order Route event; however, the *symbol/optionID* on the Order Route event did not match the *symbol/optionID* on the Order Accepted/Order Modified event.	Error
9011	Multiple fields did not match	A matching *routedOrderID* was identified in the Order Route event; however, the *symbol/optionID*, *senderIMID, receiverIMID, receiverIMID,* or a combination of fields on the Order Accepted/Order Modified event did not match the corresponding *symbol/optionID, senderIMID,* or *destination* on the Order Route event.	Error
9012	Named - Multiple fields did not match	Named on an Order Accepted/Order Modified event with a matching *routedOrderID* identified in the Order Route event; however, the *symbol/optionID*, *senderIMID, destination* or a combination of fields on the Order Route event did not match the corresponding *symbol/optionID*, *senderIMID, receiverIMID* or a combination of fields on an Order Accepted/Order Modified event.	Error
9013	Duplicate Route Linkage Key on Order Accepted or Modification received from Industry Member	Unlinked due to duplicated Route Linkage Key on an Order Accepted or Modification received from another Industry Member.	Error

E.4 Warning Error Codes

The tables below contain Warnings that will be included in the Error Feedback Files. Warnings are not required to be repaired. Codes are separated by Linkage type.

Table 104: Intra-Linkage Warnings

Error Code	Error Code Description	Explanation	Warning/ Error
399	Duplicate Event	The event has already been received by CAT. The first instance of the event will be retained; all subsequent submissions will be rejected. This rejection is not repairable.	Warning
398	Order Key, Trade Key, Quote Key or Fulfillment Key prior to CAT go-live	The Secondary Event (as defined in Appendix F) references an Order Key, Trade Key, Quote Key or Fulfillment Key that does not exist in CAT because it references a date prior to CAT go-live; or The *aggregatedOrders* field references an Order Key that does not exist in CAT because it references a date prior to CAT go-live.	Warning
397	Late Reported event	Event is unmatched because it was reported to CAT beyond the processing window, or the related Primary Event is outside the processing window. This warning is not repairable.	Warning
396	Incorrect *timeInForce* on related Primary event	Secondary event is related to a Primary event that contains an incorrect *timeInForce.* This Secondary event will receive a 3501 error on T+4 if the *timeInForce* is not corrected on the Primary event.	Warning

Table 105: Inter-firm Linkage Warnings

Error Code	Error Code Description	Explanation	Warning/ Error
897	Early reported event	Event is unmatched because it was reported to CAT prior to the due date. This warning is not repairable.	Warning

Appendix F: Glossary

CAT Processing Date	Date representing the set of events reported for a *CAT Trading Day*. Events reported late to CAT will be assigned the CAT Processing Date reflective of when they were reported. For example, an event, that occurred at 2pm on T which is reported to CAT after T+1 8am and prior to T+2 8AM will be assigned CAT Processing Date of T+1.
CAT Reporter IMID	The CAT Reporter IMID is the SRO assigned identifier that an Industry Member uses to report CAT events. A CAT Reporter may use any SRO assigned identifier that is valid on the CAT Trading Day for which CAT events are submitted.
CAT Submitter ID	The CAT Submitter ID is the identifier of the CAT Reporting Agent, the entity authorized to submit the files to CAT on behalf of the Industry Member. CAT Reporters may authorize third-parties (“CAT Reporting Agents”) to submit data to CAT on their behalf. Each CAT Reporting Agent and CAT Reporter will be assigned a unique CAT Submitter ID. If a CAT Reporter is performing its own submissions, these files will be submitted using its own CAT Submitter ID. If the Submitter is an Industry Member, the CAT Submitter’s CRD number. If the Submitter is not an Industry Member and does not have a CRD number (i.e. Service Bureaus), the CAT Submitter ID is the Submitter’s Organization ID.
CAT Trading Day	CAT Trading Day for Industry Members is defined as beginning immediately after 4:15:00PM and no fractions of a second Eastern Time on one trade date and ending at exactly 4:15:00PM and no fractions of a second Eastern Time on the next trading date. Weekends or any day that all equities or options national securities exchanges are closed are not considered a CAT Trading Day. Trading Days that close early end 15 minutes after the Market Close.
Client Order	For the purpose of this document, Client Order is defined as an order received from a CAT Reporter.
Customer Order	For the purpose of this document, Customer Order is defined as an order received from a non-CAT Reporter, including non-US broker-dealers.
Display ATS	An ATS that displays subscriber orders outside of the ATS.
Eligible Security	"Eligible Security" includes: (i) all NMS Securities, meaning "any security or class of securities for which transaction reports are collected, processed, and made available pursuant to an effective transaction reporting plan, or an effective national market system plan for reporting transaction in Listed Options"; and (ii) all OTC Equity Securities, meaning "any equity security, other than an NMS Security, subject to prompt last sale reporting rules of a registered national securities association and reported to one of such association's equity trade reporting facilities".
Electronic Capture Time	For manual orders, the timestamp or when the Manual CAT Event was captured electronically in the relevant order handling and execution system of the CAT Reporter.
Electronic Paired Option Order	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.
FDID	FDID is defined in Section 1.1 of the CAT NMS Plan as "a unique identifier for each trading account designated by Industry Members for purposes of providing data to the Central Repository.” See CAT FAQ M2 for more information on the prohibition on use of actual account numbers. Refer to the CAT Industry Presentation on FDID for additional information.

IMID	An Industry Member Identifier, IMID, is any identifier assigned by an SRO to one of its members and is used as part of the Linkage Key in orders routed between Industry Members. Examples include FINRA MPIDs, Nasdaq MPIDs, NYSE Mnemonics, Cboe EFIDs, and CHX Acronyms.
Manual Event	A non-electronic communication of order/trade/quote/fulfillment-related information for which CAT Reporters must record and report to CAT.
Material Terms of an Order	Includes: the NMS Security or OTC Equity Security symbol; security type; price (if applicable); size (displayed and non-displayed); side (buy/sell); order type; if a sell order, whether the order is long, short, short exempt; open/close indicator (except on transactions in equities); time in force (if applicable); if the order is for a Listed Option, option type (put/call), option symbol or root symbol, underlying symbol, strike price, expiration date, and open/close (except on market maker quotations); and any special handling instructions.
Order	The term order shall include: (i) Any order received by a member of a national securities exchange or national securities association from any person; (ii) Any order originated by a member of a national securities exchange or national securities association; or (iii) Any bid or offer.
Primary Event	An event that is received or originated by an Industry Member. Primary events include Orders, Trades, Quotes, Fulfillments and Allocations, each with a respective Event Key including: Order Key, Trade Key, Quote Key, Quote Route Key, Fulfillment Key and Allocation Key. Primary events require the assignment of a unique Key which does not duplicate the Key for other Primary Events with the same Key type. For example, an Order Key will not be compared to a Trade Key for uniqueness. If an Event Key is duplicated, all events having the same Event Key will be rejected. Primary events include: MENO, MEOA, MENQ, MEQR, MEOT, MEOF, MONO, MOOA, MOOF, and MEPA.
Processing Window	The Processing Window refers to the time period when data validation, linkage and corrections processing occurs prior to the construction of the lifecycle. The Processing Window for an event begins from the time it is reported to CAT and ends on the event's Trade Date + 4 at 8am.
Reportable Event	Includes, but is not limited to, the original receipt or origination, modification, cancellation, routing, execution (in whole or in part) and allocation of an order, and receipt of a routed order
Representative Order	Refer to CAT FAQ F1.
ROE	Reportable Order Event
Secondary Event	Represents an event occurring subsequent to the origination of a Primary Event. Secondary events require the assignment of an Event Key which provides linkage to the related Primary event that assigned the Key or to another Secondary event that assigned a new Key. Secondary events with event definitions that do not allow for the reassignment of an Event Key must populate the Event Key equal to the related event from which the Secondary event originated. Secondary events that are not defined to assign a new Event Key include: MENOS, MEOR, MEORS, MEIC, MECOC, MEOMR, MEOMS, MEOC, MEOCR, MEQC, MEOTS, MEOFS, MONOS, MOOR, MOCOC, and MOOC. Secondary events with event definitions that allow for the reassignment of an Event Key (Order Key, Trade Key, Quote Key, Quote Route Key, Fulfillment Key and Allocation Key) must assign an Event Key that is unique and does not duplicate the Event Key of any other Primary event or of any Secondary event which has assigned a new Event Key. When a new Event Key is assigned, the Prior Key representing the Event Key that is being replaced must be populated. Secondary events with event definitions that allow for the reassignment of an Event Key include: MEIR, MEIM, MECO, MECOM, MEOM, MEFA, MEAA, MEOJ,

	MEOE, MOIR, MOCO, MOCOM, MOOM, MOFA, and MOOJ. Secondary events with event definitions that allow for the reassignment of an Event Key are not required to assign a new Event Key. In such cases, when reported, the Event Key must be equal to the related event from which the Secondary event originated.
Simple Electronic Option Orders	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.
Smart Order Router	For the purpose of CAT reporting, a Smart Order Router is defined as an automated system that solely routes orders to another market center based on pre-defined routing criteria.
Trading Algorithm	FINRA Rule 1220(b)(4)(a) defines Trading Algorithmic Strategy as "an automated system that generates or routes orders (or order-related messages) but shall not include an automated system that solely routes orders received in their entirety to a market center."
Trade Date	Trade Date for Industry Member is defined as beginning immediately after 23:59:59.999999 ET on Trade Date T - 1 and up to 23:59:59.999999 ET of the next Trade Date T. Weekends and holidays are not considered a Trade Date. An event occurring on a weekend or holiday will be assigned to the next Trade Date.

Appendix G: Data Dictionary

Field Name	Data Type	Description
accountHolderType	Choice	Represents the type of beneficial owner of the account for which an order was received or originated. **Allowed Values:** **A** Institutional Customer – An institutional account as defined in FINRA Rule 4512(c) **E** Employee Account – An employee or associated person of the Industry Member **F** Foreign - A non-broker-dealer foreign affiliate or non-reporting foreign broker-dealer **I** Individual Customer – An account that does not meet the definition of “institution” as defined in FINRA Rule 4512(c) and is also not a proprietary account. **O** Market Making – See CAT FAQ C5 **V** Firm agency average price account **P** Other Proprietary **X** Error Account – Error account of the firm
actionType	Choice	Indicates whether the event is a new event, a correction, a repair or a record level deletion. **Allowed Values:** **NEW** New Record **COR** Correction of events initiated by firms. **RPR** Repair of events for which a CAT error was provided in feedback **DEL** Record level delete instruction. When deleting a record, Industry Members must not restate the event that is being deleted. Refer to Section 7 for instructions on record level deletions.
affiliateFlag	Boolean	Indicates if the order is being routed to an affiliate or received from an affiliate of the Industry Member. For definition of affiliate, refer to CAT FAQ C4. **Allowed Values:** **true** order is routed to or received from an affiliate **false** order is routed to or received from a non-affiliate
aggregatedOrders	Aggregated Orders	When an Industry Member generates a New Order event to represent one or more customer orders, the *aggregatedOrders* field specifies the individual customer order(s) being represented. For each order being represented, the *orderID* and *orderKeyDate* must be provided. Quantity is required when a portion of the order’s quantity is included in the aggregation. In instances when the *aggregatedOrders* field causes the event to exceed the maximum length (8190 bytes) allowed, one or more corresponding New Order Supplement events

