

Reference Database

Technical Specifications

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Version 1.0.0

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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.

Executive Summary

This document describes the requirements for the reporting of Customer and Account reference data to CAT by Industry Members, including detailed information about data elements and file submission. It also describes how Industry Members submit files to CAT, including access instructions, network and transport options, and testing requirements.

A separate companion document containing detailed reporting scenarios entitled [Reference Database Reporting Scenarios](#) should be used as a guide for determining how the field values laid out in this document must be applied when reporting various scenarios for Customer and Account reference data.

Note: All Transformed Identifiers (“TIDs”) included in the examples for Social Security Numbers, Individual Taxpayer Identification Numbers, or Employer Identification Numbers (collectively, ‘SSN/ITIN’ and ‘EIN’), are generated from values that are outside of the acceptable range of assignment by the assigning body and would fail CAT data validations if actually reported to the Reference Database.

Table 1: Revision / Change Process

Version	Date	Author	Description
1.0	6/22/2026	Consolidated Audit Trail, LLC	Publication of initial version

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 (Customers¹). 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 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.

The Reference Database² is the separate system for submission of Customer and Account reference data. Per CAT NMS Plan requirements, for every *firmDesignatedID* with reportable activity to the Transaction database since June 12, 2022, Industry Members are required to report the same *firmDesignatedID* to the Reference Database in an FDID Record along with the required Customer reference data. In addition, Industry Members are required to report changes and additions to FDID

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).

² References to the Reference Database throughout this document are asserted to include both the Reference Data Subsystem and the separate CCID Subsystem, unless otherwise explicitly noted.

Records for “Active Accounts” previously accepted by the Reference Database. Section 1.1 of the CAT NMS Plan defines “Active Account” as “an account that has had activity in Eligible Securities within the last six months.” Industry Members are not required to report updates or changes to FDID Records that do not meet the Plan definition of “Active Account” but may optionally do so. Further, only reference data pertaining to “CAT Customers” of the reporting Industry Member, as defined in SEC Rule 613(j)(3), are required to be reported to the Reference Database. This includes FDID Records representing proprietary accounts of the Industry Member where the Industry Member itself is to be reported as the CAT Customer. See footnote 1 and the Glossary of this document for more information on the definition of “CAT Customer”.

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://catnmsplan.com/about-cat/cat-nms-plan>.

2. Reference Database Reporting Fundamentals

2.1. Key Data Elements

The sections below describe the key data elements of CAT used in Reference Database submission files. A Reference Database submission is comprised of two files – a Reference Data File and a Transformed Identifiers File – to facilitate separation of the Customer and Account reference data from the Transformed Identifier used to uniquely reference a single CAT Customer.

2.1.1. Firm Identifiers in File Submissions

The CAT submissions process relies on certain firm identifiers to determine whose data is being reported, and to determine and verify the authorization of the submitter of the data.

CAT Reporter CRD

The CAT Reporter CRD is the Industry Member's Central Registration Depository (CRD) number, used to ensure all Account and Customer reference data reporting activity of a single Industry Member can be consolidated at the CRD level in the Reference Database. The CAT Reporter CRD must be populated in the Reference Data filename and Transformed Identifiers filename as well as populated in the *catReporterCRD* field within the Reference Data File.

CAT Submitter ID

The CAT Submitter ID is a CAT-assigned identifier for a firm that submits data to CAT. The CAT Submitter ID uniquely identifies the CAT Submitter and may be a different identifier than the CAT Reporter CRD.

The CAT Submitter ID must be populated in the Reference Data filename and Transformed Identifiers filename as well as populated in the *catSubmitterID* field within the Reference Data File.

Industry Members may submit data for themselves or may authorize a separate CAT Submitter to report on their behalf. Authorization between the Industry Member and CAT Submitter is granted through a reporting relationship that is entered by the Industry Member via the CAT Reporter Portal. When a file is received, the Reference Database will verify that the Industry Member has authorized the CAT Submitter to submit on its behalf. See the [Reference Database Reporter Portal User Guide](#) for more information on reporting relationships.

Correspondent CRD

The Correspondent CRD is the CRD of the introducing broker or correspondent firm whose customer and account data is kept on record at the clearing firm. It is populated in the *correspondentCRD* field within the Reference Data File.

The *correspondentCRD* field is populated by clearing firms with introducing brokers or correspondents when reporting Accounts to the Reference Database that are custodied for their introducing brokers/correspondents, including DVP/RVP accounts.

The *correspondentCRD* field is at the main level within the JSON structure of the Reference Data File, and as such will apply to all records within the file. Thus, if the clearing firm custodies Accounts for multiple correspondent firms, Accounts for each individual correspondent must be grouped into a separate file. For firms reporting data of multiple correspondents, a separate file must be used for each *correspondentCRD*.

Since all FDID and Customer reference data included in a submission file will be associated to the *catReporterCRD* and *correspondentCRD* pairing, any rejections resulting from a submission must be repaired by resubmitting a file with the same *catReporterCRD* and *correspondentCRD* pairing. Thus, if an Industry Member submitted a file where the *catReporterCRD* and *correspondentCRD* values were the same, and records within the submission resulted in Data Validation errors, the Industry Member must resubmit a file with the same *catReporterCRD* and *correspondentCRD* values as the submission that resulted in errors. See [Section 6.5](#) for more information on error repair. A submission where *catReporterCRD* and *correspondentCRD* values were the same will be considered a submission for the CAT Reporter CRD (“self-reporting”).

The Reference Database will not validate that a business relationship exists between the clearing firm and the correspondent firm.

Note that clearing firms and introducing brokers/correspondents have their own separate and distinct Reference Database reporting obligation.

2.2. Reference Data

2.2.1. Firm Designated ID (FDID)

The CAT NMS Plan requires that for the original receipt or origination of an order, Industry Members must report the Firm Designated ID (FDID). FDID is reported in the *firmDesignatedID* field and is defined in Section 1.1 of the CAT NMS Plan as:

“(1) a unique and persistent identifier for each trading account designated by Industry Members for purposes of providing data to the Central Repository provided, however, such identifier may not be the account number for such trading account if the trading account is not a proprietary account; (2) a unique and persistent relationship identifier when an Industry Member does not have an account number available to its order handling and/or execution system at the time of order receipt, provided, however, such identifier must be masked; or (3) a unique and persistent entity identifier when an employee of an Industry Member is exercising discretion over multiple client accounts and creates an aggregated order for which a trading account number of the Industry Member is not available at the time of order origination, where each such identifier is unique among all identifiers from any given Industry Member.”

FDIDs are used to link order and allocation activity to specific CAT Customers, including mapping FDIDs with common ownership (for instance, where a CAT Customer is associated with more than one FDID). Therefore, an FDID is required to be populated on all Transaction order and allocation events requiring an FDID for equities, options and multi-leg events.

Industry Members must assign a single FDID to each trading Account that is unique, persistent and consistent within the Industry Member and across all vendors and systems the Industry Member may use to report Transaction order and allocation events requiring an FDID to CAT. Likewise, any associated Customer and Account reference data for the FDID must also be consistent within the Industry Member and across all vendors and systems used to report Reference Data to CAT. For example, if an Industry Member uses multiple vendors for reporting Transaction data to CAT, the Industry Member must ensure that all vendors use the same FDID for a particular trading Account in all CAT Transaction order and allocation events requiring an FDID, and that the same FDID associated with the trading Account is submitted to the Reference Database.

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)
- Proprietary Trading Account Number
- Industry Member-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

- Industry Member-assigned identifier (Entity ID) representing the Industry Member’s discretionary relationship with the client when an employee of the Industry Member is exercising discretion over multiple client accounts and creates an aggregated order for which a trading account number of the Industry Member is unavailable at the time of order origination.

An actual customer account number must not be used as the FDID for CAT reporting and the same guidance would apply to an FDID representing a Relationship ID. See the FAQs in [Section M](#) for more information on FDIDs. Also, refer to the [CAT Industry Presentation](#) on FDID for additional information.

A change/replacement in the FDID value associated with a particular trading account, Relationship ID, and Entity ID would be an isolated event that is only permissible in certain limited circumstances, such as system migration, change of vendors, change in clearing firm, and change in masking methodology used for FDID values. See [FAQ M1](#) for more information.

2.2.2. FDID Open Date

The FDID open date is included in the Reference Data File as *fdidDate*. The *fdidDate* field must be populated with either:

- Date in which the account was opened, or
- The Account Effective Date, as defined in Section 1.1 of the Plan, in the following circumstances:
 - The Industry Member has established a trading relationship, but not an account, with an institution or client
 - Proprietary trading accounts of the Industry Member
 - Accounts opened prior to the implementation date of the CAT NMS Plan applicable to the relevant Industry Member
 - The Industry Member has acquired another Industry Member and the Account Open Date was changed to a date value on or after the completion of the merger

2.2.3. CAT Customer

The CAT NMS Plan defines the term “Customer” as having the same meaning provided in SEC Rule 613(j)(3), which is as follows:

- (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).

2.2.4. Input Identifiers

Input Identifiers is a generic term for the types of identifiers used to identify unique Customer Records. Input Identifiers are always translated to Transformed Identifier values (“TID value” or “*tidValue*”) prior to submission to CAT. The Plan Processor translates Transformed Identifier values into CAT Customer IDs. See [Section 2.2.5](#), [Section 2.2.6](#) and [Section 3.4](#) for more information.

Input Identifiers to be transformed to TID values prior to submission to CAT include:

- Social Security Number (SSN)/Individual Taxpayer Identification Number (ITIN)
- Employer Identification Number (EIN, including QI-EIN, WP-EIN, and WT-EIN)
- Foreign Identifiers

Industry Members must reconcile each CAT Customer to a single Input Identifier and therefore a single *tidValue*, even if the CAT Customer is associated to multiple FDIDs. It is not permissible for a single CAT Customer to have multiple *tidValues*. If an Industry Member obtains a new Input Identifier for a CAT Customer that was previously reported to the Reference Database, the CAT Customer’s *tidValue* must be updated for all Customer-to-FDID associations at the Industry Member. Clearing firms with correspondents that have foreign customers, please refer to the additional guidance in [Section 3.9 – Special Rules for Clearing Firms](#).

Refer to [FAQ X17](#) for details regarding handling the selection of a specific Input Identifier for generating a *tidValue* when an Industry Member has multiple values for the same Input Identifier type for a CAT Customer.

2.2.4.1. U.S. Tax Identifiers

U.S. Tax Identifiers (Social Security Number (SSN), Individual Taxpayer Identification Number (ITIN) and Employer Identification Number (EIN)) are considered Sensitive Identifiers and **must not** be submitted in any of the fields in the Reference Data File.

If the CAT Customer has an SSN, ITIN, or EIN, it must always be used as the Input Identifier even if other Input Identifiers (i.e., Foreign Identifiers) exist.

Input Identifiers used to generate TID values must be input in valid format, including the hyphen(s) – that is, 999-99-9999 for SSN or ITIN, and 99-99999999 for EIN.

2.2.4.2. Foreign Identifiers

All foreign identifier values are considered Sensitive Identifiers and **must not** be submitted in any of the fields in the Reference Data File.

Foreign Identifiers are **only** permissible to use for foreign Natural Person or foreign Legal Entity CAT Customers that do not have a U.S. Tax Identifier. Further, foreign identifiers **must** be used for Natural Persons and Legal Entities that do not have a U.S. Tax Identifier. For example, a Natural Person residing in the U.S. that does not have a U.S. Tax Identifier and a U.S.-based intergovernmental organization that does not have a U.S. Tax Identifier must be reported to the Reference Database with a foreign identifier type.

Examples of foreign identifiers include:

- Legal Entity Identifier (LEI)
- EU Member State National Client Identifier (NCI) in accordance with MIFID II
- Country of Domicile and Passport Number
- National Identity Card
- Permanent Resident Card Number
- Driver's License
- Other Government-Issued Identifier

Format validation will not occur for foreign Input Identifiers.