Field Name	Data Type	Description
		must be reported to capture the additional orders in the *aggregatedOrders* field. Refer to Appendix C for additional information on representative and combined order linkage requirements.
allocationID	Text (64)	The internal allocation ID assigned to the allocation event by the Industry Member. The combination of *CATReporterIMID*, *allocationKeyDate*, *symbol* and *allocationID* must be unique.
allocationInstructionTime	Timestamp	The date/time the time the allocation instruction was received.
allocationKeyDate	Timestamp	The date and time the *allocationID* was assigned.
allocationType	Choice	Indicates the type of allocation being made. **Allowed Values for activity that is required to be reported to CAT:** **CUS** Allocation to a custody account **DVP** Allocation to a DVP account **CUSF** Allocation to a custody account free of payment **DVPF** Allocation to a DVP account free of payment **Allowed Values for activity that is being optionally reported to CAT:** **FLP** Correspondent Flip **FRM** An allocation to a firm owned or controlled account **STO** Step out/Step in **OTH** Other non-reportable transactions (e.g. option exercises, conversions, allocations to the account of a CAT Reporting Industry Member) **Allowed Values for an allocation in an OTC Equity symbol of a foreign security or other security/contract where the firm reporting the allocation does not have knowledge as to whether executions related to the allocation were CAT reportable as outlined in FAQ B49*:** **FCUS** Allocation to a custody account where it is unknown if related executions were CAT reportable **FDVP** Allocation to a DVP account where it is unknown if related executions were CAT reportable **FCSF** Allocation to a custody account free of payment where it is unknown if related executions were CAT reportable **FDVF** Allocation to a DVP account free of payment where it is unknown if related executions were CAT reportable *These values must not be used if the reporting party has knowledge as to whether the executions related to the allocation were CAT reportable, and knows that the allocation was required to be reported to CAT or was optionally reported to CAT.

Field Name	Data Type	Description
askPrice	Price	Price being asked in a quote.
askQty	Whole Quantity	Quantity being asked in a quote.
atsDisplayInd	Choice	ATS only field. Indicates if the order is displayed outside of the ATS to subscribers only, or via publicly disseminated quotation data. **Allowed Values:** **S** Order is displayed outside of the ATS to subscribers only **A** Order is displayed outside of the ATS to subscribers only, aggregated by price level on a timer basis **Y** Order is displayed outside of the ATS via public quotation **N** Order is not displayed outside of the ATS
atsOrderType	Array	ATS only field. Unique identifier representing the specific order type(s) offered by the ATS. ATSs will provide their order types and handling instructions to CAT by submitting data dictionaries. Multiple *atsOrderType* values may be populated.
bidPrice	Price	Price being bid in a quote.
bidQty	Whole Quantity	Quantity being bid in a quote.
buyDetails	Trade Side Details	Captures the Order Key and additional information for the Order associated with the buy side of a Trade Event. This field is in the format of Trade Side Details, a compound data type that consists of a list of fields (see Section 2.5 Data Types). The *buyDetails* field is only used in Trade events and Trade Supplement events to capture the buy side details of the trade. Refer to Section 4.12.1 for a list of fields. This field is applicable in Trade event if there is only one *orderID* associated with this side of the trade. If there is more than one *orderID*, the *buyDetails* must be populated in separate Trade Supplement events.
cancelQty	Real Quantity	The quantity being cancelled. Value > 0 must be provided; Quantity must represent the quantity being cancelled, even in cases of a full cancellation.
cancelFlag	Boolean	Represents instances when a trade was cancelled because the trade was rejected by the TRF/ADF/ORF, when a trade executed in a foreign market was cancelled, or when a customer fulfillment is cancelled. In such instances, set to *true*. Refer to CAT FAQ E25, CAT FAQ E29 and CAT FAQ E30 for additional information. **Allowed Values:** **true** trade event was cancelled upon rejection by the TRF/ADF/ORF; or fulfillment was cancelled. **false** trade event was not cancelled or cancellation was reported to the TRF/ADF/ORF; or fulfillment event was not cancelled.

Field Name	Data Type	Description
cancelTimestamp	Timestamp	The time at which a trade or fulfillment was cancelled. Must be populated when *cancelFlag* is *true.*
capacity	Choice	Specifies the capacity in which the Industry Member acted. **Allowed Values:** **A** Agency **P** Principal **R** Riskless Principal
CATReporterIMID	CAT Reporter IMID	The SRO assigned identifier that an Industry Member uses to report to CAT.
correspondentCRD	Unsigned	The CRD number of the related Introducing Broker or Correspondent firm, if applicable.
clearingFirm	Unsigned	The clearing number of the Industry Member's clearing firm.
clientDetails	Trade Side Details	Specifies the Order Key and additional information for a Client Order for which a fulfillment event is associated. This field is in the format of Trade Side Details, a multi-dimensional array that consists of a list of fields (see Section 2.5 Data Types). The *clientDetails* field is only used in Equity and Option Order Fulfillment and Fulfillment Amendment Events to capture the customer or client side details of the Fulfillment. Refer to Section 4.13.1 for a list of fields.
counterparty	Industry Member ID	The counterparty to the trade.
custDspIntrFlag	Boolean	Indicates if a customer has instructed that a limit order must not be displayed or that a block size order must be displayed. **Allowed Values:** **true** Customer has instructed that a limit order should not be displayed or that a block size order be displayed. **false** No instruction has been received from the customer that a limit order should not be displayed or that a block size order should be displayed.
custType	Choice	Customer Type. Indicates if the account holder is a natural person or legal entity. **Allowed Values:** **NP** account holder is a natural person **LE** account holder is a legal entity
deptType	Choice	Represents the internal department, unit or desk originating or accepting the order. **Allowed Values:** **A** Agency - a desk or department where orders may be routed to other trading centers, either by a trading system or with the assistance of traders. This would include smart routers and algorithmic trading.

Field Name	Data Type	Description
		ATS A trading system that meets the definition of "Alternative Trading System" under Regulation ATS. **DMA** Direct Market Access – For CAT reporting purposes, represents when an Industry Member permits a customer to use a market participant identifier assigned to the Industry Member to route orders directly to market centers. **SA** Sponsored Access **-** For CAT reporting purposes, represents when an Industry Member permits another broker-dealer to use a market participant identifier assigned to the Industry Member to route orders directly to market centers. **T** Trading - A desk or department where orders are executed. This may be interpreted as either a trading system or a desk or department where orders are executed with the assistance of traders. **O** Other – A department that does not execute orders or route orders to other trading centers. The value of 'O' must only be used on events that are followed by Internal Route Accepted events.
destination	Industry Member ID/Exchange ID	The SRO assigned identifier of the Industry Member or Exchange to which an order was routed. When *destinationType* is N, this field is not required to be populated. When *destinationType* is F or O, populate with the IMID of an Industry Member. When *destinationType* is E, Allowed Values include: **BOX** BOX Options Exchange **BSTX** Boston Security Token Exchange **CBOE** Cboe Exchange **C2** Cboe C2 Options **BYX** Cboe BYX Exchange **BZX** Cboe BZX Equities **BZXOP** Cboe BZX Options **EDGA** Cboe EDGA Exchange **EDGX** Cboe EDGX Equities **EDGXOP** Cboe EDGX Options **IEX** Investor's Exchange **LTSE** Long Term Stock Exchange **MEMX** Members Exchange **MIAMI** Miami International Securities Exchange **PEARL** MIAX PEARL **PEARLEQ** MIAX PEARL Equities **EMLD** MIAX Emerald **BX** Nasdaq BX Equities **NOBO** Nasdaq BX Options **PSX** Nasdaq PHLX Equities **PHLX** Nasdaq PHLX Options

Field Name	Data Type	Description
		NSDQ Nasdaq Stock **NOM** Nasdaq Options **ISE** Nasdaq ISE **GEMX** Nasdaq GEMX **MRX** Nasdaq MRX **AMER** NYSE American Equities **AMEROP** NYSE American Options **ARCA** NYSE ARCA Equities **ARCAOP** NYSE ARCA Options **NYSE** The New York Stock Exchange **CHX** NYSE CHX **NSX** NYSE National
destinationType	Choice	Indicates whether the destination of the route is an Industry Member, an exchange or a foreign broker-dealer. **Allowed Values:** **F** Industry Members **E** Exchange **N** Foreign – Not applicable to options events **O** OTC Equity symbol in a foreign security was sent to another Industry Member, who may route the order to a foreign market for execution
displayPrice	Price	ATS only field. The current price displayed by the ATS. Required when the ATS displays the order outside of the ATS.
displayQty	Whole Quantity	ATS only field. The current quantity displayed by the ATS. Required when the ATS displays the order outside of the ATS.
dupROIDCond	Boolean	Indicates when a modification to an order previously routed to a national securities exchange requires the use of the original *routedOrderID*. **Allowed Values:** **true** Event contains a duplicated *routedOrderID* **false** Event does not contain a duplicated *routedOrderID*
DVPCustodianID	Text (40)	Applicable to DVP transactions. If the custodian is a US broker-dealer, this field must represent the clearing number of the custodian. If the custodian is a US bank and is not a registered broker-dealer, this field must represent the DTC number of the bank. If the custodian is a foreign entity, must be populated with a value of 'FOREIGN'. Refer to CAT FAQ U19 for additional guidance.
electronicDupFlag	Boolean	Indicates whether the event is a duplicative electronic message of a manual event. Must be present if true. If populated as true, the event will not be linked in Phase 2b.

Field Name	Data Type	Description
		Allowed Values: **true** event is a duplicative electronic message **false** event is not a duplicative electronic message
electronicTimestamp	Timestamp	For manually executed events, the time at which the event was systematized. Must be reported at the most granular level an Industry Member's order handling or execution systems use to capture data for the reported event, with at least millisecond granularity.
errorROEID	Unsigned	The unique identifier assigned by CAT to an error record. Must be populated when the *actionType* is RPR.
eventTimestamp	Timestamp	The date and time the event occurred. If electronic, required to be reported at the most granular level an Industry Member's order handling or execution systems use to capture data for the reported event, with at least millisecond granularity. If manual, required to be reported in increments of at least one second. If the order is immediately systematized, required to be reported with at least millisecond granularity.
exchOriginCode	Text (4)	The code signifying the origin of the account exactly as sent to an Options exchange. Required for orders routed to an Options exchange. In instances where the market maker sends a market maker order through an options exchange protocol that does not require an exchange origin code, Industry Members must populate the exchOriginCode with MM. Refer to CAT FAQ E28 for additional information.
fillKeyDate	Timestamp	The date and time the *fulfillmentID* was assigned. Used to support uniqueness of a Fulfillment Key. If time is not needed to guarantee a unique Fulfillment Key, the time portion may be populated with zeros.
firmDesignatedID	Text (40)	See FDID guidance and FDID FAQs. A value of 'PENDING' must be populated in instances when an Industry Member receives an order for a new account and the new account number, on which the FDID is based, is not yet available. Once the FDID becomes available, the Industry Member must report the actual FDID in the *firmDesignatedID* field in a New Order Supplement event.
firmDetails	Fulfillment Side Details	Specifies the Order Key and additional information for a Firm Originated Order for which a fulfillment event is associated. Refer to Appendix C for representative order linkage requirements. It is in the format of Fulfillment Side Details, a compound data type that consists of a list of fields (see Section 2.5 Data Types). *firmDetails* is only used in Equity and Option Order Fulfillment, Order Fulfillment Supplement and Fulfillment Amendment Events to capture the firm side details of the Fulfillment. See Section 4.13.1 for list of fields. This field is applicable on an Order Fulfillment event if there is only one *orderID* associated with the firm side of the fulfillment. If there is more than one *orderID* associated with the firm side, the *firmDetails* must be populated in separate