If an Industry Member has more than one foreign identifier collected for a CAT Customer (e.g., a National Registration and a Passport for a Natural Person) – and the CAT Customer does not have an EIN, SSN, nor ITIN – the Industry Member must always use a single, consistent Input Identifier to generate the *tidValue* for the CAT Customer across all Customer Records submitted by the Industry Member, irrespective if such Customer Records are associated with different FDID Records. Clearing firms with correspondents that have foreign customers, please refer to the additional guidance in [Section 3.9 – Special Rules for Clearing Firms](#). The following hierarchy must be followed if more than one identifier type is available for a foreign CAT Customer:

1. National Registration or Tax Identifier – usable for Natural Person and Legal Entity CAT Customers
2. LEI – usable only for Legal Entity CAT Customers
3. Country of Domicile and Passport Number – usable only for Natural Person CAT Customers
4. Permanent Resident Identifier – usable only for Natural Person CAT Customers
5. Driver's License – usable only for Natural Person CAT Customers
6. Other Government-Issued Identifier – usable for Natural Person and Legal Entity CAT Customers

If the Industry Member obtains a new foreign identifier for a CAT Customer that was previously reported to the Reference Database and the new foreign identifier replaces the CAT Customer's identifying information within the Industry Member's systems, the new foreign identifier must be used to generate a new *tidValue* for the CAT Customer and must be reported to the Reference Database for all Customer-to-FDID associations at the Industry Member. If the newly obtained foreign identifier is lower on the hierarchy, it is acceptable for the Industry Member to generate the CAT Customer's new *tidValue* from the new foreign identifier (for example, if a CAT Customer's passport expired and the CAT Customer provided the Industry Member with a driver's license). See [Section 3.2 Replacement of Transformed Identifier \(TID\)](#) for information on replacing a CAT Customer's *tidValue*.

When a foreign identifier is used to generate a TID and included in the Transformed Identifiers File, the *foreignTIDType* must be present and populated to indicate what type of identifier was used to generate the TID.

2.2.5. Transformed Identifier (TID)

The Transformed Identifier (TID) is a hashed version of the Input Identifier submitted to CAT by the Industry Member or its CAT Reporting Agent in place of the Input Identifier. The Industry Member has the responsibility to translate Input Identifiers to TID values (reported in the *tidValue* field) prior to submission, in accordance with the mathematical logic provided in [Section 3.4 –Translation of Input Identifiers to TID Values](#). Input Identifiers used to generate TID values must be input in valid format, including the hyphen(s) – that is, 999-99-9999 for SSN or ITIN, and 99-99999999 for EIN. Format validation will not occur for foreign Input Identifiers.

2.2.6. Customer ID

The Customer ID, also known as CAT Customer ID or CCID, is a unique identifier generated by the Plan Processor, that is defined within SEC Rule 613(j)(5) as “with respect to a customer, a code that uniquely and consistently identifies such customer for purposes of providing data to the central repository.” The CCID is a globally unique identifier generated for each unique TID value generated from a well-formatted and valid Input Identifier, in a way that is not reversible to the TID or textual Input Identifier value. The translation of TID to CCID is completed in the CCID Subsystem, in isolation from any of the Customer or Account reference data.

The CCID value is never provided to Industry Members or CAT Submitters and is only used within CAT to uniquely reference a single CAT Customer.

2.2.7. Customer Record ID

A Customer Record ID, populated in the *customerRecordID* field, is a unique reference to a single CAT Customer for a paired submission. This field is required when reporting a CAT Customer in association to an FDID. Figure 1, below, shows that the *customerRecordID* provides the Reference Database with linkage between the CAT Customer's reference data contained within the Reference Data File and the CAT Customer's reference data contained within the Transformed Identifiers File. For this reason, the *customerRecordID* in the Transformed Identifiers File must reference the *customerRecordID* in the Reference Data File for the same CAT Customer. For a paired submission of a Reference Data File and Transformed Identifiers File, each CAT Customer's *customerRecordID* is present three times:

- In the Reference Data File, it is in the *fdidCustomerList* and;
- In either the *naturalPersonCustomerList* or the *legalEntityCustomerList*.
- In the Transformed Identifiers File, it is in the *tidRecordList*.

2.3. Reference Database Architecture

2.3.1. CCID Subsystem

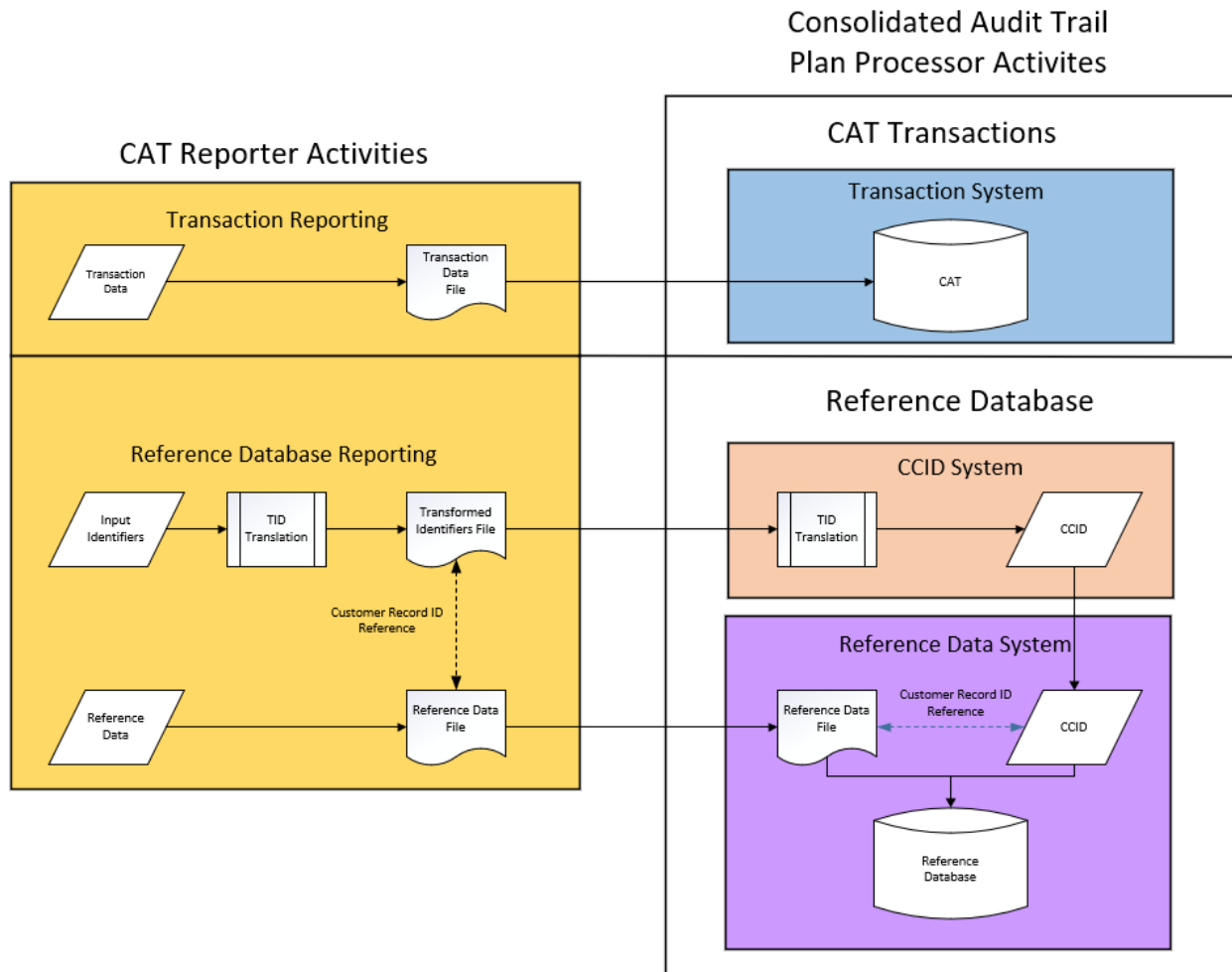
The CCID Subsystem is an isolated subsystem of the Reference Database that exists solely to translate input TID values into CCID values. The Transformed Identifiers File, sent only to the CCID Subsystem and containing the combination of the *customerRecordID* pointer and TID, translates the TID to CCID, and passes the combination of *customerRecordID* and CCID to the Reference Data Subsystem, where the *customerRecordID* is used to associate the assigned CCID with the corresponding Customer Record.

2.3.2. Reference Data Subsystem

The Reference Data Subsystem is an isolated subsystem of the Reference Database that exists for receipt and storage of Customer and Account reference data. The Reference Data File, sent only to the Reference Data Subsystem and containing the Customer and Account submission reference data, receives the combination of *customerRecordID* and CCID from the CCID Subsystem, and associates the assigned CCID with the corresponding Customer reference data.

The following diagram provides an overview of the flow of translating Input Identifiers to TID values by the reporting firm, the separation of the TID data from the Customer and Account reference data, and the translation of TID values to CCID values in the isolated CCID Subsystem so that TID is never known to the Reference Data Subsystem.

Figure 1: CAT Reporting Activities



2.4. Data Types

Customer and Account reference data must be reported using JSON text files. Data types used throughout this document are described below. Data types used for Reference Database reporting are a subset of the data types used for CAT Transaction reporting, with the following difference:

- Timestamp – only STRING versions of timestamp are supported in Reference Database reporting.

To support JSON submissions, the Industry Member Reference Database Schema (JSON) file is available on the CAT public website that describes each data type with required representation formats.

2.4.1. Data Validation Based on Data Types

All Customer and Account reference data submitted to CAT will be validated based on the defined data type of each item, including proper formatting and range checking. 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 Industry Member (and CAT Submitter, if applicable) as detailed in [Section 6 – Feedback and Corrections](#).

Table 2: Data Types

Data Type	JSON Type	Description
Unsigned	NUMBER	An unsigned value, greater than or equal to zero, with no decimal fraction component, in the inclusive range from 0 to 9,223,372,036,854,775,807 (the same range as a 63-bit unsigned integer). JSON parsing does not allow for leading zero (0) values in a Number JSON type field. Any leading zero characters in a Number JSON type field will result in a file integrity error for invalid JSON.
Boolean	BOOLEAN	A value with two choices: 'true' or 'false'. In JSON representation, if the field is not present, the value is considered 'false'.
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 between 32 and 126. The string may not include the following characters which serve as delimiters: <ul style="list-style-type: none">• 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).

Data Type	JSON Type	Description
		<p>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.</p> <p>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: <i>firmDesignatedID</i> = 1234\ABCD must be reported to CAT as "firmDesignatedID": "1234\ABCD". If the backslash is not escaped, the submitted record will be rejected. Escape characters do not participate in the field value length.</p>
Date	NUMBER	An 8-digit integer representing the date in YYYYMMDD. JSON parsing does not allow for leading zero (0) values in a Number JSON type field. Any leading zero characters in a Number JSON type field will result in a file integrity error for invalid JSON.
Timestamp	STRING	<p>A timestamp represents a moment in time. All timestamps must be in Eastern Time (ET).</p> <p>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).</p> <ul style="list-style-type: none"> The Date portion must include four-digit year, two-digit month, and two-digit day. Valid values: YYYY = 0000 - 9999, MM = 01 - 12, DD = 01 - 31. The Time portion must include a two-digit hour, two-digit minute, and two-digit seconds. Valid values: HH = 00 - 23, MM = 01 - 59, SS = 01 - 59, CCC = 000 - 999, NNNNNN = 000000 - 999999. <p>Examples which comply with Timestamp in STRING format:</p> <ul style="list-style-type: none"> 20190617T000120.000000000 20190617T000120 20190617T000120.000 20170107T213000.123456789 20170107 213000.123456789 20190617 000120.123000000 <p>Examples which do not comply with Timestamp in STRING format:</p> <ul style="list-style-type: none"> 20190617T0120 20190617T000120.
Name/Value Pairs	OBJECT	<p>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.</p> <p>When represented in JSON, the following rules apply:</p> <ul style="list-style-type: none"> 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
Array	ARRAY	A list of 0, 1 or more values of the same data type.

Data Type	JSON Type	Description
		<p>When represented in JSON, the following rules apply:</p> <ul style="list-style-type: none"> • ARRAY is within a set of brackets [] • Elements within the array are comma separated.
Choice	STRING	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.
Multi-Dimensional Array	Multi-Dimensional ARRAY	<p>A compound object that consists of an array of objects. The JSON 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 submission file as well as the feedback file.</p> <p>When represented in JSON, the following rules apply:</p> <ul style="list-style-type: none"> • 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.
Hexadecimal	String	A string, composed only of valid hexadecimal characters [a-fA-F0-9]. When a Hexadecimal type is described, it will include a number, indicating the maximum length of the field. For example, Hexadecimal (7) means that the field can contain up to 7 characters. Hexadecimal values are case insensitive.

2.4.2. Required, Conditional and Optional Fields

Throughout this document, record fields will be defined. Each field will be notated with the abbreviation R, C or O to represent whether it is required, conditional or optional. This codification will appear within each row of a table describing a field.

Table 3: Include Key

Value	Abbreviation	Description
Required	R	Required for the given record. This field must always be included.
Conditional	C	Conditionally required, either when paired with another field or fields, or when such data is applicable to the CAT Customer and/or FDID Record.
Optional	O	Optional for the given record. May be included at the discretion of the Industry Member/Submitter.

3. Special Reporting Requirements

3.1. Replacement of FDIDs

Reference Database functionality enables the replacement of a single *firmDesignatedID* at a time using the *replacedByFDID* field. If an Industry Member desires to replace one or more of its *firmDesignatedIDs* due to one of the limited circumstances outlined in [FAQ M1](#), it is able to do so by submitting each individual *firmDesignatedID* to be replaced and the *replacedByFDID* field indicating which *firmDesignatedID* has taken its place. There is no limit to how many *firmDesignatedIDs* can be replaced within a submission file, other than the standing record limits for file transmission.

The *replacedByFDID* value included in a submission file must reference an FDID that is either included in the current submission file or was accepted by the Reference Database in a prior submission file. If the *replacedByFDID* record in a submission file was not accepted by the Reference Database in a prior submission file and is not included in the current submission file or is included in the current submission file but the replacing FDID Record does not pass data validation checks, the submission record referencing the replacing FDID will fail data validation and will not be accepted by the Reference Database.

3.2. Replacement of Transformed Identifier (TID)

In order to satisfy Plan requirements for a unique CAT Customer ID, Industry Members must replace a CAT Customer's *tidValue* in scenarios where a CAT Customer's Input Identifier changes. If the Industry Member obtains a new Input Identifier for a CAT Customer that was previously submitted to the Reference Database, it must update the CAT Customer's *tidValue* for all Customer-to-FDID associations at the Industry Member.

There are three ways to replace the CAT Customer's Input Identifier in the Reference Database and the manner by which replacement must be reported to the Reference Database depends on **why** it is being updated:

- In one scenario, the Input Identifier was legally changed or the Industry Member obtained a different foreign Input Identifier that replaces the current foreign Input Identifier. This is the only scenario where the use of the *replacedByTID* functionality is permissible. It allows the previous *tidValue* to link to the new *tidValue* and indicates to regulators that the same CAT Customer has always been associated to the FDID. Examples include but are not limited to: when a CAT Customer's Input Identifier was changed from an ITIN to an SSN, a Foreign Legal Entity or Natural Person CAT Customer obtained a U.S.-assigned Input Identifier, a customer's passport number changed upon reissuance, or a Legal Entity CAT Customer's EIN changed due to a

corporate merger or acquisition. In this scenario, Industry Members must report this to the Reference Database by:

1. Including in the Transformed Identifiers File:
 - a. A record for the CAT Customer's previous TID noting the *replacedByTID* and *replacedByTIDType*³; and
 - b. A record for the CAT Customer's new TID; and
2. Including in the Reference Data File:
 - a. A record for the CAT Customer being replaced including a *roleEndReason* of 'REPLACED' and a *roleEndDate*. The Customer-to-FDID association must be explicitly ended in the submission file. It is not permissible to end the Customer-to-FDID association by omitting the *roleEndReason* and *roleEndDate* fields; and
 - b. A new record for the CAT Customer with an active *role* and *roleStartDate*. The *roleStartDate* must represent the date on which the CAT Customer entered into the specified *role*; not the date that the *tidValue* was replaced.

Note that if a CAT Customer's *tidValue* is replaced with another *tidValue* using the *replacedByTID* functionality and multiple versions of the same CAT Customer are present within the paired file submission, all of the CAT Customer's original *tidValues* must also be replaced. Customer Records that do not have the appropriate "replacedBy" fields will get Warning Code 24911 (Missing or invalid *replacedByTID*).

- If a CAT Customer's Transformed Identifier (TID) was initially submitted to and accepted by the Reference Database based on an Input Identifier value that was later determined to be incorrect and was never intended to be associated with the CAT Customer, it is not permissible to use the *replacedByTID* functionality. Reporting as described below will not link the previous *tidValue* to the new *tidValue* and indicates to the regulators that the CAT Customer should not have been associated to the FDID. Examples include but are not limited to: when a *tidValue* was generated from an Input Identifier value that was incorrect and never associated with the CAT Customer due to a manual entry error in the Industry Member's customer database or the customer initially

³ If the *replacedByTIDType* is 'FOREIGN', the Industry Member is also required to populate the *replacingForeignTIDType* and *replacingForeignTIDCountryCd* fields, as applicable.

provided the Industry Member with an incorrect Input Identifier. Upon receiving or determining the correct Input Identifier for the customer, the Industry Member must update the record by:

1. Including in the Transformed Identifiers File:
 - a. A record for the CAT Customer's previous, incorrect *tidValue*; and
 - b. A record for the CAT Customer's new *tidValue* that was generated from the correct Input Identifier value for the CAT Customer; and
 2. Including in the Reference Data File:
 - a. A record for the CAT Customer associated with the *tidValue* generated from the incorrect Input Identifier value, with a *roleEndReason* of 'CORRECTION' and a *roleEndDate* populated with the same date as the *roleStartDate* to indicate that the Customer Record should not have been associated to the FDID. The Customer-to-FDID association must be explicitly ended in the submission file and cannot be omitted; and
 - b. A new record for the CAT Customer associated with the *tidValue* generated from the correct Input Identifier value, with a *roleStartDate* reflecting the date the CAT Customer originally entered into the specified *role* and not the date that the new *tidValue* was generated based on the correct Input Identifier.
- Per [FAQ X9](#), if the Industry Member has made a reasonable effort to obtain an accurate reason as to why the CAT Customer is no longer associated to the FDID, and the Industry Member was unable to ascertain if the CAT Customer's Input Identifier was replaced with another Input Identifier (*roleEndReason* of 'REPLACED') or the CAT Customer was erroneously associated to the FDID (*roleEndReason* of 'CORRECTION'), the Industry Member may populate the CAT Customer's *roleEndReason* with 'OTHER'. Reporting as described below will not link the previous *tidValue* to the new *tidValue* and indicates to the regulators that the Industry Member was unable to ascertain why the Input Identifier was replaced. In this scenario, Industry Members must report this to the Reference Database by:

1. Including in the Transformed Identifiers File:
 - a. A record for the CAT Customer's *tidValue* that was generated from the original Input Identifier; and
 - b. A record for the CAT Customer's *tidValue* that was generated from the new Input Identifier; and

2. Including in the Reference Data File:

- a. A record for the CAT Customer associated with the *tidValue* generated from the original Input Identifier, with a *roleEndReason* of 'OTHER' and a *roleEndDate* populated with the date the Input Identifier was changed by the Industry Member. The Customer-to-FDID association must be explicitly ended in the submission file and cannot be omitted; and
- b. A new record for the CAT Customer associated with the *tidValue* generated from the subsequent Input Identifier value.

3.3. Mass Transfer of FDIDs across Industry Members

The Plan Processor must be able to link accounts that move from one Industry Member to another due to mergers and acquisitions, divestitures, and other events. The linking mechanisms described below are only to be used for instances of mass Account transfers. If assets or holdings of a single Account are transferred from one Industry Member to another, it is not required to report this as a Mass Transfer and as such the below guidance would not apply.

In order to enact mass transfers of Account records from one Industry Member to another, the transferring Industry Member must report the end of the FDID Record by setting the *fdidEndReason* as 'TRANSFER'.

The receiving Industry Member acquiring the Accounts must report in its submission file the *firmDesignatedID* it has assigned to the Account, the CRD of the transferring Industry Member as the *priorCATReporterCRD* value, and must also provide the FDID value assigned to the acquired Account by the transferring Industry Member as the *priorCATReporterFDID*.

3.4. Translation of Input Identifiers to TID Values

Social Security Numbers, Individual Taxpayer Identification Numbers, Employer Identification Numbers and foreign identifiers **must not** be submitted in any of the fields in the Reference Data File. These Input Identifiers must be translated to TID values prior to submission to the Reference Database.

For each SSN/ITIN or EIN Input Identifier that is to be used to uniquely identify a single CAT Customer, the identifier must be input in the exact valid format, including the hyphen(s) – that is, 999-99-9999 for SSN or ITIN, and 99-9999999 for EIN – to a SHA-256 hashing algorithm.

For each foreign Input Identifier that is to be used to uniquely identify a single CAT Customer, prior to applying the SHA-256 hashing algorithm, Industry Members must:

- Remove spaces (leading, trailing, and kerning), hyphens, and/or other punctuation (e.g., colons, semi-colons) so that only the numeric or alphanumeric values are used as the Input Identifier value.
- Avoid affixing additional values that do not appear on the documentation, as the *foreignTIDType* and *foreignTIDCountryCd* are separately reported in the Transformed Identifiers file.

The 32 bytes output from the SHA-256 hashing algorithm must be then represented as a 64-byte hexadecimal value. This resulting output is the TID value that must be reported to the Reference Database in the *tidValue* field and will be treated as case-insensitive. It is the responsibility of the Industry Member to translate the Input Identifier to a TID. The Plan Processor will conduct validations against the submitted TIDs to ensure the Input Identifier used to generate the TID was in the appropriate format and is from a valid range for the identifier type, as follows:

1. For SSN and ITIN
 - a. No values having an Area Number (first three digits) of 000 nor 666.
 - b. No values having a Group Number (middle two digits) of 00.
 - c. No values having a Serial Number (last four digits) of 0000.
 - d. No values of all the same digit such as 000-00-0000, 111-11-1111, 333-33-3333, 666-66-6666, 999-99-9999, nor 123-45-6789.
2. For EIN
 - a. No range validation will occur for TIDs generated from EINs.
3. For Foreign
 - a. No range validation will occur for TIDs generated from foreign identifiers.

3.5. Translation of TID to CCID Values

Each valid and unique input TID reported to the Reference Database in the *tidValue* field will result in the generation of a cryptographically randomized CCID by the Plan Processor. This resulting CCID will be unique for the specific input TID and will be the resulting CCID each time the same TID is input for translation. The resulting CCID will not be returned to the Industry Member or its CAT Reporting Agent, will not be able to be reversed to the input TID, and is only used within the CAT to uniquely identify a single CAT Customer without storage of Input Identifiers.

3.6. Full Data Replacement Submission

If an Industry Member determines it must end all FDID Records submitted to the Reference Database and would like the Plan Processor to end them on its behalf, it must contact the FINRA CAT Helpdesk.