Field Name	Data Type	Description
		Order Fulfillment Supplement events.
firmROEID	Text (64)	An identifier of the record assigned by the CAT Reporter. The *firmROEID* is composed based on the following format: <eventDate>_<firm ROE Identifier> The *firmROEID* must be unique for the Event Date and CAT Reporter IMID.
fulfillmentID	Text (64)	The identifier for the order fulfillment. The combination of *CATReporterIMID*, *fillKeyDate*, *symbol* and *fulfillmentID* must be unique per Order Fulfillment event.
fulfillmentLinkType	Choice	Specifies the type of the fulfillment. Refer to Appendix C for additional information on Representative Order linkage requirements. **Allowed Values for Equity Events:** **Y** Representative Order, linkage required **YS** Representative Order, linkage required, details provided in a supplement event **YP** Fill from pre-existing Principal order, linkage required **YE** Representative eligible - Order eligible for customer fills via an unlinked system (unlinked OMS-EMS or position fill) **FOR** Fulfillment on an order routed to a foreign destination, no linkage required **Allowed Values for Option Events:** **O** Options Order Fulfillment
handlingInstructions	Name/Value Pairs	Order handling instructions qualify the pricing, quantity, execution timing, or execution method of an order. All instructions that apply to the order must be included. The *handlingInstructions* field may contain zero or more order handling instruction codes. There is no limit to the number of *handlingInstructions* that may be populated in a record. Codes which require a value will include that value immediately after the code Field Name and a single equal sign (ASCII decimal 61, hex 3D). Allowed Values include both choice fields and Name/Value Pairs. Name/Value Pairs must be accompanied by a Value. Values are case sensitive. **Allowed Values:** **ADD** Add on Order. The customer adds additional shares to the order after it was fully executed. **ALG** Order was received or originated with instructions to work using a trading algorithm as defined in FINRA Rule 1220(b)(4)(a) and shall not include Smart Order Routers. **ALGMod** Order originally received with instructions to work using a trading algorithm is later modified by the customer/client to use a different trading algorithm or change the settings of the trading

Field Name	Data Type	Description
		algorithm **ALO** Add Liquidity Only **AOB** At or Between. Instructs the trader to execute at a trade price equal to the NBBO or between the NBBO and the midpoint.
handlingInstructions (Cont.)	Name/Value Pairs	**AOK** Auction or Kill **AON** All or None **ATT** Attributable **BIN** Buy-In – An order executed pursuant to SEC or SRO rules (e.g., to comply with the close out requirements of Regulation SHO or FINRA Rule 4320, or the buy-in requirement of SEA Rule 15c3-3). Refer to CAT FAQ B37 **CAC** Customer Initiated Account Correction. 'COR' event was submitted to CAT as the result of a customer initiated account change prior to allocation. Not to be used if the 'COR' event was submitted to correct an error by the Industry Member. **CMC** Contingent on Market Conditions **CMPX** Complex option order that is tracked as a single leg option order with separate complex instructions **CND** Conditional Order. An order where the terms and conditions of the order are derived from a related transaction. **CNH** Cash Not Held. Instructs the Trader to buy or sell as much stock as possible, over the course of the trading day, for a specified amount. **CPR** Counterparty Restriction. Instructions that the order cannot be placed against certain counterparties. **CSC** Contingent on Spread Condition - order with a condition that may cause the order to become active or inactive multiple times throughout the day. **CSH** Delivery Instruction: Cash trade settles on the same date **d** Discretionary Peg **DAC** Delta-Adjusted at Close. A DAC order is an options order that executes during the trading day and, for which, the execution price is adjusted based on a delta value applied to the change in the price of the underlying reference price from the time of order execution to the market close. **DIR** Directed Orders – Orders that meet the definition of "Directed Order" under Rule 600(b)(19) of Regulation NMS (formerly defined under SEC Rule 11Ac1–6), or any other order that is received or originated with instructions to route to a particular venue for execution **DIV** Dividend Reinvestment Order. Order is part of a dividend reinvestment program. **DNI** Do Not Increase

Field Name	Data Type	Description
		DNR Do Not Reduce **DNRT** Do Not Route **EW** Exchange for Physical Transaction – Equity trade component of an "exchange for physical" transaction. An exchange for physical transaction involves two parties simultaneously executing a futures contract and an equity transaction (for the securities covered by the futures contract), typically involving baskets that replicate common indices.
handlingInstructions (Cont.)	Name/Value Pairs	**FB** Cboe Floor Broker. Indicates that the order is directed to a Cboe floor broker **FBA** NYSE Floor Broker Algorithm indicates that the order is routed to the Exchange via a NYSE Floor Broker Algorithm **FOK** Fill or Kill - Indicates the order is intended for immediate execution in its entirety, and if not executed in its entirety, the order is cancelled **FS** Suspend **FUT** Futures Related Trade. Price or size of a cash order is contingent upon a related futures trade. **G** G Order – An order for an account covered by Exchange Act §11(a) that relies on §11(a)(1)(G) as an exemption to §11(a)(1) **GVWAP** Guaranteed VWAP. Order was received or originated with instructions to execute at a guaranteed volume-weighted average price. **IDX** Intra-Day Cross **IO** Imbalance Only **J3** OTC Link trade negotiation messages directed by an OTC Link ATS subscriber to a Global OTC quote. Will be retired in Phase 2d. **LOC** Limit on Close - Instructs the trader to execute the order at the closing price provided that the closing price is at or within the limit specified **LOO** Limit on Open - Instructs trader to execute the order at the opening price provided that the opening price is at or within the limit specified. **M** Midpoint Peg **MAC** Market at Close. Instructs the trader to execute the order at the closing inside quote price of regular market hours.
handlingInstructions (Cont.)	Name/Value Pairs	**MAO** Market at Open. Instructs the trader to execute the order at the opening inside quote price of regular market hours. **MOB** Midpoint or Better. Instructs the trader to execute at a trade price equal to the midpoint or better. **MOC** Market on Close. Instructs the trader to execute the order at the closing last sale price of regular market hours. **MOO** Market on Open. Instructs the trader to execute

Field Name	Data Type	Description
		the order at the opening print price of regular market hours. **MRP** Merger Related Transfer Position **MTL** Market to Limit. An order that is sent in as a market order to execute at the current best price. If the entire order does not immediately execute at the market price, the remainder of the order is resubmitted as a limit order with the limit price set to the price at which the original order executed. **NAV** Net Asset Value. Order was received or originated with instructions to execute at a Net Asset Value. **ND** Delivery Instructions: Next Day - trade settles on next trade date **NH** Not Held **OPO** Opt Out of Locked Market **OPT** Options Related Trade. Price or size of a cash order is contingent upon a related option trade Refer to CAT FAQ K5 for additional information. **OVD** Over the Day. Requires that a trader break up an order into several partial executions. The customer may specify the number of executions. **P** Market Peg **PEG** Indicates that the limit price is to be determined by a specific market price and/or volume factor or that the limit price should be determined pursuant to a specific formula **R** Primary Peg **RAR** Routed as Received. For orders routed without any changes to the handling instructions, reporters may use this code to indicate that the handling instructions are equal to the received order. **RLO** Retail Liquidity Order (On Exchange) **RSV** Reserve Size Order. Required for an order for which a customer has authorized the public display of part of the full size of the order with the remainder held in reserve on an undisplayed basis to be displayed in whole or in part as the displayed part is executed. **SCL** Scale. Requires partial executions that are not more than a specified price increment apart. **SLD** Slide —Instruction to adjust limit price to prevent locked or crossed market **SLQ** Stop Limit on Quote. An order that is triggered by a quotation at which point the stopped order becomes a limit order. **SLR** Delivery Instructions: Seller's Option - trade settles on the date determined by a seller. **SR** Solicitation Response. Order was originated or received as a response to solicitation. Only applicable to Options events. Equity events that are originated or received as a response to solicitation must be reported to CAT with the *solicitationFlag* as true.

Field Name	Data Type	Description
		SMT Smart Router. Indicates that the order is routed out via a Smart Router. **SOQ** Stop on Quote. An order that is triggered by a quotation at which point the stopped order becomes a market order. **STOPF** Stop Formula – exact stop price is unknown because it is either based on an underlying condition or will be determined by the destination venue **STP** Self Trade Prevention **TS** Trailing Stop **TTF** Tied to Fixed Income **TTO** Tied to a product that is not CAT reportable and is not identified through any other *handlingInstructions* value **TTS** Tied to Stock **TTSO** Tied to Simple Option **UNP** Unpriced Quote on an Order Driven Market – Applicable to orders received by Global OTC. **UNS** Unsolicited Quote on an Order Driven Market – Applicable to orders received by Global OTC.
handlingInstructions (Cont.)	Name/Value Pairs	**WDP** With Discretion Price - Discretion on Limit Price Within a Specified Range **WRK** Work. Leaves the time of execution to the trader's discretion; either full execution or partial executions are accepted. **Allowed Values (Name/Value Pairs):** **AucResp** Auction Response. Requires the Auction ID value for option orders originated in response to an exchange auction. If there is no Auction ID, must be populated with a value of 'NOAUCID' Data Type: Alphanumeric (40) **DISP** Display Price. The display price at the time the order is receive or originated. Requires a numeric value representing the display price (e.g., DISP=10.00) Data Type: Price. **DISQ** Display Quantity. The display quantity at the time the order is received or originated. Requires a numeric value representing the display quantity (e.g., DISQ=1000) Data Type: Real Quantity **STOP** Stop Price - requires a Numeric value representing the stop price (e.g., STOP=17.95) Data Type: Price **SW** Stop Stock Transaction – Any transaction resulting from an order for which a member and another party agree that the order will be executed at a Stop Stock Price or better. Requires a numeric value representing the agreed stop price. Data Type: Price **SWQ** Stop Stock Quantity - requires a Numeric value representing the quantity of shares of a stop stock

Field Name	Data Type	Description
		order being stopped if the entire shares quantity of the order is not being stopped (e.g., SWQ=500). When SWQ is populated, SW must also be populated. Data Type: Whole Quantity **TMO** The trigger time of the Time Managed Order (e.g. the specific date and time that an order becomes a market or limit price order) - requires a Timestamp value. Data Type: Timestamp
infoBarrierID	Text (20)	The identifier of the information barrier in place for a trading unit that will meet the criteria of the "no-knowledge" exception in FINRA Rule 5320.02.
initiator	Choice	Indicates who initiated a cancel or modification request. If an order is modified or cancelled based on an implicit customer instruction, then the initiator field must be populated with a value of 'F'. Refer to CAT FAQ B63 for additional information. **Allowed Values:** **C** Initiated by the Customer **F** Initiated by the firm
institutionFlag	Boolean	Indicates if the account meets the definition of institution under FINRA Rule 4512(c) **Allowed Values:** **true** account meets the definition of institution under FINRA Rule 4512(c) **false** account does not meet the definition of institution under FINRA Rule 4512(c)
isoInd	Choice	Indicates the order was an Intermarket Sweep Order **Allowed Values:** **ISOD** Intermarket Sweep Order - Day **ISOI** Intermarket Sweep Order - IOC **NA** Not applicable
leavesQty	Real Quantity	The quantity remaining unfilled after the event. The meaning of this field is dependent on the event in which it's used. Refer to each individual event definition for more detail.
manualFlag	Boolean	Indicates whether an order was received or handled manually. **Allowed Values:** **true** event was received/handled manually **false** event was not received/handled manually
manualOrderID	Text (64)	In cases when a duplicative electronic message is reported, the *manualOrderID* is the *orderID* of the related manual order.
manualOrderKeyDate	Timestamp	In cases when a duplicative electronic message is reported, the *manualOrderKeyDate* is the *orderKeyDate* of the related

Field Name	Data Type	Description
		manual order.
marketCenterID	Choice	The national securities exchange or transaction reporting system operated by a registered securities association where the trade was reported. **Allowed Values:** ***FINRA transaction reporting systems:*** **DN** FINRA/NYSE Trade Reporting Facility **D** ADF **L** FINRA/Nasdaq Trade Reporting Facility **DC** FINRA/Nasdaq Chicago Trade Reporting Facility **O** OTC Reporting Facility ***National Securities Exchanges:*** **A** NYSE MKT **B** Nasdaq BX **BF** Boston Security Token Exchange **C** NYSE National **F** Non–US Exchange **H** MIAX PEARL Equities **I** International Securities Exchange **J** Cboe EDGA Exchange **K** Cboe EDGX Exchange **LT** Long Term Stock Exchange **M** NYSE Chicago Stock Exchange **N** New York Stock Exchange **P** NYSE Arca **Q** The Nasdaq Stock Market **U** Members Exchange **V** Investors Exchange **W** Cboe Stock Exchange **X** Nasdaq PSX **Y** Cboe BYX Exchange **Z** Cboe BZX Exchange
minQty	Whole Quantity	Indicates the minimum quantity allowed to be executed in a single transaction. Must be > 0.
mpStatusCode	Choice	Market Participant Status Code- indicates if the market maker's quote was open or closed. Only applicable for quotes sent to an IDQS. **Allowed Values:** **O** Open **C** Close
nbboSource	Choice	ATS only field. Source of the NBBO data used.

Field Name	Data Type	Description
		Allowed Values: **D** Direct **S** SIP **H** Hybrid - NBBO Source of Hybrid is used in instances where the firm uses a combination of Direct and SIP feeds as its NBBO Source. **NA** Not Applicable NBBO Source of 'NA' is used when the NBBO Engine Look up Date and Time is not applicable for the ATS Order Type or the ATS cancelled the order without referencing the NBBO. If this value is used, the related NBBO price and quantity fields must be populated with a value of '0' and the *nbboTimestamp* must be blank.
nbboTimestamp	Timestamp	ATS only field. The date and time at which the NBBO was referenced.
nbbPrice	Price	ATS only field. The national best bid price in effect at the event timestamp. If the event changed the NBBO, populate with the national best bid price before the change effected by the event.
nbbQty	Whole Quantity	ATS only field. The national best bid quantity in effect at the event timestamp. If the event changed the NBBO, populate with national best bid quantity before the change effected by the event.
nboPrice	Price	ATS only field. The national best offer price in effect at the event timestamp. If the event changed the NBBO, populate with the national best offer price before the change effected by the event.
nboQty	Whole Quantity	ATS only field. The national best offer quantity in effect at the event timestamp. If the event changed the NBBO, populate with the national best offer quantity before the change effected by the event.
negotiatedTradeFlag	Boolean	Identifies if an order is the result of a negotiated trade between two parties. **Allowed Values:** **true** indicates the trade is a result of a negotiation **false** indicates the trade is not the result of a negotiation
nextUnlinked	Choice	For Phase 2b, determines whether the given option event is unlinked in the option order lifecycle, as the next event is out of scope for Phase 2b. **Allowed Values:** **M** The next immediate internal step is handled manually, no subsequent linkage **C** The next step of the order is to be represented by a complex order, no subsequent linkage **P** The next step of the order is a paired option order, no subsequent linkage

Field Name	Data Type	Description
newOrderFDID	Text (40)	The FDID of the related New Order event, if available in the booking system. Requirements for populating this field may be expanded in future phases of CAT.
onlyOneQuoteFlag	Boolean	Identifies instances when the quoting system allows only one quote to be active at a time for the particular market maker. **Allowed Values:** **true** system allows only one quote **false** system allows multiple quotes
openCloseIndicator	Choice	Indicates when exchange rules require an order to be marked as open or close upon entry into the exchange. Must be reported as a point-in-time value on each event (therefore, this may differ between New Option Order and Option Order Route for the same *orderID*). **Allowed Values:** **Open** **Close**
optionID	Text (22)	The 21-character OSI Symbol of the option. For FLEX Percent options, a percentage symbol (%) is prepended to the OSI symbol elements.
orderID	Text (64)	The internal order ID assigned to the order by the Industry Member. The combination of *CATReporterIMID*, *orderKeyDate*, *symbol* and *orderID* must be unique.
orderKeyDate	Timestamp	For Primary Events and Secondary Events that assign the Order Key, the date and time the *orderID* was assigned. For Secondary events that did not assign a new Order Key, the *orderKeyDate* of the related event from which the Secondary event originated. Used to support uniqueness of an Order Key. If time is not needed to guarantee a unique Order Key, the time portion may be populated with zeros.
orderType	Choice	The type of order being submitted. **Allowed Values:** **CAB** Cabinet **LMT** Limit **MKT** Market
originatingIMID	CAT Reporter IMID	An identifier used in instances of a merger or acquisition where the originating firm had open limit orders on its books that will be executed or otherwise resolved under the surviving firm. Must be provided to support linkage to an event that was reported with a different *CATReporterIMID.*
parentOrderID	Text (64)	The *orderID* of the event from which the Child Order Event or Order Internal Route Accepted event originated.
parentOrderKeyDate	Timestamp	The *parentOrderKeyDate* is the *orderKeyDate* of the event from which the Child Order or Order Internal Route Accepted event originated.

Field Name	Data Type	Description
price	Price	For Order events, the limit price of the order. The *price* field may be populated with a value of '0' for orders that are not market orders, but do not have a set limit price. Refer to CAT FAQ B58 for additional information. For Trade events, the price of the trade.
priorAllocationID	Text (64)	If a new allocation ID is assigned, this is the *allocationID* of the event being modified.
priorAllocationKeyDate	Timestamp	In cases when a new *allocationID* is assigned, the *priorAllocationKeyDate* is the *allocationKeyDate* of the allocation event that is being modified.
priorFulfillmentID	Text (64)	In cases when a new *fulfillmentID* is assigned, the *priorFulfillmentID* is the *fulfillmentID* that is being amended.
priorFillKeyDate	Timestamp	In cases when a new *fulfillmentID* is assigned, the *priorFillKeyDate* is the *fillKeyDate* of the fulfillment that is being amended.
priorOrderID	Text (64)	In cases when an event assigns a new *orderID*, the *priorOrderID* is the *orderID* that is being replaced.
priorOrderKeyDate	Timestamp	In cases when an event assigns a new *orderID*, the *priorOrderKeyDate* is the *orderKeyDate* of the order whose *orderID* is being replaced.
priorQuoteID	Text (64)	In cases when a new *quoteID* is assigned, the *priorQuoteID* is the *quoteID* that is being replaced.
priorQuoteKeyDate	Timestamp	In cases when an event assigns a new *quoteID*, the *priorQuoteKeyDate* is the *quoteKeyDate* of the order whose *quoteID* is being replaced.
priorUnlinked	Choice	For Phase 2b, indicates whether the reported option event is unlinked to the prior event in the option order lifecycle as the prior event is out of scope for Phase 2b. **Allowed Values:** **M** The immediate prior order handling is manual, no linkage to the prior event. **C** This is a single leg order split from a complex parent order, no linkage to the parent.
quantity	Real Quantity	The quantity of the order.
quoteID	Text (64)	The internal quote ID assigned to the quote by the reporter. Required to report at the start of the lifecycle if initiated by a quote.
quoteKeyDate	Timestamp	The date and time the *quoteID* was assigned. Used to support uniqueness of a Quote Key. If time is not needed to guarantee a unique Quote Key, the time portion may be populated with zeros.
quoteRejectedFlag	Boolean	Indicates if the quote was not accepted by the destination. **Allowed Values:** true false

Field Name	Data Type	Description
quoteWantedInd	Choice	Indicates if the quote message received by an IDQS is a request for a bid or an ask. **Allowed Values:** **A** Ask Wanted **B** Bid Wanted
quotingIDQS	Industry Member ID	If a trade was the result of a quote that was sent to an IDQS, this is the IMID of the IDQS that submitted the related Quote Received event. Required in Phase 2d.
receivedQuoteID	Text (64)	Identifies the quote ID as received by the ATS or broker-dealer, it must match the *routedQuoteID* in the New Quote event reported by the issuer of the quote.
receiverIMID	Industry Member ID	The IMID of the Industry Member receiving the order or quote. *receiverIMID* must match the *destination* field on the Order Route event reported by the routing Industry Member. If receiving from an exchange as the routing broker, then this must match the *routingParty* on the Order Route event reported by the exchange.
receivingDeskType	Choice	Indicates the type of desk or department within the firm that received the order. More granular than the field *deptType*. Only required when the destination of an internal route is a desk. **Allowed Values:** **A** Agency **AR** Arbitrage **B** Block Trading **C** Convertible Desk **CR** Central Risk Books **D** Derivatives **EC** Equity Capital Markets **FB** Floor Broker **IN** International **IS** Institutional **O** Other **PF** Preferred Trading **PR** Proprietary **PT** Program Trading **S** Sales **SW** Swaps **T** Trading Desk **TR** Treasury
reportingExceptionCode	Choice	Indicates the reason that a unique identifier (e.g., Branch Sequence Number, Compliance ID) was not supplied to a transaction reporting system.

Field Name	Data Type	Description
		Allowed Values: **C** Industry Member was the contra side of the trade report for a trade which was reported to a TRF/ORF/ADF via a QSR or AGU. **F** Reported on Form T pursuant to FINRA Trade Reporting Rules. **N** Trade was executed by a non-FINRA member and reported to the TRF by the FINRA member counterparty. **P** Intra–firm order where there is no change in beneficial ownership.
representativeInd	Choice	Indicates the type of representative order being reported and whether linkage is required. Refer to Appendix C for additional information on Representative Order linkage requirements. **Allowed Values for Equities:** **Y** Representative order, linkage required **YS** Representative order, linkage required; details in supplement event **YP** Representative order, pricing guarantee, no linkage required **YE** Representative eligible - Order eligible for customer fills via an unlinked system (unlinked OMS-EMS or position fill workflow) **N** Not a representative order, linkage is not applicable **Allowed Values for Options:** **O** Options Combined Order **N** Not a combined order, linkage is not applicable
reservedForFutureUse	Text (0)	Field is Reserved for Future Use and must remain blank. Future enhancements to Message Types with positions that are Reserved for Future Use will occupy the available position before adding a new position.
RFQID	Text (64)	For New Order events representing a response to an RFQ or solicitation, the ID assigned to the related RFQ or solicitation being responded to.
routedOrderID	Text (64)	For orders routed, the ID assigned to the order by the routing firm when routing the order. For orders received, the ID assigned to the order by the routing firm. Must be unique per combination of Event Date, symbol (or optionID), *destination/receiverIMID, senderIMID*, and *session* (applicable only on routes to exchanges).
routedQuoteID	Text (64)	For quotes sent, the *quoteID* as sent to the recipient of the quote. For quotes received, the *quoteID* as received from the routing firm.
routeRejectedFlag	Boolean	Indicates the routed order was not accepted by the destination (i.e. rejected, no response). Refer to Section 2.6.3.5 for additional information.