3.7. Reporting Multiple Versions of a CAT Customer

If an Industry Member has multiple versions of a CAT Customer (i.e., the natural person or legal entity has the same Input Identifier and therefore will be reported to the Reference Database with the same *tidValue* for each instance of the CAT Customer), it is permitted to include the CAT Customer within the same submission file, across multiple files submitted by the same CAT Submitter and across multiple files submitted by different CAT Submitters.

Multiple versions of the CAT Customer can be reported to the Reference Database within the same submission in two ways:

- In option 1, the CAT Customer is associated to multiple FDID Records in the Reference Data File with the same *customerRecordID* value and is only present once in the Transformed Identifiers File with a *customerRecordID* value matching the *customerRecordID* value in the Reference Data File.
- In option 2, the CAT Customer is associated to multiple FDID Records in the Reference Data File with differing values for the *customerRecordID* and each instance of the *customerRecordID* is present in the Transformed Identifiers File. Note that if using this option, when a CAT Customer's *tidValue* is replaced with another *tidValue* using the *replacedByTID* functionality and multiple versions of the same CAT Customer are present within the paired file submission, all of the CAT Customer's original *tidValues* must also be replaced. Customer Records that do not have the appropriate "replacedBy" fields will return Warning Code 24911 (Missing or invalid *replacedByTID*).

See the "Multiple Versions of a CAT Customer Within a Submission File" section of the [Reference Database Reporting Scenarios](#) for more information.

When submitting multiple versions of the CAT Customer within the same file, the versions of the CAT Customer reported with a 'FOREIGN' *tidType* must not be reported as both a Natural Person and a Legal Entity CAT Customer or else all instances of the CAT Customer within the file will be rejected.

3.8. Special Rules Regarding FDID Characters

The following are rules regarding specific handling of characters used to generate FDIDs:

- A *firmDesignatedID* reported with the value 'PENDING', regardless of case, will be rejected. The value of 'PENDING' is used in CAT Transaction reporting when a *firmDesignatedID* is required for the event, but not available at the time of reporting; however, the value is not valid for reporting to the Reference Database. Once a *firmDesignatedID* has been assigned by the Industry Member, it must be reported to the Reference Database.

- Inclusion of any of the following character combinations in the *firmDesignatedID* field will result in rejection of the *firmDesignatedID* due to JSON data parsing rules unless the backslash is properly escaped:
 - \b
 - \r
 - \f
 - \n
 - \t
 - \"
- A backslash that is followed by any character other than the ones noted above, will result in the file having an Integrity Error for invalid JSON, unless the backslash is properly escaped.
- As an example of a properly escaped backslash, if an Industry Member has a *firmDesignatedID* of '1234\ABCD', it would be required to report this to the Reference Database as '1234\\ABCD'.
- Leading and trailing spaces in the *firmDesignatedID* field will be removed during processing, and the string between them will be stored in the Reference Database. Spaces bounded by other characters within the *firmDesignatedID* field string will be retained.
- A *firmDesignatedID* that consists of only spaces will be rejected.

3.9. Special Rules for Clearing Firms

Clearing firms reporting FDID Records for accounts held for their introducing brokers/correspondents must follow the Reference Database reporting requirements outlined in [Section 2.2.4 – Input Identifiers](#).

However, due to the nature of the clearing firm's relationship with the customer:

- When reporting the Account held for an introducing broker/correspondent, clearing firms may report CAT Customer Input Identifiers as received from the introducing broker/correspondent. Therefore, if the clearing firm has multiple versions of a foreign CAT Customer that it received from different introducing brokers/correspondents that may have each used different foreign Input Identifiers, the clearing firm is not required to reconcile the CAT Customer to a single Input Identifier when reporting the clearing firm's version of the CAT Customer to support its allocation reporting obligations.
- When reporting its version of the Customer Record, the clearing firm may replicate the field value for certain required data elements as provided by its introducing broker/correspondent. Specifically, when the *correspondentCRD* field is populated:

- The clearing firm may report a *role* of 'AUTHREP' for an Authorized Trader rather than “flipping” the *role* to 'AUTH3RD' on the clearing firm's version of the Customer Record.
- The clearing firm may report a *customerType* of 'EMPLOYEE' rather than “flipping” the *customerType* to 'OTHBKR' on the clearing firm's version of the Customer Record.

See [FAQ X3](#) for information regarding how clearing firms must populate the *accountType* field when it is optionally reporting allocations to an account that is owned or controlled by an introducing broker/correspondent.

When reporting the Account held for an introducing broker/correspondent, clearing firms are not required to populate the *branchOfficeCRD* field. While the *registeredRepCRD* is an optionally reported field, it is likewise not expected for clearing firms reporting data for their introducing broker/correspondents to populate this field.

4. Reference Database Reporting

This section describes the fields for inclusion within the Reference Database submission files. All submissions to the Reference Database are required to be in UTF-8 encoding. [Table 4](#) and [Table 5](#) list each field in JSON naming convention, as well as corresponding Data Types, Include Key, acceptable Occurrences, Description, and Format or Accepted Values for a Choice-type field. A single submission to the Reference Database will require a paired set of a Reference Data File and a Transformed Identifiers File, as defined in [Section 5.1 – File Submissions and Data Formats](#).

4.1. Reference Data File

The Reference Data File contains the list of FDID Records and associated reference data, the core CAT Customer reference data fields excluding TID data, and the relationships between the two. For security considerations, Reference Data Files must not contain the TID data; this is to be provided in the Transformed Identifiers File. A single Reference Data File is to be submitted in a pairing with a single Transformed Identifiers File.

Table 4: Reference Data File

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
<i>version</i>	Text (10)	Main	R	Exactly One per submission file	The <i>version</i> of the Reference Data File Schema under which the data is reported. The <i>version</i> utilized for Reference Database reporting is 1.0.0.	1.0.0
<i>catReporterCRD</i>	Unsigned	Main	R	Exactly One per submission file	The CRD number assigned to the Industry Member to which the data within the file belongs.	
<i>catSubmitterID</i>	Unsigned	Main	R	Exactly One per submission file	The ID of the firm submitting the file to CAT. Required even when the Industry Member is submitting data for itself.	
<i>correspondentCRD</i>	Unsigned	Main	C	Zero or One per submission file	The CRD number of the related introducing broker or correspondent firm whose customer and account data is kept on record at the Industry Member reporting to CAT. Required to be populated by clearing firms with introducing brokers or correspondents when reporting Accounts to the	

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					Reference Database that are custodied for their introducing brokers/correspondents, including, DVP/RVP accounts. All FDID and CAT Customer reference data included in the file will be associated to the <i>catReporterCRD</i> and <i>correspondentCRD</i> pairing.	
<i>fdidRecordCount</i>	Unsigned	Main	R	Exactly One per submission file	The count of <i>firmDesignatedID</i> field occurrences within the file. Used to validate the count of FDID Records intended to be submitted within the file matches the count of records present in the file.	
<i>naturalPersonCustomerRecordCount</i>	Unsigned	Main	R	Exactly One per submission file	The count of <i>customerRecordID</i> field occurrences within the file for Natural Person type CAT Customers. Used to validate the count of Natural Person Customer Records intended to be submitted within the file matches the count of records present in the file.	
<i>legalEntityCustomerRecordCount</i>	Unsigned	Main	R	Exactly One per submission file	The count of <i>customerRecordID</i> field occurrences within the file for Legal Entity type CAT Customers. Used to validate the count of Legal Entity Customer Records intended to be submitted within the file matches the count of records present in the file.	
<i>fdidRecordList</i>	Multi-Dimensional Array	Main	C	Zero or One per submission file	Structure for the array of FDID Records that are included in the file. Required if the submission file contains one or more FDID Records; not required if no FDID Records are included in the file.	
<i>fdidRecordID</i>	Unsigned	FDID Record	R	Exactly One per FDID Record	A unique reference to a single FDID Record for a single submission file.	
<i>firmDesignatedID</i>	Text (40)	FDID Record	R	Exactly One per FDID Record	The Firm Designated ID of the 'ACCOUNT', 'RELATIONSHIP', or 'ENTITYID' being reported by the Industry Member.	

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
<i>fdidType</i>	Choice	FDID Record	R	Exactly One per FDID Record	Representation of the type of record of the reported FDID. Values: ACCOUNT – Account type record. RELATIONSHIP – Relationship type record. ENTITYID – Entity ID type record. Only allowable when the FDID represents the Entity ID of the firm when an employee of the firm is exercising discretion over multiple customer accounts.	“ACCOUNT” “RELATIONSHIP” “ENTITYID”
<i>accountType</i>	Array [Choice]	FDID Record	R	Exactly One per FDID Record	Representation of the type or types of Account the FDID represents. All applicable values for the FDID must be included in the array. All values included in the array must be separated by commas. Values: AVERAGE – Industry Member-owned average price account. DVP/RVP – Delivery versus Payment account/Receipt versus Payment account. EDUCATION – Established for education savings including 529 Plan or Coverdale ESA. ENTITYID – Entity ID type record. Only allowable when the FDID represents the Entity ID of the firm when an employee of the firm is exercising discretion over multiple CAT Customer Accounts. ERROR – Error account. FIRM – Is owned by the reporting firm, including proprietary trading accounts and inventory accounts. INSTITUTION – An institutional account as defined in FINRA Rule 4512(c). MARKET – Market Making Account from which the Industry Member originates orders or to which it	“AVERAGE” “DVP/RVP” “EDUCATION” “ENTITYID” “ERROR” “FIRM” “INSTITUTION” “MARKET” “MARGIN” “OPTION” “OTHER” “RELATIONSHIP” “RETIREMENT” “UGMA/UTMA”

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					<p>allocates shares/contracts in a security/securities for which the Industry Member is registered as a market maker, designated market maker, lead market maker or similar capacity on a national securities exchange or from which the Industry Member originates orders that clear in the OCC clearing range of 'M'. If the Industry Member reports New Order events with an <i>accountHolderType</i> of 'O', the <i>accountType</i> value of 'MARKET' must be included on the related FDID Record submitted to the Reference Database. See FAQ C5 for more information.</p> <p>MARGIN – Approved for trading on margin.</p> <p>OPTION – Approved for trading options.</p> <p>OTHER – Account which does not meet the criteria for any other listed value.</p> <p>RELATIONSHIP – Relationship type record.</p> <p>RETIREMENT – As defined by the IRS:</p> <ul style="list-style-type: none"> • Individual Retirement Arrangements (IRAs) • Roth IRAs • 401(k) Plans • 403(b) Plans • SIMPLE IRA Plans (Savings Incentive Match Plans for Employees) • SEP Plans (Simplified Employee Pension) • SARSEP Plans (Salary Reduction Simplified Employee Pension) • Payroll Deduction IRAs • Profit-Sharing Plans • Defined Benefit Plans • Money Purchase Plans • Employee Stock Ownership Plans (ESOPs) • Governmental Plans • 457 Plans <p>UGMA/UTMA – Established as a custodial account under the Uniform Gift to Minors Act or Uniform Transfer to Minors Act.</p>	

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
<i>DVPCustodianID</i>	Array [Alphanumeric (5)]	FDID Record	C	Zero or One per FDID Record	<p>Required when <i>accountType</i> includes 'DVP/RVP'. All values included in the array must be separated by commas. Each value must be five characters or fewer, including leading zeros.</p> <p>If the custodian is a U.S. broker-dealer, this field must be populated with the clearing number of the custodian.</p> <p>If the custodian is a bank and is not a registered broker-dealer, this field must be populated with the DTC number of the bank.</p> <p>See FAQ X4 for acceptable uses of the value 'DTCRM'.</p> <p>If there is no clearing number or DTC number because the custodian is foreign, this field must be populated with a value of 'FOR'.</p>	
<i>clearingBrokerID</i>	Array [Alphanumeric (4)]	FDID Record	C	Zero or One per FDID Record	The NSCC Clearing ID of the Industry Member that clears the Accounts. Must be populated if known to the Industry Member. All values included in the array must be separated by commas. Each value must be exactly four characters, including leading zeros. If the Industry Member is a self-clearing firm, it must report its own NSCC Clearing ID.	
<i>branchOfficeCRD</i>	Unsigned	FDID Record	C	Zero or One per FDID Record	The CRD for the branch office to which the FDID Record is assigned, if applicable. Required if a customer Account is assigned to a branch office other than the main office.	
<i>registeredRepCRD</i>	Array [Unsigned]	FDID Record	O	Zero or One per FDID Record	The CRD number assigned to the Registered Representative(s) responsible for the FDID Record (as identified as such per SEC Rule 17a-3) that can provide trading advice for the Account. When optionally reported, all CRDs included in the array must be only numeric	