Field Name	Data Type	Description
		Allowed Values: **true** rejected or abandoned **false** not rejected
sellDetails	Trade Side Details	Captures the Order Key and additional information for the Order associated with the sell side of a Trade Event. This field is in the format of Trade Side Details, a compound data type that consists of a list of fields (see Section 2.5 Data Types). The *sellDetails* field is only used in Trade events and Trade Supplement events to capture the sell side details of the trade. Refer to Section 4.12.1 for a list of fields. This field is applicable on a Trade event if there is only one *orderID* associated with this side of the trade. If there is more than one *orderID*, the *sellDetails* must be populated in separate Trade Supplement events.
senderIMID	Industry Member ID/ Exchange ID	Provides the identity of the party routing the order or quote, known also by the destination. The *senderIMID* reported by the routing entity must match the *senderIMID* reported by the receiving party. When receiving an order, the *senderIMID* is the IMID from which the order was received. When receiving orders from an exchange, the *senderIMID* must be equal to the Exchange ID and must match the *exchange* field in the Route event reported by the exchange. When routing an order, the *senderIMID* is the IMID being used by the Industry Member to route the order, as known by the destination. The *senderIMID* is either the IMID of the Industry Member, corresponding to *senderType* F or O, or the Exchange ID of the exchange, corresponding to *senderType* E. **Allowed Values for Exchange ID** (When *senderType* = E) **BOX** BOX Options Exchange **BSTX** Boston Security Token Exchange **CBOE** Cboe Exchange **C2** Cboe C2 Options **BYX** Cboe BYX Exchange **BZX** Cboe BZX Equities **BZXOP** Cboe BZX Options **EDGA** Cboe EDGA Exchange **EDGX** Cboe EDGX Equities **EDGXOP** Cboe EDGX Options **IEX** Investor's Exchange **LTSE** Long Term Stock Exchange **MEMX** Members Exchange **MIAMI** Miami International Securities Exchange **PEARL** MIAX PEARL **PEARLEQ** MIAX PEARL Equities **EMLD** MIAX Emerald **BX** Nasdaq BX Equities

Field Name	Data Type	Description
		NOBO Nasdaq BX Options **PSX** Nasdaq PHLX Equities **PHLX** Nasdaq PHLX Options **NSDQ** Nasdaq Stock **NOM** Nasdaq Options **ISE** Nasdaq ISE **GEMX** Nasdaq GEMX **MRX** Nasdaq MRX **AMER** NYSE American Equities **AMEROP** NYSE American Options **ARCA** NYSE ARCA Equities **ARCAOP** NYSE ARCA Options **NYSE** The New York Stock Exchange **CHX** NYSE CHX **NSX** NYSE National
senderType	Choice	Identifies from where a routed order originated. **Allowed Values:** **F** Industry Member **E** Exchange **O** OTC Equity symbol in a foreign security was sent by another Industry Member, who may not have a CAT reporting obligation
seqNum	Alphanumeric (40)	ATS only field. The sequence number of the event, used to sequence events when multiple events have the same timestamp. The sequence number is required to be an increasing value for a CAT Reporter, Event Date, and symbol, such that it can be used to sequence events having the same event timestamp in chronological order. Refer to Section 2.3.1 Timestamps and Section 3.1.3 Sequence Number.
session	Text (40)	The identifier representing the name or identifier of the session used when routing to an exchange. *Session* may be blank or populated with any string value that is shared between sender and receiver. Used to ensure a unique Route Linkage Key. Refer to the Order Routing Field Mapping document published on the IM Technical Specifications page of the CAT Public Website.
settlementDate	Date	The settlement date of the securities being allocated
side	Choice	Side of the event. **Allowed Values:** **B** Buy **SL** Sell Long **SS** Short Sale **SX** Short Sale Exempt

Field Name	Data Type	Description
sideDetailsInd	Choice	Identifies if a Trade event is one sided, and which side of the trade the Industry Member is populating in the Trade Side Details. **Allowed Values:** **BUY** The Trade event is one sided, and the reporter is on the Buy side of the trade. Only the *buyDetails* are populated. **SELL** The Trade event is one sided, and the reporter is on the Sell side of the trade. Only the *sellDetails* are populated. **NA** Not Applicable – the Trade event is not one sided.
solicitationFlag	Boolean	Indicates if the order was originated in response to an RFQ or other solicitation process. This field is not used to indicate if a registered representative of the firm solicited a client order. **Allowed Values:** **true** Event was received or originated as the result of a response to an RFQ or other solicitation process. **false** Event was not received or originated as the result of a response to an RFQ or other solicitation process.
symbol	Symbol	The symbol of the stock in the symbology of the primary listing exchange or FINRA OTC symbology for OTC Equity Securities.
tapeTradeID	Text (40)	The unique identifier reported by the Industry Member to the TRF/ADF/ORF based on the reporting specifications of the specific facility. Required when the *tapeTradeID* was supplied to a transaction reporting system: • Compliance ID in ORF and ADF • Branch Sequence Number in FINRA/NQ TRF • FINRA Control Number in FINRA/NYSE TRF Must be unique per combination of Event Date, *CATReporterIMID*, *marketCenterID* and *symbol*. The *tapeTradeID* may link to either the reporting side or the contra-side of the media tape report.
timeInForce	Name/Value Pair	Specifies the Time-In-Force for an order. **Allowed Values:** **DAY** A day order. Requires the expiration date which must be equal to Event Date or Event Date plus one Trading Day. Data Type: Date **IOC** Immediate or Cancel **IOR** Immediate or Return. Only applicable to options floor brokers. **GTC** Good till Cancelled **GTT** Good till Time. Requires the expiration timestamp. Data Type: Timestamp

Field Name	Data Type	Description
		GTD Good till Date Requires the expiration date. Data Type: Date **GTM** Good this Month (valid until last business day of the month in which the order originated) **GTX** Good till Crossing. Requires the expiration date which must be equal to Event Date or Event Date plus one Trading Day. Data Type: Date
tradeDate	Date	The trade date of the securities being allocated
tradeID	Text (64)	The internal trade ID assigned to the trade event by the Industry Member. The combination of *tradeKeyDate*, *CATReporterIMID*, *symbol*, and *tradeID* must be unique.
tradeKeyDate	Timestamp	The date and time the *tradeID* was assigned. Used to support uniqueness of a Trade Key. If time is not needed to guarantee a unique Trade Key, the time portion may be populated with zeros.
tradingSession	Choice	The trading session(s) during which an order is eligible to trade. **Allowed Values:** **FOR** To be executed only on a Foreign Market **PRE** Pre-Market Only **PREREG** Pre-Market and Regular **REG** Regular Only **REGPOST** Regular and Post-Market **POST** Post-Market Only **PREPOST** Pre-Market and Post-Market **ALL** All Sessions - order can trade in any available session at the venue where it is sent. Refer to FAQ D32 for additional information.
triggerPrice	Price	The price at which the order became effective. Required in scenarios where the trigger price was not explicitly captured in the *handlingInstructions* field on the related new order (e.g. Stop Formula, Trailing Stop)
type	Message Type	Specifies the event type. **Equity Events:** **MENO** New Order **MENOS** New Order Supplement **MEOR** Order Route Event **MEORS** Order Route Supplement Event **MEMR** Route Modified **MECR** Route Cancelled **MEOA** Order Accepted **MEIR** Order Internal Route Accepted **MEIM** Order Internal Route Modified **MEIC** Order Internal Route Cancelled **MECO** Child Order

Field Name	Data Type	Description
		MECOM Child Order Modified **MECOC** Child Order Cancelled **MEOM** Order Modified **MEOMR** Order Modification Request **MEOMS** Order Modified Supplement **MEOJ** Order Adjusted **MEOC** Order Cancelled **MEOCR** Order Cancel Request **MENQ** New Quote **MEQR** Quote Received **MEQC** Quote Cancelled **MEOT** Trade **MEOTS** Trade Supplement **MEOF** Order Fulfillment **MEOFS** Order Fulfillment Supplement **MEFA** Order Fulfillment Amendment **MEPA** Post Trade Allocation **MEAA** Amended Allocation **MEOE** Order Effective **Option Events:** **MONO** New Option Order **MONOS** Option Order Supplement **MONP** Paired Option Order **MOOR** Option Order Route **MOMR** Option Route Modified **MOCR** Option Route Cancelled **MOOA** Option Order Accepted **MOIR** Option Order Internal Route Accepted **MOIM** Option Order Internal Route Modified **MOIC** Option Order Internal Route Cancelled **MOCO** Child Option Order **MOCOM** Child Option Order Modified **MOCOC** Child Option Order Cancelled **MOOM** Option Order Modified **MOOMS** Option Order Modified Supplement **MOOJ** Option Order Adjusted **MOOC** Option Order Cancelled **MOOF** Option Order Fulfillment **MOFA** Option Order Fulfillment Amendment **MOPA** Option Post Trade Allocation **MOAA** Option Post Trade Amended Allocation
unsolicitedInd	Choice	Indicates when the quote is unsolicited. **Allowed Values:** **U** Unsolicited Bid and Ask

Field Name	Data Type	Description
		A Unsolicited Ask **B** Unsolicited Bid **N** Not Unsolicited
unpricedInd	Boolean	Indicates when a quote is unpriced. **Allowed Values:** **true** quote is unpriced **false** quote is not unpriced
workingPrice	Price	ATS only field. The working price of the order. If the price at which an order is currently priced on the matching engine is different that the stated limit price, the current price at which the order is priced on the matching engine should be populated. For example, in a PEG order, the adjusted price due to NBBO movement if the ATS repriced the order must be captured in *workingPrice.* If an ATS does not maintain a separate working price within its matching engine, this field would not be applicable.

Appendix H: Processing Stages Feedback and Examples

This section describes the types of validations, feedback files and associated error files that are generated by CAT during each processing stage. Related examples are included representing the Meta Feedback and Data Feedback.

H.1: Processing Stages Feedback

The table below contains types of validations generated by CAT at different stages of processing for both the Data File and the Metadata File

Table 106: Processing Stages Types of Validation and Associated Feedback

Processing Stage	Validations	Meta File Validation	Data File Validation	Record Validation	Error Feedback
File Acknowledgement	Validate file name construct	✓	✓		Meta File and Data File with error are rejected
File Integrity	Duplicate file name	✓	✓		Feedback Meta is returned indicating the file for which the filename is duplicated is rejected
	Filename elements validations including submitter relationship	✓			Feedback Meta is returned indicating the Meta File is rejected
	Unreadable Meta file	✓			
	Meta File without a Data file	✓			
	Data File without a Meta file		✓		Feedback Meta is returned indicating the Data File is rejected
	Data file and Meta file paired but Hash not matching; file format not matching	✓	✓		
Data Ingestion	Unreadable data file		✓		Feedback Meta is returned indicating the Data File is rejected
	Record count mismatch		✓		

Processing Stage	Validations	Meta File Validation	Data File Validation	Record Validation	Error Feedback
	Validate Events correct syntax and semantics associated with record length, field length, data type, non-null and reference data checks			✓	Feedback Meta is returned indicating the Data File has Errors; Feedback Error Data file is returned with errors
Linkage Discovery	Validate Events, Event Keys and Linkage Keys are not duplicated			✓	Feedback Meta is returned indicating Linkage Discovery Errors have been detected; Feedback Error Data file is returned with errors
	Perform Linkage and Out of Sequence checks			✓	

H.2: File Feedback (JSON)

The tables below illustrate examples of file feedback associated with all stages of processing when an Industry Member submits a data and meta file in JSON format.

Table 107: Successful Meta/Data Pair – No Errors

Successful Meta/Data Pair – No Errors			
Submission Files		Submission FileName	
Meta		SUBID_MYID_20170307_OrderEvents_000123.meta.json	
Data		SUBID_MYID_20170307_OrderEvents_000123.json.bz2	
Feedback Type	Feedback File Type	Feedback FileName	Feedback Content
Acknowledgement of Meta File	Meta	SUBID_MYID_20170307_OrderEvents_000123.meta.ack.json	{ "feedbackVersion": "2.2.1", "submitter": "SUBID", "reporter": "MYID", "fileGenerationDate": 20170307, "fileName": "SUBID_MYID_20170307_OrderEvents_000123.meta.json",

Successful Meta/Data Pair – No Errors			
			"receiptTimestamp": "20170307T153552.000001089", "stage": "FILE_ACKNOWLEDGEMENT", "stageCompleteTimestamp": "20170307T154152.000001089", "status": "Success" }

Acknowledgement of Data File	Meta	SUBID_MYID_20170307_OrderEvents_000123.ack.json	{
			"feedbackVersion": "2.2.1",
			"submitter": "SUBID",
			"reporter": "MYID",
			"fileGenerationDate": 20170307,
			"fileName":
			"SUBID_MYID_20170307_OrderEvents_000123.json.bz2",
			"receiptTimestamp": "20170307T153552.000001089",
			"stage": "FILE_ACKNOWLEDGEMENT",
			"stageCompleteTimestamp": "20170307T154152.000001089",
			"status": "Success"
			}

Integrity of Meta File	n/a	None	None

Integrity of Data File	Meta	SUBID_MYID_20170307_OrderEvents_000123.integrity.json	{
			"feedbackVersion": "2.2.1",
			"submitter": "SUBID",
			"reporter": "MYID",
			"fileGenerationDate": 20170307,
			"fileName":
			"SUBID_MYID_20170307_OrderEvents_000123.json.bz2",
			"receiptTimestamp": "20170307T153552.000001089", "stage":
			"FILE_INTEGRITY",
			"stageCompleteTimestamp": "20170307T154152.000001089",
			"status": "Success",
			"metaFileName":
			"SUBID_MYID_20170307_OrderEvents_000123.meta.json"
			}

Ingestion	Meta	SUBID_MYID_20170307_OrderEvents_000123.ingestion.json	{ "feedbackVersion": "2.2.1", "submitter": "SUBID", "reporter": "MYID", "fileGenerationDate": 20170307, "fileName": "SUBID_MYID_20170307_OrderEvents_000123.json.bz2", "receiptTimestamp": "20170307T153552.000001089",

Successful Meta/Data Pair – No Errors			
			"stage": "INGESTION", "stageCompleteTimestamp": "20170307T154152.000001089", "status": "Success", "errorCount": 0, "metaFileName": "SUBID_MYID_20170307_OrderEvents_000123.meta.json" }
	Data	None	None

Linkage Discovery	Meta	SUBID_MYID_20170307_OrderEvents.linkage_000001.json	{
			"feedbackVersion": "2.2.1",
			"submitter": "SUBID",
			"reporter": "MYID",
			"fileGenerationDate": 20170307,
			"stage": "LINKAGE",
			"stageCompleteTimestamp": "20170308T104152.000001089",
			"status": "Success",
			"errorCount": 0,
			
			"errorDetails": [
			{
			"linkageType": "Intrafirm",
			"errorTypeCount": 0
			},
			{
			"linkageType": "Interfirm",
			"errorTypeCount": 0
			},
			{
			"linkageType": "Exchange",
			"errorTypeCount": 0
			},
			{
			"linkageType": "Trade",
			"errorTypeCount": 0
			}
			],
			"doneForDay": true
			}

	Data	None	None

Table 108: Acknowledgement Error for Data or Meta File

Acknowledgement Error for Data or Meta File			
Submission Files		Submission FileName	
Data File		SUBID_MYID_201703.bz2	
Meta File		SUBID_MYID_201703.meta	
Feedback Type	Feedback File Type	Feedback FileName	Feedback Content
Acknowledgement of Data File	n/a	SUBID_MYID_201703.ack.error	Empty
Acknowledgement of Meta File	n/a	SUBID_MYID_201703.meta.ack.error	Empty
Integrity	Meta	None	None
Ingestion	Meta	None	None
	Data	None	None
Linkage Discovery	Meta	None	None
	Data	None	None

Table 109: File Integrity Error of Meta or Data File

File Integrity Error of Meta or Data File	
Submission Files	Submission FileName
Meta	SUBID_MYID_20170307_OrderEvents_000123.meta.json
Data	SUBID_MYID_20170307_OrderEvents_000123.json.bz2

Feedback Type	Feedback File Type	Feedback FileName	Feedback Content

Acknowledgement of Meta File	Meta	SUBID_MYID_20170307_OrderEvents_000123.meta.ack.json	{
			"feedbackVersion": "2.2.1",
			"submitter": "SUBID",
			"reporter": "MYID",
			"fileGenerationDate": 20170307,
			"fileName":
			"SUBID_MYID_20170307_OrderEvents_000123.meta.json",
			"receiptTimestamp": "20170307T153552.000001089",
			"stage": "FILE_ACKNOWLEDGEMENT",
			"stageCompleteTimestamp": "20170307T153652.000001089",
			"status": "Success"
			}

Acknowledgement of Data File	Meta	SUBID_MYID_20170307_OrderEvents_000123.ack.json	{
			"feedbackVersion": "2.2.1",
			"submitter": "SUBID",
			"reporter": "MYID",
			"fileGenerationDate": 20170307,
			"fileName":
			"SUBID_MYID_20170307_OrderEvents_000123.json.bz2",
			"receiptTimestamp": "20170307T153552.000001089",
			"stage": "FILE_ACKNOWLEDGEMENT",
			"stageCompleteTimestamp": "20170307T154152.000001089",
			"status": "Success"
			}

Integrity of Meta File	Meta	SUBID_MYID_20170307_OrderEvents_000123.meta.integrity.json	{
			"feedbackVersion": "2.2.1",
			"submitter": "SUBID",
			"reporter": "MYID",
			"fileGenerationDate": 20170307,
			"fileName":
			"SUBID_MYID_20170307_OrderEvents_000123.meta.json",
			"receiptTimestamp": "20170307T153553.000001089",
			"stage": "FILE_INTEGRITY",
			"stageCompleteTimestamp": "20170307T154152.000001089",
			"status": "Failure",
			"severity": "Error",
			"code": [1107]
			}

Integrity of Data File	Meta	SUBID_MYID_20170307_OrderEvents_000123.integri	{ "feedbackVersion": "2.2.1", "submitter": "SUBID",

		ty.json	"reporter": "MYID", "fileGenerationDate": 20170307, "fileName": "SUBID_MYID_20170307_OrderEvents_000123.json.bz2", "receiptTimestamp": "20170307T153552.000001089", "stage": "FILE_INTEGRITY", "stageCompleteTimestamp": "20170307T154152.000001089", "status": "Failure", "severity": "Error", "code": [1121] }
Ingestion	Meta	None	None
	Data	None	None
Linkage Discovery	Meta	None	None
	Data	None	None

Table 110: File Integrity Error of Meta File with Multiple Blocks

File Integrity Error of Meta File with Multiple Blocks			
Submission Files		Submission FileName	
Meta		SUBID_MYID_20170307_OrderEvents_000124.meta.json	
Feedback Type	Feedback File Type	Feedback FileName	Feedback Content
Acknowledgement of Meta File	Meta	SUBID_MYID_20170307_OrderEvents_000124.meta.ack.json	{ "feedbackVersion": "2.2.1", "submitter": "SUBID", "reporter": "MYID", "fileGenerationDate": 20170307, "fileName": "SUBID_MYID_20170307_OrderEvents_000124.meta.json", "receiptTimestamp": "20170307T153552.000001089", "stage": "FILE_ACKNOWLEDGEMENT", "stageCompleteTimestamp": "20170307T154152.000001089", "status": "Success"

File Integrity Error of Meta File with Multiple Blocks			
			}

Integrity of Meta File	Meta	SUBID_MYID_20170307_OrderEvents_000124.meta.integrity.json	{
			  "feedbackVersion": "2.2.1",
			  "submitter": "SUBID",
			  "reporter": "MYID",
			  "fileGenerationDate": 20170307,
			  "fileName": "SUBID_MYID_20170307_OrderEvents_000124.meta.json",
			  "receiptTimestamp": "20170307T153552.000001089",
			  "stage": "FILE_INTEGRITY",
			  "stageCompleteTimestamp": "20170307T154152.000001089",
			  "status": "Failure",
			  "severity": "Error",
			  "errorDetails": [{
			"blockFileName":"SUBID_MYID_20170307_OrderEvents_000123.json.bz2",
			  "code":[1121]},
			{"blockFileName":"SUBID_MYID_20170307_OrderEvents_000122.json.bz2",
			  "code":[1121]}
			  ]
			}

Ingestion	n/a	None	None
Linkage Discovery	n/a	None	None

Table 111: File Ingestion Error – Data File is not Readable

File Ingestion Error - Data File is not Readable	
Submission File Type	Submission FileName
Meta File	SUBID_MYID_20170307_OrderEvents_000123.meta.json
Data File	SUBID_MYID_20170307_OrderEvents_000123.json.bz2

File Ingestion Error - Data File is not Readable			
Feedback Type	Feedback File Type	Feedback FileName	Feedback Content

Acknowledgement	Meta	SUBID_MYID_20170307_OrderEvents_000123.ack.json	{
			"feedbackVersion": "2.2.1",
			"submitter": "SUBID",
			"reporter": "MYID",
			"fileGenerationDate": 20170307,
			"fileName": "SUBID_MYID_20170307_OrderEvents_000123.json.bz2",
			"receiptTimestamp": "20170307T153552.000001089",
			"stage": "FILE_ACKNOWLEDGEMENT",
			"stageCompleteTimestamp": "20170307T154152.000001089",
			"status": "Success"
			}

Integrity	Meta	SUBID_MYID_20170307_OrderEvents_000123.integrity.json	{
			"feedbackVersion": "2.2.1",
			"submitter": "SUBID",
			"reporter": "MYID",
			"fileGenerationDate": 20170307,
			"fileName": "SUBID_MYID_20170307_OrderEvents_000123.json.bz2",
			"receiptTimestamp": "20170307T153552.000001089",
			"stage": "FILE_INTEGRITY",
			"stageCompleteTimestamp": "20170307T154152.000001089",
			"status": "Success",
			"metaFileName": "SUBID_MYID_20170307_OrderEvents_000123.meta.json"
			}