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					values, must not contain any leading zeroes, and must be separated by commas.	
<i>fdidDate</i>	Date (Number) (8)	FDID Record	R	Exactly One per FDID Record	Date on which the FDID opened, as defined in Section 2.2.2 of this specification, in YYYYMMDD format.	YYYYMMDD
<i>fdidEndDate</i>	Date (Number) (8)	FDID Record	C	Zero or One per FDID Record	Date on which the FDID was closed or ended, in YYYYMMDD format. Must be provided if the <i>fdidEndReason</i> field is populated.	YYYYMMDD
<i>fdidEndReason</i>	Choice	FDID Record	C	Zero or One per FDID Record	Reason why the FDID was closed or ended. Must be provided if the <i>fdidEndDate</i> field is populated. Values: CORRECTION – FDID was not required to be reported to the Reference Database. ENDED – FDID was ended (e.g., account was closed). REPLACED – FDID replaced by another FDID within the Industry Member. See FAQ M1 regarding FDID replacements. OTHER – Other unlisted reason for ending the FDID. TRANSFER - FDID was transferred to another Industry Member as part of a mass transfer as described in Section 3.3 .	“CORRECTION” “ENDED” “REPLACED” “OTHER” “TRANSFER”
<i>replacedByFDID</i>	Text (40)	FDID Record	C	Zero or One per FDID Record	The new <i>firmDesignatedID</i> replacing the currently reported <i>firmDesignatedID</i> . Used to provide historical linkage across replaced records over time. Must be provided if the <i>fdidEndReason</i> is ‘REPLACED’. Must not be provided if the <i>fdidEndReason</i> is any value other than ‘REPLACED’.	
<i>priorCATReporterCRD</i>	Unsigned	FDID Record	C	Zero or One per FDID Record	CRD of the Industry Member from which the Account was acquired as part of a mass transfer as described in Section 3.3 . Must be provided if the Account was acquired by	

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					the Industry Member. Must be provided if <i>priorCATReporterFDID</i> is populated.	
<i>priorCATReporterFDID</i>	Text (40)	FDID Record	C	Zero or One per FDID Record	The original <i>firmDesignatedID</i> for the record acquired as part of a mass transfer as described in Section 3.3. Must be provided by the acquiring Industry Member if the Account was acquired as part of a mass transfer.	
<i>fdidCustomerList</i>	Multi-Dimensional Array	FDID Record	C	Exactly One per FDID Record	Structure for the array of Customer Records that are associated to the FDID Record within the file. Required when the FDID Record is being reported to the Reference Database for the first time. Also required when there is no <i>fdidEndReason</i> . Not required when ending an FDID Record that was previously accepted with one or more CAT Customers.	
<i>customerRecordID</i>	Unsigned	FDID Customer Record	R	Exactly One per FDID Customer Record	A unique reference to a single CAT Customer for a single submission file. The value in this field must also be a value present in the <i>naturalPersonCustomerList</i> or the <i>legalEntityCustomerList</i> ; and present in the Transformed Identifiers File.	
<i>role</i>	Choice	FDID Customer Record	R	Exactly One per FDID Customer Record	Representation of the type of role the CAT Customer has on the FDID. Values: AUTH3RD – An Authorized Trader who is not a holder of the Account, nor an employee of the reporting Industry Member, who has authority to place orders for the Account without prior approval of the account holder(s). AUTHREP – An Authorized Trader who is not a holder of the Account but does have authority to place orders for the Account without prior approval of the account holder(s) and is	“AUTH3RD” “AUTHREP” “NTHOLDER” “TRDHOLDER”

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					<p>either the reporting Industry Member or an employee of the reporting Industry Member, if the account holder specifically designates the natural person employee as authorized to trade for the Account independent of the authority granted to the entity Authorized Trader. See FAQ X11 for more information. This <i>role</i> must also be used for affiliated group companies (for Legal Entity CAT Customers) and employees of affiliated group companies (for Natural Person CAT Customers) (see FAQ X11 for more information), if the Industry Member maintains in its books and records that the Legal Entity CAT Customer or Natural Person CAT Customer is an affiliate. For example, if the Industry Member maintains in its books and records that the Legal Entity Registered Investment Advisor Authorized Trader is affiliated with the reporting Industry Member, the <i>role</i> must be 'AUTHREP'. If the Industry Member does not maintain in its books and records that the Legal Entity Registered Investment Advisor Authorized Trader is affiliated with the reporting Industry Member, the <i>role</i> may be 'AUTH3RD'.</p> <p>NTHOLDER – Holder of the Account that does not have authorization to trade on the Account.</p> <p>TRDHOLDER – Holder of the Account that also has authorization to trade on the Account.</p>	
<i>hasDiscretion</i>	Boolean	FDID Customer Record	C	Zero or One per FDID Customer Record	Indicates if the Authorized Trader has the ability to place orders on the Account without prior approval of the Holder(s). Must be present and populated if <i>role</i> is 'AUTH3RD' or 'AUTHREP'.	true false

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					Must be omitted or 'false' if <i>role</i> is 'NTHOLDER' or 'TRDHOLDER'.	
<i>roleStartDate</i>	Date (Number) (8)	FDID Customer Record	R	Exactly One per FDID Customer Record	Date on which the CAT Customer entered into the specified <i>role</i> on the Account, in YYYYMMDD format.	YYYYMMDD
<i>roleEndDate</i>	Date (Number) (8)	FDID Customer Record	C	Zero or One per FDID Customer Record	Date on which the CAT Customer ceased having the specified <i>role</i> on the FDID, in YYYYMMDD format. Must be provided if the <i>roleEndReason</i> field is populated.	YYYYMMDD
<i>roleEndReason</i>	Choice	FDID Customer Record	C	Zero or One per FDID Customer Record	Reason why the CAT Customer ceased having the specified <i>role</i> on the FDID. Must be provided if the <i>roleEndDate</i> field is populated. Values: CORRECTION – CAT Customer was erroneously reported as associated to the FDID or FDID was not required to be reported to the Reference Database. ENDED – CAT Customer was reported to the Reference Database with an incorrect <i>role</i> (e.g., erroneously reported as 'AUTH3RD' rather than correctly reported as 'AUTHREP'), <i>role</i> on FDID was ended or FDID was ended (e.g., account was closed upon death of account holder). REPLACED – CAT Customer <i>role</i> on FDID was ended because the FDID was replaced with another FDID, or because the CAT Customer Input Identifier was replaced with another Input Identifier. OTHER – Other unlisted reason for ending the CAT Customer <i>role</i> on FDID or per FAQ X9 , the reason why a Customer-to-FDID association was ended could not be reasonably ascertained. TRANSFER – Role ended	"CORRECTION" "ENDED" "REPLACED" "OTHER" "TRANSFER"

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					because the FDID was transferred to another Industry Member as part of a mass transfer as described in Section 3.3 .	
<i>naturalPersonCustomerList</i>	Multi-Dimensional Array	Main	C	Zero or One per submission file	Structure for the array of Natural Person type Customer Records that are included in the file. Required if the submission file contains one or more Natural Person Customer Records. Not required if no Natural Person Customer Records are included in the file.	
<i>customerRecordID</i>	Unsigned	Natural Person Customer Record	R	Exactly One per Natural Person Customer Record	A unique reference to a single CAT Customer for a single submission file. The value in this field must also be a value present in the <i>fdidCustomerList</i> and present in the Transformed Identifiers File.	
<i>customerType</i>	Array [Choice]	Natural Person Customer Record	R	Exactly One per Natural Person Customer Record	Representation of the characteristics of the CAT Customer. All applicable values for the CAT Customer must be included in the array. All values included in the array must be separated by commas. Values: ACCREDITED – CAT Customer was identified as an accredited investor by the Industry Member as set forth in Rule 501(a) of the Securities Act of 1933, if maintained in the Industry Member’s general customer and account records. ADVISER – CAT Customer was identified as “a person associated with an investment adviser” as defined in Section 202(a)(17) of the Investment Advisers Act of 1940, if maintained in the Industry Member’s general customer and account records. CP – CAT Customer identified itself as an officer, director, or 10% or more share owner of a public	“ACCREDITED” “ADVISER” “CP” “EMPLOYEE” “FOREIGN” “NOTAPPLICABLE” “OTHBKR” “TRUST”

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					<p>company at the time of account opening.</p> <p>EMPLOYEE – CAT Customer is an employee or associated person of the Industry Member, as defined in Section 3(a)(18) of the Securities Exchange Act of 1934. If employee attribute is maintained by the Industry Member at the group level, this value may also include CAT Customers employed by affiliated group companies.</p> <p>FOREIGN – CAT Customer is a Natural Person that does not have a U.S. Tax Identifier.</p> <p>NOTAPPLICABLE – None of the defined terms are applicable to the CAT Customer.</p> <p>OTHBKR – CAT Customer is associated with a U.S. registered broker-dealer other than the Industry Member.</p> <p>TRUST – CAT Customer is a trust.</p>	
<i>legalEntityCustomerList</i>	Multi-Dimensional Array	Main	C	Zero or One per submission file	Structure for the array of Legal Entity type Customer Records that are included in the file. Required if the submission file contains one or more Legal Entity Customer Records; not required if no Legal Entity Customer Records are included in the file.	
<i>customerRecordID</i>	Unsigned	Legal Entity Customer Record	R	Exactly One per Legal Entity Customer Record	A unique reference to a single CAT Customer for a single submission file. The value in this field must also be a value present in the <i>fdidCustomerList</i> and present in the Transformed Identifiers File.	
<i>customerType</i>	Array [Choice]	Legal Entity Customer	R	Exactly One per Legal Entity Customer Record	Representation of the characteristics of the CAT Customer. All applicable values for the CAT Customer must be included in the array. All values included in the array must be separated by commas.	“ACCREDITED” “ADVISER” “BD” “FOREIGN” “NOTAPPLICABLE” “RIC” “TRUST”

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					<p>Values:</p> <p>ACCREDITED – CAT Customer was identified as an accredited investor by the Industry Member as set forth in Rule 501(a) of the Securities Act of 1933, if maintained in the Industry Member’s general customer and account records.</p> <p>ADVISER – CAT Customer was identified as a U.S. registered “Investment Adviser” as defined in Section 202(a)(11) of the Investment Advisers Act of 1940, if maintained in the Industry Member’s general customer and account records.</p> <p>BD – CAT Customer is a U.S. registered broker-dealer, if maintained in the Industry Member’s general customer and account records.</p> <p>FOREIGN – CAT Customer is a Legal Entity that does not have a U.S. Tax Identifier.</p> <p>NOTAPPLICABLE – None of the defined terms are applicable to the CAT Customer.</p> <p>RIC – CAT Customer is a Registered Investment Company as defined in the Investment Company Act of 1940 (15 U.S.C. § 80a–3(a)(1)), if maintained in the Industry Member’s general customer and account records.</p> <p>TRUST – CAT Customer is a trust.</p>	
<i>correctionList</i>	Multi-Dimensional Array	Main	C	Zero or One per Submission File	Structure for the array of Correction Action Records within the file. Required if the submission file contains one or more Correction Action Records.	
<i>rejectionID</i>	Unsigned	Correction Action Record	R	Exactly One per Correction Record	The CAT-assigned <i>rejectionID</i> from a prior submission that was created for the particular data validation error being corrected.	