Ingestion	Meta	SUBID_MYID_20170307_OrderEvents_000123.ingestion.json	{ "feedbackVersion": "2.2.1", "submitter": "SUBID", "reporter": "MYID", "fileGenerationDate": 20170307, "fileName": "SUBID_MYID_20170307_OrderEvents_000123.json.bz2", "receiptTimestamp": "20170307T153552.000001089", "stage": "INGESTION", "stageCompleteTimestamp": "20170307T154152.000001089", "status": "Failure", "severity": "Error", "code": 2153,

File Ingestion Error - Data File is not Readable			
			"metaFileName": "SUBID_MYID_20170307_OrderEvents_000123.meta.json" }
	Data	None	None
Linkage Discovery	Meta	None	None
	Data	None	None

Table 112: Data File having Ingestion and Linkage Errors

Data File having Ingestion and Linkage Errors			
Submission Files		Submission FileName	
Meta		SUBID_MYID_20170307_OrderEvents_000123.meta.json	
Data		SUBID_MYID_20170307_OrderEvents_000123.json.bz2	
Feedback Type	Feedback File Type	Feedback FileName	Feedback Content
Acknowledgement of Data File	Meta	SUBID_MYID_20170307_OrderEvents_000123.ack.json	{ "feedbackVersion": "2.2.1", "submitter": "SUBID", "reporter": "MYID", "fileGenerationDate": 20170307, "fileName": "SUBID_MYID_20170307_OrderEvents_000123.json.bz2", "receiptTimestamp": "20170307T153552.000001089", "stage": "FILE_ACKNOWLEDGEMENT", "stageCompleteTimestamp": "20170307T154152.000001089", "status": "Success" }
Integrity of Data File	Meta	SUBID_MYID_20170307_OrderEvents_000123.integrity.json	{ "feedbackVersion": "2.2.1", "submitter": "SUBID", "reporter": "MYID", "fileGenerationDate": 20170307,

Data File having Ingestion and Linkage Errors			
			"fileName": "SUBID_MYID_20170307_OrderEvents_000123.json.bz2", "receiptTimestamp": "20170307T153552.000001089", "stage": "FILE_INTEGRITY", "stageCompleteTimestamp": "20170307T154152.000001089", "status": "Success", "metaFileName": "SUBID_MYID_20170307_OrderEvents_000123.meta.json" }

Ingestion	Meta	SUBID_MYID_20170307_OrderEvents_000123.ingestion.json	{
			"feedbackVersion": "2.2.1",
			"submitter": "SUBID",
			"reporter": "MYID",
			"fileGenerationDate": 20170307,
			"fileName":
			"SUBID_MYID_20170307_OrderEvents_000123.json.bz2",
			"receiptTimestamp": "20170307T153552.000001089",
			"stage": "INGESTION",
			"stageCompleteTimestamp": "20170307T154152.000001089",
			"status": "Failure",
			"errorFileName":
			"SUBID_MYID_20170307_OrderEvents_000123.ingestion.error.json.bz2",
			"errorCount": 2,
			"metaFileName":
			"SUBID_MYID_20170307_OrderEvents_000123.meta.json"
			}

	Error	SUBID_MYID_20170307_OrderEvents_000123.ingestion.error.json.bz2	{
			"errorCode": [2001,2002]
			"actionType": "RPR"
			"errorROEID": 123456
			"errorRecord": {<error record>}
			}
			{
			"errorCode": [2003]
			"actionType": "RPR"
			"errorROEID": 123457
			"errorRecord": {<error record>}
			}

Linkage Discovery	Meta	SUBID_MYID_20170307_OrderEvents_000001.linkage.json	{ "feedbackVersion": "2.2.1", "submitter": "SUBID", "reporter": "MYID",

Data File having Ingestion and Linkage Errors			

			"fileGenerationDate": 20170307,
			"stage": "LINKAGE",
			"stageCompleteTimestamp": "20170308T114152.000001089",
			"status": "Failure",
			"errorFileName":
			"SUBID_MYID_20170307_OrderEvents.linkage.error_000001.json.bz2",
			"errorCount": 2
			
			"errorDetails": [
			{
			"linkageType": "Intrafirm",
			"errorTypeCount": 1
			},
			{
			"linkageType": "Interfirm",
			"errorTypeCount": 1
			},
			{
			"linkageType": "Exchange",
			"errorTypeCount": 0
			},
			{
			"linkageType": "Trade",
			"errorTypeCount": 0
			}
			],
			"doneForDay": true,
			"metaFileName":
			"SUBID_MYID_20170307_OrderEvents_000123.meta.json"
			}

	Error	SUBID_MYID_20170307_OrderEvents.linkage.error_000001.json.bz2	{
			"errorCode": [3002,3003]
			"actionType": "RPR"
			"errorROEID": 123456
			"errorRecord": {<errorRecord>}
			}
			{
			"errorCode": [8010]
			"actionType": "RPR"
			"errorROEID": 123457
			"errorRecord": {<linkage key information>}
			}

Table 113: Successful Meta/Data Pair Deletion Instruction

Successful Meta/Data Pair File Delete Instruction – No Errors			
Submission Files		Submission FileName	
Meta		SUBID_MYID_20170307_OrderEvents_000123.meta.DEL.json	
Data – Empty File		SUBID_MYID_20170307_OrderEvents_000123.DEL.json.bz2	
Feedback Type	Feedback File Type	Feedback FileName	Feedback Content

Acknowledgement of Meta File	Meta	SUBID_MYID_20170307_OrderEvents_000123.meta.DEL.ack.json	{
			"feedbackVersion": "2.2.1",
			"submitter": "SUBID",
			"reporter": "MYID",
			"fileGenerationDate": 20170307,
			"fileName":
			"SUBID_MYID_20170307_OrderEvents_000123.meta.DEL.json",
			"receiptTimestamp": "20170307T153552.000001089",
			"stage": "FILE_ACKNOWLEDGEMENT",
			"stageCompleteTimestamp": "20170307T154152.000001089",
			"status": "Success"
			}

Acknowledgement of Data File	Meta	SUBID_MYID_20170307_OrderEvents_000123.DEL.ack.json	{
			"feedbackVersion": "2.2.1",
			"submitter": "SUBID",
			"reporter": "MYID",
			"fileGenerationDate": 20170307,
			"fileName":
			"SUBID_MYID_20170307_OrderEvents_000123.DEL.json.bz2",
			"receiptTimestamp": "20170307T153552.000001089",
			"stage": "FILE_ACKNOWLEDGEMENT",
			"stageCompleteTimestamp": "20170307T154152.000001089",
			"status": "Success"
			}

Integrity of Meta File	n/a	None	None

Successful Meta/Data Pair File Delete Instruction – No Errors			
Integrity of Data File	Meta	SUBID_MYID_20170307_OrderEvents_000123.DEL.integrity.json	{ "feedbackVersion": "2.2.1", "submitter": "SUBID", "reporter": "MYID", "fileGenerationDate": 20170307, "fileName": "SUBID_MYID_20170307_OrderEvents_000123.DEL.json.bz2", "receiptTimestamp": "20170307T153552.000001089", "stage": "FILE_INTEGRITY", "stageCompleteTimestamp": "20170307T154152.000001089", "status": "Success", "metaFileName": "SUBID_MYID_20170307_OrderEvents_000123.meta.DEL.json"}
Ingestion	Meta	None	None
	Data	None	None
Linkage Discovery	Meta	None	None
	Data	None	None

Table 114: File Integrity Error - Invalid File Deletion Instruction

File Ingestion Error – Invalid File Delete Instruction			
Submission Files		Submission FileName	
Meta		SUBID_MYID_20170307_OrderEvents_000123.meta.DEL.json	
Data		SUBID_MYID_20170307_OrderEvents_000123.DEL.json.bz2	
Feedback Type	Feedback File Type	Feedback FileName	Feedback Content
Acknowledgement of Meta File	Meta	SUBID_MYID_20170307_OrderEvents_000123.meta.DEL.ack.json	{ "feedbackVersion": "2.2.1", "submitter": "SUBID", "reporter": "MYID", "fileGenerationDate": 20170307,

File Ingestion Error – Invalid File Delete Instruction			
Submission Files		Submission FileName	
Meta		SUBID_MYID_20170307_OrderEvents_000123.meta.DEL.json	
Data		SUBID_MYID_20170307_OrderEvents_000123.DEL.json.bz2	
Feedback Type	Feedback File Type	Feedback FileName	Feedback Content
			"fileName": "SUBID_MYID_20170307_OrderEvents_000123.meta.DEL.json", "receiptTimestamp": "20170307T153552.000001089", "stage": "FILE_ACKNOWLEDGEMENT", "stageCompleteTimestamp": "20170307T154152.000001089", "status": "Success" }

Acknowledgement of Data File	Meta	SUBID_MYID_20170307_OrderEvents_000123.DEL.ack.json	{
			"feedbackVersion": "2.2.1",
			"submitter": "SUBID",
			"reporter": "MYID",
			"fileGenerationDate": 20170307,
			"fileName": "SUBID_MYID_20170307_OrderEvents_000123.DEL.json.bz2",
			"receiptTimestamp": "20170307T153552.000001089",
			"stage": "FILE_ACKNOWLEDGEMENT",
			"stageCompleteTimestamp": "20170307T154152.000001089",
			"status": "Success"
			}

Integrity of Meta File	n/a	None	None
Integrity of Data File	Meta	SUBID_MYID_20170307_OrderEvents_000123.DEL.integrity.json	{ "feedbackVersion": "2.2.1", "submitter": "SUBID", "reporter": "MYID", "fileGenerationDate": 20170307, "fileName": "SUBID_MYID_20170307_OrderEvents_000123.DEL.json.bz2", "receiptTimestamp": "20170307T153552.000001089", "stage": "FILE_INTEGRITY", "stageCompleteTimestamp": "20170307T154152.000001089", "status": "Failure", "severity": "Error",

File Ingestion Error – Invalid File Delete Instruction			
Submission Files		Submission FileName	
Meta		SUBID_MYID_20170307_OrderEvents_000123.meta.DEL.json	
Data		SUBID_MYID_20170307_OrderEvents_000123.DEL.json.bz2	
Feedback Type	Feedback File Type	Feedback FileName	Feedback Content
			"code": 1120, "metaFileName": "SUBID_MYID_20170307_OrderEvents_000123.meta.DEL.json"}
Ingestion	Meta	None	None
	Data	None	None
Linkage Discovery	Meta	None	None
	Data	None	None

H.3: File Feedback (CSV)

The tables below illustrate examples of file feedback associated with all stages of processing when an Industry Member submits a data and meta file in CSV format.

Table 115: Successful Meta/Data Pair

Successful Meta/Data Pair – No Errors			
Submission Files		Submission FileName	
Meta		SUBID_MYID_20170307_OrderEvents_000123.meta.csv	
Data		SUBID_MYID_20170307_OrderEvents_000123.csv.bz2	
Feedback Type	Feedback File Type	Feedback FileName	Feedback Content
Acknowledgement of Meta File	Meta	SUBID_MYID_20170307_OrderEvents_000123.meta.ack.csv	s.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000123.meta.csv, 20170307T153552.000001089,FILE_ACKNOWLEDGEMENT, 20170307T154152.000001089,Success,,,,,,,
Acknowledgement of Data File	Meta	SUBID_MYID_20170307_OrderEvents_000123.ack.csv	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000123.csv.bz2, 20170307T153552.000001089,FILE_ACKNOWLEDGEMENT, 20170307T154152.000001089,Success,,,,,,,
Integrity of Meta File	n/a	None	None
Integrity of Data File	Meta	SUBID_MYID_20170307_OrderEvents_000123.integrity.csv	3.1.0,SUBID,MYID,20170307,SUBID_MYID_20170307_OrderEvents_000123.csv.bz2,20170307T153552.000001089,FILE_INTEGRITY,20170307T154152.000001089,Success,,,,,,, SUBID_MYID_20170307_OrderEvents_000123.meta.csv
Ingestion	Meta	SUBID_MYID_20170307_OrderEvents_000123.ingestion.csv	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000123.csv.bz2, 20170307T153552.000001089,INGESTION, 20170307T154152.000001089,Success,,,,0,,, SUBID_MYID_20170307_OrderEvents_000123.meta.csv
	Data	None	None
Linkage Discovery	Meta	SUBID_MYID_20170307_OrderEvents.linkage_000001.csv	3.1.0,SUBID,MYID,20170307,,,LINKAGE, 20170308T104152.000001089,Success,,,,0, Intrafirm@0|Interfirm@0|Exchange@0|Trade@0,true,

Successful Meta/Data Pair – No Errors			
Submission Files		Submission FileName	
Meta		SUBID_MYID_20170307_OrderEvents_000123.meta.csv	
Data		SUBID_MYID_20170307_OrderEvents_000123.csv.bz2	
Feedback Type	Feedback File Type	Feedback FileName	Feedback Content
	Data	None	None

Table 116: Acknowledgement Error for Data or Meta File

Acknowledgement Error for Data or Meta File			
Submission Files		Submission FileName	
Data File		SUBID_MYID_201703.bz2	
Meta File		SUBID_MYID_201703.meta	
Feedback Type	Feedback File Type	Feedback FileName	Feedback Content
Acknowledgement of Data File	n/a	SUBID_MYID_201703.ack.error	Empty
Acknowledgement of Meta File	n/a	SUBID_MYID_201703.meta.ack.error	Empty
Integrity	Meta	None	None
Ingestion	Meta	None	None
	Data	None	None
Linkage Discovery	Meta	None	None
	Data	None	None

Table 117: File Integrity Error of Meta or Data File

File Integrity Error of Meta or Data File			
Submission Files		Submission FileName	
Meta		SUBID_MYID_20170307_OrderEvents_000123.meta.csv	
Data		SUBID_MYID_20170307_OrderEvents_000123.csv.bz2	
Feedback Type	Feedback File Type	Feedback FileName	Feedback Content
Acknowledgement of Meta File	Meta	SUBID_MYID_20170307_OrderEvents_000123.meta.ack.csv	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000123.meta.csv, 20170307T153552.000001089,FILE_ACKNOWLEDGEMENT, 20170307T154152.000001089,Success,,,,,,,
Acknowledgement of Data File	Meta	SUBID_MYID_20170307_OrderEvents_000123.ack.csv	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000123.csv.bz2, 20170307T153552.000001089,FILE_ACKNOWLEDGEMENT, 20170307T154152.000001089,Success,,,,,,,
Integrity of Meta File	Meta	SUBID_MYID_20170307_OrderEvents_000123.meta.integrity.csv	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000123.meta.csv, 20170307T153552.000001089,FILE_INTEGRITY,20170307T154152.000001089,Failure,Error,1107,,,,,
Integrity of Data File	Meta	SUBID_MYID_20170307_OrderEvents_000123.integrity.csv	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000123.csv.bz2, 20170307T153552.000001089,FILE_INTEGRITY,20170307T154152.000001089,Failure,Error,1107,,,,,
Ingestion	Meta	None	None
	Data	None	None
Linkage Discovery	Meta	None	None

File Integrity Error of Meta or Data File			
	Data	None	None

Table 118: File Integrity Error of Meta File with Multiple Blocks

File Integrity Error of Meta File with Multiple Blocks			
Submission Files		Submission FileName	
Meta		SUBID_MYID_20170307_OrderEvents_000124.meta.csv	
Feedback Type	Feedback File Type	Feedback FileName	Feedback Content
Acknowledgement of Meta File	Meta	SUBID_MYID_20170307_OrderEvents_000124.meta.ack.csv	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000124.meta.csv, 20170307T153552.000001089,FILE_ACKNOWLEDGEMENT, 20170307T154152.000001089,Success,,,,,,,
Integrity of Meta File	Meta	SUBID_MYID_20170307_OrderEvents_000124.meta.integrity.csv	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000124.csv.bz2, 20170307T153552.000001089,FILE_INTEGRITY, 20170307T154152.000001089,Failure,Error,,,, SUBID_MYID_20170307_OrderEvents_000123.csv.bz@1121| SUBID_MYID_20170307_OrderEvents_000122.csv.bz2@1121,,
Ingestion	Meta	None	None
	Data	None	None
Linkage Discovery	Meta	None	None
	Data	None	None

Table 119: File Ingestion Error – Data File is not Readable

File Ingestion Error - Data File is not readable			
Submission File Type		Submission FileName	
Meta File		SUBID_MYID_20170307_OrderEvents_000123.meta.csv	
Data File		SUBID_MYID_20170307_OrderEvents_000123.csv.bz2	
Feedback Type	Feedback File Type	Feedback FileName	Feedback Content
Acknowledgement	Meta	SUBID_MYID_20170307_OrderEvents_000123.ack.csv	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000123.csv.bz2, 20170307T153552.000001089,FILE_ACKNOWLEDGEMENT, 20170307T154152.000001089,Success,,,,,,,
Integrity	Meta	SUBID_MYID_20170307_OrderEvents_000123.integrity.csv	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000123.csv.bz2, 20170307T153552.000001089,FILE_INTEGRITY, 20170307T154152.000001089,Success,,,,,,, SUBID_MYID_20170307_OrderEvents_000123.meta.csv
Ingestion	Meta	SUBID_MYID_20170307_OrderEvents_000123.ingestion.csv	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000123.csv.bz2, ,INGESTION,20170307T154152.000001089,Failure,Error,2153,,,,, SUBID_MYID_20170307_OrderEvents_000123.meta.csv
	Data	None	None
Linkage Discovery	Meta	None	None
	Data	None	None

Table 120: Data File having Ingestion and Linkage Errors

Data File having Ingestion and Linkage Errors	
Submission Files	Submission FileName

Data File having Ingestion and Linkage Errors			
Meta		SUBID_MYID_20170307_OrderEvents_000123.meta.csv	
Data		SUBID_MYID_20170307_OrderEvents_000123.csv.bz2	
Feedback Type	Feedback File Type	Feedback FileName	Feedback Content
Acknowledgement of Data File	Meta	SUBID_MYID_20170307_OrderEvents_000123.ack.csv	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000123.csv.bz2, 20170307T153552.000001089,FILE_ACKNOWLEDGEMENT, 20170307T154152.000001089,Success,,,,,,
Integrity of Data File	Meta	SUBID_MYID_20170307_OrderEvents_000123.integrity.csv	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000123.csv.bz2, 20170307T153552.000001089,FILE_INTEGRITY, 20170307T154152.000001089,Success,,,,,, SUBID_MYID_20170307_OrderEvents_000123.meta.csv
Ingestion	Meta	SUBID_MYID_20170307_OrderEvents_000123.ingestion.csv	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000123.csv.bz2, ,INGESTION,20170307T154152.000001089,Failure,,, SUBID_MYID_20170307_OrderEvents_000123 .ingestion.error.csv.bz2,2,,, SUBID_MYID_20170307_OrderEvents_000123.meta.csv
	Error	SUBID_MYID_20170307_OrderEvents_000123.ingestion.error.csv.bz2	2001|2002,RPR,123456,<error record> 2003,RPR,123457,<error record>
Linkage Discovery	Meta	SUBID_MYID_20170307_OrderEvents.linkage_000001.csv	3.1.0,SUBID,MYID,20170307,,,LINKAGE, 20170308T104152.000001089,Failure,,, SUBID_MYID_20170307_linkage_OrderEvents .linkage.error_000001.csv.bz2,2, Intrafirm@1|Interfirm@1|Exchange@0|Trade@0,true,
	Error	SUBID_MYID_20170307_OrderEvents.linkage.error_000001.csv.bz2	3002|3003,RPR,123456,<errorRecord> 8010,RPR,123457,<linkage key information>

Table 121: Successful Meta/Data Pair File Delete Instruction

Successful Meta/Data Pair File Delete Instruction – No Errors			
Submission Files		Submission FileName	
Meta		SUBID_MYID_20170307_OrderEvents_000123.meta.DEL.csv	
Data		SUBID_MYID_20170307_OrderEvents_000123.DEL.csv.bz2	
Feedback Type	Feedback File Type	Feedback FileName	Feedback Content
Acknowledgement of Meta File	Meta	SUBID_MYID_20170307_OrderEvents_000123.meta.DEL.ack.csv	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000123.meta.DEL.csv, 20170307T153552.000001089,FILE_ACKNOWLEDGEMENT, 20170307T154152.000001089,Success,,,,,,,
Acknowledgement of Data File	Meta	SUBID_MYID_20170307_OrderEvents_000123.DEL.ack.csv	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000123.DEL.csv.bz2, 20170307T153552.000001089,FILE_ACKNOWLEDGEMENT, 20170307T154152.000001089,Success,,,,,,,
Integrity of Meta File	n/a	None	None
Integrity of Data File	Meta	SUBID_MYID_20170307_OrderEvents_000123.DEL.integrity.csv	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000123.DEL.csv.bz2, 20170307T153552.000001089,FILE_INTEGRITY, 20170307T154152.000001089,Success,,,,,,, SUBID_MYID_20170307_OrderEvents_000123.meta.DEL.csv
Ingestion	Meta	None	None
	Data	None	None
Linkage Discovery	Meta	None	None
	Data	None	None

Table 122: File Ingestion Error - Invalid File Deletion Instruction

File Ingestion Error – Invalid File Delete Instruction			
Submission Files		Submission FileName	
Meta		SUBID_MYID_20170307_OrderEvents_000123.meta.DEL.csv	
Data		SUBID_MYID_20170307_OrderEvents_000123.DEL.csv.bz2	
Feedback Type	Feedback File Type	Feedback FileName	Feedback Content
Acknowledgement of Meta File	Meta	SUBID_MYID_20170307_OrderEvents_000123.meta.DEL.ack.csv	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000123.meta.DEL.csv, 20170307T153552.000001089,FILE_ACKNOWLEDGEMENT, 20170307T154152.000001089,Success,,,,,,,
Acknowledgement of Data File	Meta	SUBID_MYID_20170307_OrderEvents_000123.DEL.ack.csv	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000123.DEL.csv.bz2, 20170307T153552.000001089,FILE_ACKNOWLEDGEMENT, 20170307T154152.000001089,Success,,,,,,,
Integrity of Meta File	n/a	None	None
Integrity of Data File	Meta	SUBID_MYID_20170307_OrderEvents_000123.DEL.integrity.csv	3.1.0,SUBID,MYID,20170307, SUBID_MYID_20170307_OrderEvents_000123.DEL.csv.bz2, 20170307T153552.000001089,FILE_INTEGRITY, 20170307T154152.000001089,Failure,Error,1120,,,,, SUBID_MYID_20170307_OrderEvents_000123.meta.DEL.csv
Ingestion	Meta	None	None
	Data	None	None
Linkage Discovery	Meta	None	None
	Data	None	None