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
<i>correctionAction</i>	Choice	Correction Action Record	R	Exactly One per Correction Record	The action being taken to repair for the prior rejection. Values: CORRECTION – The prior rejection is being repaired by including a <i>correctingFirmDesignatedID</i> or a <i>correctingCustomerRecordID</i> . DELETE – The prior rejection is being cleared without submitting a <i>correctingFirmDesignatedID</i> or a <i>correctingCustomerRecordID</i> .	“CORRECTION” “DELETE”
<i>correctingFirmDesignatedID</i>	Text (40)	Correction Action Record	C	Zero or One per Correction Record	The <i>firmDesignatedID</i> that is repairing a previously rejected <i>firmDesignatedID</i> . The <i>correctingFirmDesignatedID</i> value must reference a corresponding <i>firmDesignatedID</i> value that is either included in the current submission file or was accepted by the Reference Database in a prior submission. Required if the <i>correctionAction</i> is ‘CORRECTION’ and the prior error being corrected was against a <i>firmDesignatedID</i> .	
<i>correctingCustomerRecordID</i>	Unsigned	Correction Action Record	C	Zero or One per Correction Record	A reference to the <i>customerRecordID</i> value in the submission file that is repairing a previously rejected Customer Record. The <i>correctingCustomerRecordID</i> value must reference a <i>customerRecordID</i> that is included in the current submission file. Required if the <i>correctionAction</i> is ‘CORRECTION’ and the prior error being corrected was against a Customer Record.	

4.2. Transformed Identifiers File

The Transformed Identifiers File contains the list of *tidValues* and the pointer to the *customerRecordID* from the Reference Data File. A single Transformed Identifiers File is to be submitted in a pairing with a single Reference Data File.

Table 5: Transformed Identifiers File

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
<i>version</i>	Text (10)	Main	R	Exactly One per submission file	The <i>version</i> of the Transformed Identifiers File Schema under which the data is reported. The <i>version</i> utilized for Reference Database reporting is 1.0.0.	1.0.0
<i>tidRecordCount</i>	Unsigned	Main	R	Exactly One per submission file	The count of TID Record occurrences within the file. Used to validate that the count of TID Records intended to be submitted within the file matches the count of records present in the file.	
<i>tidRecordList</i>	Multi-Dimensional Array	Main	C	Zero or One per submission file	Structure for the array of TID Records that are included in the file. Required if the submission file contains one or more TID Records; not required if no TID Records are included in the file.	
<i>customerRecordID</i>	Unsigned	TID Record	R	Exactly One per TID Record	A unique reference to a single Customer Record in the Reference Data File. The value in this field must also be a value present in the <i>customerRecordIDs</i> in the Reference Data File.	
<i>tidType</i>	Choice	TID Record	R	Exactly One per TID Record	The specific type of Input Identifier used to generate the <i>tidValue</i> . Values: EIN –The <i>tidValue</i> was generated using	“EIN” “FOREIGN” “SSN/ITIN”

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					<p>an Employer Identification Number (EIN).</p> <p>FOREIGN –An identifier other than an EIN, SSN, or ITIN was used to generate the <i>tidValue</i>.</p> <p>SSN/ITIN –The <i>tidValue</i> was generated using a Social Security Number (SSN) or Individual Taxpayer Identification Number (ITIN).</p>	
<i>foreignTIDType</i>	Choice	TID Record	C	Zero or One per TID Record	<p>The specific type of foreign Input Identifier used to generate a 'FOREIGN' <i>tidType</i>. Required to be populated if the <i>tidType</i> is 'FOREIGN'. The following hierarchy must be followed if more than one identifier type is available for a foreign CAT Customer:</p> <p>Values:</p> <ol style="list-style-type: none"> 1. NATIONALID – National registration or tax identifier, if the Industry Member knows the identifier was issued by a national-level government body or agency, or when the Industry Member cannot distinguish if the issuer is a national-level government body or agency. 2. LEI – Legal Entity Identifier. 3. PASSPORT – Country of issuance and passport number. 4. PERMANENT – Permanent resident identifier. 5. DRIVERLICENSE 	<p>"DRIVERLICENS E"</p> <p>"LEI"</p> <p>"NATIONALID"</p> <p>"OTHGOVT"</p> <p>"PASSPORT"</p> <p>"PERMANENT"</p>

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					<p>– Driver’s license identifier.</p> <p>6. OTHGOVT – Other government-issued identifier, if the Industry Member knows the identifier was issued by a non-national level government body or agency, such as a regional agency. Must not be used if one of the other allowable values apply.</p>	
<i>foreignTIDCountryCd</i>	Choice	TID Record	C	Zero or One per TID Record	Code of the country that issued the Input Identifier used to generate the ‘FOREIGN’ <i>tidType</i> , in ISO 3166-1 alpha-2 format. Please view Appendix E for acceptable values. Required if the <i>tidType</i> is ‘FOREIGN’ and the <i>foreignTIDType</i> is not ‘LEI’.	AA
<i>tidValue</i>	Hexadecimal (64)	TID Record	R	Exactly One per TID Record	The obfuscated Input Identifier of the CAT Customer whose data is being reported.	
<i>replacedByTIDType</i>	Choice	TID Record	C	Zero or One per TID Record	<p>The specific type of Input Identifier used to generate the <i>replacedByTID</i> when a CAT Customer’s Input Identifier has changed. Required when <i>replacedByTID</i> is populated.</p> <p>Values:</p> <p>EIN –The <i>replacedByTID</i> was generated using an Employer Identification Number (EIN).</p> <p>FOREIGN –An identifier other than an EIN, SSN, or ITIN was used to generate the <i>replacedByTID</i>.</p> <p>SSN/ITIN –The <i>replacedByTID</i> was</p>	“EIN” “FOREIGN” “SSN/ITIN”

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					generated using a Social Security Number (SSN) or Individual Taxpayer Identification Number (ITIN).	
<i>replacingForeignTIDType</i>	Choice	TID Record	C	Zero or One per TID Record	<p>The specific type of foreign Input Identifier used to generate a 'FOREIGN' <i>replacedByTIDType</i> when a foreign CAT Customer's Input Identifier has changed. Required to be populated if the <i>replacedByTIDType</i> is 'FOREIGN'. The following hierarchy must be followed if more than one identifier type is available for a foreign CAT Customer:</p> <p>Values:</p> <ol style="list-style-type: none"> 1. NATIONALID – National registration or tax identifier, if the Industry Member knows the identifier was issued by a national-level government body or agency, or when the Industry Member cannot distinguish if the issuer is a national-level government body or agency. 2. LEI – Legal Entity Identifier. 3. PASSPORT – Country of issuance and passport number. 4. PERMANENT – Permanent resident identifier. 5. DRIVERLICENSE – Driver's license identifier. 6. OTHGOVT – Other government-issued identifier, if the Industry Member 	<p>"DRIVERLICENS E" "LEI" "NATIONALID" "OTHGOVT" "PASSPORT" "PERMANENT"</p>

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					knows the identifier was issued by a non-national level government body or agency such as a regional agency. Must not be used if one of the other allowable values apply.	
<i>replacingForeignTIDCountryCd</i>	Choice	TID Record	C	Zero or One per TID Record	Code of the country that issued the Input Identifier used to generate the 'FOREIGN' <i>replacedByTIDType</i> when a foreign CAT Customer's Input Identifier has changed; in ISO 3166-1 alpha-2 format. Please view Appendix E for acceptable values. Required if the <i>replacedByTIDType</i> is 'FOREIGN' and the <i>replacingForeignTIDType</i> is not 'LEI'.	AA
<i>replacedByTID</i>	Hexadecimal (64)	TID Record	C	Zero or One per TID Record	The obfuscated Input Identifier of the CAT Customer when the CAT Customer's Input Identifier has changed. Must be provided if the <i>roleEndReason</i> is 'REPLACED'. Must not be provided when <i>roleEndReason</i> is a value other than 'REPLACED'.	

5. Submission Process

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

5.1. File Submissions and Data Formats

All submissions to the Reference Database are required to be in UTF-8 encoding. The following are examples of input UTF-8 values and their corresponding expected SHA-256 hashes:

Input Value	Hashed Value
999-99-9999	1438887c12c566c8f87325380e06517bfb2e46e4de7e07fc6f004ea5bb21945d
111-11-1111	4628ea314743d5ac373997763be3d39b86fc40c5d2015d2db345b0231e215b6c
000-00-0000	5fb0d784eb4b5277d787d9fef634cde3f1915fe4ae306d4a4c41db866565e7bd

A single submission to the Reference Database must be comprised of a paired Reference Data File and Transformed Identifiers File, even if record counts are zero for both files. The base filenames for the Reference Data File and Transformed Identifiers File must use identical name values, comprised of the CAT Submitter ID, CAT Reporter CRD, File Generation Date, optional Group, and File Number, to be identified as a pair. Reference Database files have a prescribed naming convention and are supported in JSON format. It is acceptable to submit a file set containing zero records, for example if an Industry Member has no updates to report but chooses to continuously generate and submit a daily file.

Submissions must include a Reference Data File with populated header record information, including *version*, *catReporterCRD*, *catSubmitterID*, *fdidRecordCount*, and Customer Record Count (populated in the *naturalPersonCustomerRecordCount* and *legalEntityCustomerRecordCount* fields). It is valid and acceptable for an Industry Member to submit a file with only this header information and record counts of zero, indicating an intentional submission of no FDID or Customer record data.

Transformed Identifiers File submissions must include populated header record information, including *version* and *tidRecordCount*. It is valid and acceptable for an Industry Member to submit a file with only this header information and a record count of zero, indicating an intentional submission of no TID data.

5.1.1. File Submission Names

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

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

For example: 123_999_20200101_REF_000123.json.bz2

2. Transformed Identifier Files must be named using the following format:

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

For example: 123_999_20200101_TIDS_000123.json.bz2

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

Table 6: Elements of a File Submission Name

Field Name	Data Type	Description	Include Key
CAT Submitter ID	Unsigned	The ID of the firm submitting the file to CAT.	R
CAT Reporter CRD	Unsigned	The CRD number assigned to the Industry Member to which the data within the file belongs.	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)	Industry Member-defined string optionally included to guarantee uniqueness of a file across dates. Filenames associated with manually created submissions entered into the Reference Database Reporter Portal will be assigned the Group value of 'refweb'. Submission files uploaded via the Reference Database Reporter Portal or submitted via SFTP must not use a value of 'refweb' for the Group field or else the file will be rejected with Error Code 21010. Using a value of 'ref', uppercase or lowercase, is not recommended because the feedback filename will not be in the format described in Section 6 .	O
File Kind	Alphanumeric (30)	Set to 'REF' for Reference Data Files. Set to 'TIDS' for Transformed Identifiers Files.	R
File Number	Unsigned	Sequence number of the file, 6-digits long, left-padded with zeros.	R
Format Extension	Alphanumeric (4)	Represents the format of the data submission. JSON formatted submissions must be 'json'.	R
Compression Extension	Alphanumeric (3)	Applicable to Reference Data and Transformed Identifiers Files. Set to 'bz2'.	R

4. Filenames are required to be globally unique among all other files using the base name (the portion of the filename without the format and compression extensions) of the file.
5. A single Reference Database submission must consist of a paired Reference Data File and Transformed Identifiers File, noted by the same filename for the Reference Data File and Transformed Identifiers File for the combination of CAT Submitter ID, CAT Reporter CRD, File Generation Date, optional Group (if present on either), and File Number attributes.
6. If either of the paired Reference Data or Transformed Identifiers Files must be resubmitted, both files must be renamed to avoid a duplicate file warning.

5.1.2. Submission Formats

The Reference Database supports the submission of data in JSON format only, due to the relational nature of the Account and Customer reference data.

5.1.3. Reference Data File Submission

The following additional rules apply to Reference Data Files:

1. The Plan Processor will support standard JSON syntax for each record or as specified in this document.
2. Reference Data Files serve as top-level containers for each object.
3. All Reference Data Files sent from the Industry Member (or the third-party CAT Reporting Agent for the Industry Member) must be compressed using BZip2. The associated compression extension is "bz2".
4. Reference Data Files must be individually compressed and submitted. Compressed files may not be bundled into a single container file.
5. The data contained within the Reference Data File must represent data for the CAT Reporter CRD number identified within the filename.
6. A Reference Data File without an associated Transformed Identifiers File posted within 60 minutes of the Reference Data File submission will result in an error.
7. A Transformed Identifiers File without an associated Reference Data File posted within 60 minutes of the Transformed Identifiers File submission will result in an error.
8. The CAT Submitter ID, CAT Reporter CRD, File Generation Date, optional Group, and File Number must be the same for the Reference Data File and paired Transformed Identifiers File.
9. The Reference Data File submission must be the same schema *version* as the Transformed Identifiers File.
10. Files submitted through SFTP are limited to a maximum uncompressed size of 7GB.
11. Files sizes <= 1GB are recommended as feedback will be returned faster.

12. Reference Data Files submitted through the Reference Database Reporter Portal are limited to a maximum uncompressed size of 1GB.
13. Schema files will be maintained by the Plan Processor and will be versioned as the Technical Specifications change.
14. Updates or changes will only be enacted on records as contained within the submission file. Records previously received and not included in a later submission file will not be changed in the Reference Database until included in a subsequent submission file.
15. Records included in a submission file must reflect the complete and current state of that record. This includes all pertinent associations and fields. The new record state will replace the state of the record in the Reference Database if it had been previously accepted. Any associations that were previously accepted into the Reference Database but are omitted in the subsequent submission of the record, will be implicitly ended; likewise, any fields that were previously accepted but are omitted will be implicitly cleared.
16. Reference Data Files may contain original submissions, updates to records contained in prior submissions, Industry Member-initiated corrections of records contained in prior submissions, and record error repairs.
17. Industry Members are only required to include records in their submission for new Active Accounts or when changes occur to previously accepted Active Accounts, however each record present in the file must contain the current state of fields and associations of the record.
18. Conditional and optional fields reported without a value will be assumed to be NULL. Conditional and optional fields may also be present in a submission with a 'null' value in order to be interpreted as NULL.

5.1.3.1. Reference Data File Submission – FDID

The following additional rules apply to FDID Records present within Reference Data Files:

1. An active FDID being submitted to the Reference Database must have at least one associated CAT Customer within the submission file. The maximum number of CAT Customers that can be associated to the FDID is 2,000.
2. Each FDID Record included in a submission file must contain all fields and associations that reflect its current state.
3. If any CAT Customer associated to an FDID within a submission file is rejected due to data validation errors, the FDID and all of its other CAT Customer associations will be rejected as well.
4. If an Industry Member needs to clear a previously submitted conditional or optional field value, it must omit the field in a resubmission, which will implicitly clear the value, or include it in a resubmission with an explicit value of 'null'. The full state of the FDID Record must be included as well. For example, if an Industry Member previously ended an FDID Record for a reason other than

'REPLACED', and the Industry Member wants to resume submission of the FDID Record, it can simply omit the *fdidEndDate* and *fdidEndReason* from the resubmission.

5. Each FDID Record in a submission file must include any and all applicable *accountType* values that are applicable for the FDID. The *accountType* value of 'ENTITYID' can only be used if the *fdidType* for the FDID is 'ENTITYID', and the *accountType* value of 'RELATIONSHIP' can only be used if the *fdidType* for the FDID is 'RELATIONSHIP' – as such, the *accountType* values 'RELATIONSHIP' and 'ENTITYID' cannot be used when *fdidType* is 'ACCOUNT'.
6. If the *fdidType* for an FDID Record is 'RELATIONSHIP' or 'ENTITYID', the *role* of the associated CAT Customer(s) must be 'TRDHOLDER'.
7. If an Industry Member ends an FDID Record and a CAT Customer association to that FDID exists with a *roleStartDate* later than the submitted *fdidEndDate*, the *roleStartDate* will be systematically updated to match the *fdidEndDate* in order to prevent rejection.
8. Clearing previously set *fdidEndDate* and *fdidEndReason* fields will not result in implicit reactivation of CAT Customer associations of the FDID. CAT Customer associations must be explicitly reestablished.
9. If the *firmDesignatedID* value listed in the *correctingFirmDesignatedID* field in a submission file was not accepted by the Reference Database in a prior submission file and is not included in the current submission file or is included in the current submission file but the FDID Record does not pass data validation checks, the repairing submission record referencing the FDID Record will fail data validation and will not be accepted by the Reference Database.
10. If a CAT Customer is associated to multiple FDID Records within a single Industry Member, the Customer-to-FDID association must be submitted for each FDID. The associations may be submitted within a single submission file or across multiple submission files as associations are established.
11. If a CAT Customer becomes associated to an FDID that was previously submitted to and accepted by the Reference Database, the Industry Member must establish the Customer-to-FDID association by including the FDID in a submission file with all fields that apply and including the CAT Customer's *role* within the *fdidCustomerList* array of the FDID Record. The current state of the corresponding Customer Record must be included in the submission as well.
12. If an Industry Member ends an FDID Record by populating the *fdidEndDate* and *fdidEndReason* fields, but does not include some or all of the currently active Customer-to-FDID associations stored in the Reference Database, the omitted active CAT Customers associated to the ended FDID will be systematically ended. The *fdidEndDate* and *fdidEndReason* will be cascaded as the *roleEndDate* and *roleEndReason*, respectively.
13. If an Industry Member is ending an FDID Record that has currently active CAT Customers associated to the ending FDID, and they do not want the date and reasons cascaded, they must explicitly end the Customer-to-FDID association by including the association in the submission file and populating the *roleEndDate* and *roleEndReason* fields.

14. If an FDID Record has one or more stored Customer-to-FDID associations where the *roleEndDate* is set and the Industry Member subsequently ends the FDID Record with an *fdidEndDate* populated with a date prior to the previously set *roleEndDate*, and the CAT Customer association is omitted from the resubmission, the *roleEndDate* values stored in the Reference Database will be systematically updated to the earlier *fdidEndDate* value. The *roleEndReason* currently set on the association will not be updated if it differs from the submitted *fdidEndReason* value.
15. If a Customer-to-FDID association that was previously stored in the Reference Database is omitted from an FDID submission, the association will be implicitly ended. The date the submission was acknowledged by the Reference Database will be used as the *roleEndDate* and the *roleEndReason* will be set to 'ENDED'. The *roleStartDate* will be unchanged in this case. There are some scenarios where it is not permissible to implicitly end a Customer-to-FDID association. See [Section 3.2 – Replacement of Transformed Identifier \(TID\)](#) for more information.
16. When optionally populated, the FDID submission must include any and all *registeredRepCRD* values for current Registered Representatives of the FDID. If a specific CRD that was previously stored for an FDID is not included in a subsequent submission of the FDID, the CRD that is no longer received will no longer be stored in association with the FDID. For Industry Members optionally reporting the *registeredRepCRD*, it is not anticipated that *registeredRepCRD* is populated for institutional accounts, as defined by FINRA Rule 4512(a)(1)(c).
17. Each CAT Customer of an FDID must only ever have one active *role* in association to the FDID at a time. If a CAT Customer changes its *role* – for example, a Holder of the Account that does not have authorization to trade on the Account is granted authorization to trade – the original *role* must be ended either by resubmitting the FDID Record with the CAT Customer's *roleEndDate* and *roleEndReason* or by resubmitting the FDID Record with the CAT Customer's new *role* and *roleStartDate* and omitting the CAT Customer's previous *role* and previous *roleStartDate*. Ending the association and adding the new association may occur within a single submission, however there cannot be overlap of more than one calendar day between the effective date ranges for each association for a given CAT Customer.
18. If a CAT Customer is associated to an FDID with the same *role* value over different time periods, the association must be reported in different file submissions. For example, if an Authorized Trader, in the *role* of 'AUTH3RD' was associated to an FDID, then the association was ended and subsequently reestablished, the Industry Member must make a submission ending the association and a separate submission reestablishing the association. A submission that includes the same CAT Customer in the same *role* associated to a single FDID will result in rejection of the FDID and the CAT Customer.
19. Each active FDID must have at least one active association to a CAT Customer with trading capabilities. Each FDID must have at least one active association to a CAT Customer with a *role* of 'TRDHOLDER', or at least one active association to a CAT Customer with a *role* of 'AUTH3RD' or 'AUTHREP' where *hasDiscretion* is 'true'.

20. If an Industry Member has closed an account and ended the associated FDID in the Reference Database, and later reopens the same account and resubmits the FDID to the Reference Database, the *fdidDate* in the reopening submission must be updated to reflect the reopening date.
21. If an Industry Member is ending an FDID in the Reference Database with an *fdidEndReason* of 'CORRECTION', the *fdidEndDate* must be the same as the *fdidDate* to indicate that the FDID Record should never have been submitted to the Reference Database.

5.1.3.2. Reference Data File Submission – CAT Customer

The following additional rules apply to Customer Records present within Reference Data Files:

1. Each Customer Record present in the Reference Data File must have a corresponding entry in the Transformed Identifiers File. If a corresponding Transformed Identifiers File entry is not present, the Customer Record will be rejected.
2. A CAT Customer being submitted to the Reference Database must have at least one associated FDID within the submission file or else the Customer Record will be rejected.
3. Each CAT Customer included in a submission file must contain all fields and associations that reflect its current state.
4. If any FDID associated to a CAT Customer within a submission file is rejected due to data validation errors, the CAT Customer will be rejected as well.
5. If an Industry Member needs to clear a previously submitted conditional or optional field value, it must omit the field in a resubmission, which will implicitly clear the value, or include it in a resubmission with an explicit value of 'null'. The full state of the Customer Record must be included as well.
6. If the CAT Customer listed in the *correctingCustomerRecordID* is not included in the current submission file or is included in the current submission file but the Customer Record does not pass data validation checks, the repairing submission record referencing the Customer Record will fail data validation and not be accepted by the Reference Database.
7. If a CAT Customer becomes associated to an FDID that was previously submitted to and accepted by the Reference Database, the Industry Member must establish the Customer-to-FDID association by including the FDID in a submission file with all relevant fields that apply and including the CAT Customer's *role* within the *fdidCustomerList* array of the FDID Record. The current state of the corresponding FDID Record must be included in the submission as well.

5.1.4. Transformed Identifiers File Submission

The following additional rules apply to the Transformed Identifiers Files and the records present within the file:

1. Schema files will be maintained by the Plan Processor and will be versioned as the Technical Specifications change.

2. A single *tidValue* may be present within the Transformed Identifiers File in association with differing *customerRecordID* values.
3. Each TID Record present in the Transformed Identifiers File must reference a record present in the Reference Data File. If a corresponding record is not present in the Reference Data File – either in the *naturalPersonCustomerList* or the *legalEntityCustomerList*, the individual TID entry in the Transformed Identifiers File will be rejected and not processed for additional validations.
4. Associating an 'SSN/ITIN' with a CAT Customer in the *legalEntityCustomerList* or an 'EIN' with a CAT Customer in the *naturalPersonCustomerList* will result in a rejection of the Customer Record. Likewise, associating a *foreignTIDType* value that is only usable for Natural Person CAT Customers ('DRIVERLICENSE', 'PASSPORT' or 'PERMANENT') with a CAT Customer in the *legalEntityCustomerList* or a *foreignTIDType* value that is only usable for Legal Entity CAT Customers ('LEI') with a CAT Customer in the *naturalPersonCustomerList* will result in a rejection of the Customer Record.
5. When *tidType* is 'FOREIGN', *foreignTIDCountryCd* must not be 'US'. In addition, when *tidType* is 'FOREIGN', *replacingForeignTIDCountryCd* must not be 'US'.
6. A *tidValue* generated from an invalid Input Identifier, or submitted with an incorrect *tidType* value, will cause the Customer Record to be rejected.
7. Transformed Identifiers Files submitted through the Reference Database Reporter Portal are limited to a maximum uncompressed size of 1GB.

5.1.5. Paired Reference Data File and Transformed Identifiers File JSON Example

The following JSON example demonstrates how a clearing firm (*catReporterCRD* 123456) must structure a Reference Data File submission for an account that it holds for a correspondent (*correspondentCRD* 3210) when it is using a CAT Reporting Agent (*catSubmitterID* 99999) to submit to the Reference Database.

```
{
  "version": "1.0.0",
  "catReporterCRD": 123456,
  "catSubmitterID": 99999,
  "correspondentCRD": 3210,
  "fdidRecordCount": 3,
  "naturalPersonCustomerRecordCount": 3,
  "legalEntityCustomerRecordCount": 1,
  "fdidRecordList": [
    {
      "fdidRecordID": 1,
      "firmDesignatedID": "EZAccount123",
      "fdidType": "ACCOUNT",
      "accountType": ["OPTION"],
      "fdidDate": 20190102,

      "fdidCustomerList": [
```

```

    {
      "customerRecordID": 1,
      "role": "TRDHOLDER",
      "roleStartDate": 20190102
    },
    {
      "customerRecordID": 4,
      "role": "TRDHOLDER",
      "roleStartDate": 20190102
    },
    {
      "customerRecordID": 15,
      "role": "AUTHREP",
      "hasDiscretion": true,
      "roleStartDate": 20190501
    }
  ]
},
{
  "fdidRecordID": 2,
  "firmDesignatedID": "MyTestEntity",
  "fdidType": "ENTITYID",
  "accountType": ["ENTITYID"],
  "fdidEndDate": 20191201,
  "fdidDate": 20170308,
  "fdidEndReason": "ENDED"
},
{
  "fdidRecordID": 3,
  "firmDesignatedID": "InternalRel",
  "fdidType": "RELATIONSHIP",
  "accountType": ["RELATIONSHIP"],
  "fdidDate": 20150121,
  "fdidCustomerList": [
    {
      "customerRecordID": 2,
      "role": "TRDHOLDER",
      "roleStartDate": 20150121
    }
  ]
}
],
"naturalPersonCustomerList": [
  {
    "customerRecordID": 1,
    "customerType": ["ACCREDITED"]
  },
  {
    "customerRecordID": 4,
    "customerType": ["ACCREDITED"]
  },
  {
    "customerRecordID": 15,
    "customerType": ["EMPLOYEE"]
  }
],

```

```

    "legalEntityCustomerList": [
      {
        "customerRecordID": 2,
        "customerType": ["FOREIGN"]
      }
    ],
    "correctionList": [
      {
        "rejectionID": 1127,
        "correctionAction": "CORRECTION",
        "correctingFirmDesignatedID": "EZAccount123"
      },
      {
        "rejectionID": 821,
        "correctionAction": "DELETE"
      }
    ]
  }
}

```

The following JSON example demonstrates how the Industry Member would structure the companion Transformed Identifier File submission.

```

{
  "version": "1.0.0",
  "tidRecordCount": 4,
  "tidRecordList": [
    {
      "customerRecordID": 1,
      "tidType": "SSN/ITIN",
      "tidValue":
"01a54629efb952287e554eb23ef69c52097a75aecc0e3a93ca0855ab6d7a31a0"
    },
    {
      "customerRecordID": 2,
      "tidType": "FOREIGN",
      "foreignTIDType": "NATIONALID",
      "foreignTIDCountryCd": "GB",
      "tidValue":
"26f917bb38d0309e438e57e06a241473ed7a59bae503712dee9c5cff3ecb50e7"
    },
    {
      "customerRecordID": 4,
      "tidType": "SSN/ITIN",
      "tidValue":
"4628ea314743d5ac373997763be3d39b86fc40c5d2015d2db345b0231e215b6c"
    },
    {
      "customerRecordID": 15,
      "tidType": "SSN/ITIN",
      "tidValue":
"568ca6d8af479889d124c329061ea0762a9c87abc3c80fddb659804477531e1a"
    }
  ]
}

```

5.1.6. Schema

An Industry Member schema file that details the structure and expected contents of every Reference Database file submission is available on the CAT public website. The schema file will be maintained by the Plan Processor and will be versioned as the submission file formats change. The Reference Database schema file will use the JSON schema format as defined at <https://json-schema.org/>.

5.1.6.1. 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 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 Members. 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 Members. In such cases, the schema is not backward compatible.
 - **Patch** – updated when a change occurs that does not require coding changes for any Industry Members.
2. Records contained in a Reference Data File must be formatted as per the schema version noted in the submission file.
3. Feedback provided by the Reference Database will set the *version* equal to the applicable schema version for the submission file.

5.1.6.2. 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., Text) as defined in [Table 2: Data Types](#).
 - **JSONDataType**: JSON standard data type to be used to submit data of this type.
 - **maxLength**: Maximum length of the string submission. Applicable to text and alphanumeric types only.
2. **Choices** – For choice data types, the list of possible values.
3. **Name/Value Pairs** – Field specifications for Name/Value Pair fields.
 - **name**: Field Name.
 - **dataType**: Data Type or an array of Data Types.
 - **JSONDataType**: The JSON standard data type or an array of JSON standard data types.

- **required:** Indicates whether the field is "Required," "Conditional," or "Optional."

5.2. 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 PrivateLink⁴
- 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 Reporter Portal. The SRG requires multi-factor authentication (MFA) to establish a secure, encrypted session before 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 7: Connectivity Methods and Supported CAT Interfaces Methods

Connectivity Methods	Interface Methods	
	CAT File Transfer	Reference Database 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](#).

⁴ Industry Members and CAT Reporting Agents interested in AWS PrivateLink should contact the FINRA Helpdesk at 888-696-3348 or at help@finracat.com.

5.3. 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 Reference Database 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](#) and the [Reference Database Reporter Portal User Guide](#).

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

Table 8: CAT Data and Feedback Interface Methods

CAT Data Submission and Feedback	Category	Reference Database SFTP	Reference Database Reporter Portal	CAT Reporter Portal
Submission of Reference Database files	Submission	✓	✓	
Resubmission of Rejected Files/Records, Corrections and Updates	Submission	✓	✓	
Interactive FDID Record Entry	Submission		✓	
Interactive Customer Record Entry	Submission		✓	
File Status Retrieval	Feedback	✓	✓	
Reporting Statistics	Feedback		✓	
Error Feedback	Feedback	✓	✓	
FDID Reconciliation Report	Feedback		✓	
Account Maintenance	Administration			✓
Establishment of Reporting Relationships	Administration			✓

5.3.1. 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. In order to ensure Customer and Account reference data is never commingled with the TID value, the two file types must be posted to separate SFTP sites.

There are two separate host sites that are utilized for Reference Database reporting to ensure the separation of the Customer and Account reference data submissions from the Transformed Identifiers

File. This additional physical separation for file posting further increases the security of the data within the Transformed Identifiers File, and the separate directory structure reduces risks of files being cross-posted to the incorrect directory.

The following is the SFTP directory structure that will be made available in the submitter’s home directory for posting Reference Data Files and received feedback and reports. Files associated with Reference Data File submissions, associated feedback, and reports will be uploaded in SFTP directories as per the following table.

Table 9: SFTP Directories – Reference Data, Feedback and Reports

SFTP Directory	Usage
/submitterID/cat/ref/upload	SFTP submissions of Reference Data Files uploaded by CAT Submitters. CAT will move files from this directory for further processing.
/submitterID/cat/ref/feedback	Reference Data Feedback Files, Outstanding Rejections Feedback Files and Sentinel Files.

The following is the SFTP directory structure that will be made available on the separate host site for posting the Transformed Identifiers File and received feedback files.

Table 10: SFTP Directory – Transformed Identifiers File

Identifiers Data SFTP Directory	Usage
/submitterID/cat/tid/upload	SFTP submissions of Transformed Identifiers Files uploaded by CAT Submitters. CAT will move files from this directory for further processing.
/submitterID/cat/tid/feedback	Transformed Identifiers Feedback File.

The following additional rules apply:

1. Processing is initiated when a file appears in the /submitterID/cat/ref/upload directory paired with a corresponding file in the /submitterID/cat/tid/upload directory only.
2. Files posted to /submitterID/cat/ref/upload without a corresponding file submission posted to /submitterID/cat/tid/upload will be rejected 60 minutes after posting.
3. Files posted to /submitterID/cat/tid/upload without a corresponding file submission posted to /submitterID/cat/ref/upload will be rejected 60 minutes after posting.
4. CAT will remove files from the upload directory as soon as each file upload is complete.
5. The CAT Submitter must not delete files from the /submitterID/cat/ref/upload directory.
6. A copy of uploaded files will not be made available to the Industry Member or CAT Submitter after submission.

7. Industry Members using SFTP will be able to obtain feedback files for files submitted through the SFTP, as well as any files submitted through the Reference Database Reporter Portal through either file upload or manual submission.

5.3.2. Reference Database Reporter Portal

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

- Manual data file uploads for files up to 1GB in size meeting all requirements of Reference Data Files as specified in [Section 5.1.3](#).
- Manual data entry for original submissions, repairs for CAT-identified errors, and Industry Member-initiated corrections. These entries will be converted to submission files generated by the portal. These files will not be available to download after submission.
- The Reference Database Reporter Portal will include a summary view screen for records created through manual data entry that contains the record data which will be submitted, allowing users to confirm, and capture for their records, the details of their submission.
- For data security, Industry Members using the Reference Database Reporter Portal will not be able to view the full details of the originally submitted record for repair of CAT-identified errors. The Reference Database Reporter Portal will display only the following fields for the error record, and will require entry of all other data fields to be included in the repairing submission:
 - ◆ *catReporterCRD*
 - ◆ *catSubmitterID*
 - ◆ *firmDesignatedID*
 - ◆ *fdidRecordID*
 - ◆ *customerRecordID* (if error is against a Customer Record or an FDID-to-Customer association)
 - ◆ *rejectionID*
 - ◆ *errorCode*
- Industry Members using the Reference Database Reporter Portal will only be able to view Feedback Files for files submitted through the Reference Database Reporter Portal. They will not be able to view Feedback Files for files posted via SFTP.

5.4. Reference Database Reporting Hours

5.4.1. Submission to the Reference Database

The CAT NMS Plan requires Industry Members to report Received Industry Member Data, which includes Customer and Account reference data, by 8:00 a.m. Eastern Time on the CAT Trading Day following the day the Industry Member receives such Received Industry Member Data. Customer and Account reference data may be bulk uploaded at the end of the CAT Trading Day or may be submitted in batches with associated uploads throughout the day. All creation of, or modifications to, CAT reportable Customer and FDID records are required to be submitted to the Reference Database by 8:00 a.m. Eastern Time on the CAT Trading Day following the day such information was received by the Industry Member.

Weekends or any day that all equities or options national securities exchanges are closed are not considered a CAT Trading Day.

The Reference Database reporting requirements include the obligation to repair, correct and update records within the Plan-established deadlines. If an Industry Member discovers that it failed to make a required repair, correction or update, it must take appropriate action to ensure that the Customer and Account reference data was accepted into the Reference Database. This may include reporting information that no longer represents the current state of the record. For example, if an FDID was originally reported to the Reference Database with a single CAT Customer and later a second CAT Customer became associated to the FDID, but the Industry Member failed to report the second CAT Customer to the Reference Database. Then, the second CAT Customer was no longer associated to the FDID. The Industry Member is required to submit an update to the FDID Record with the second CAT Customer including the *roleStartDate*, *roleEndDate* and *roleEndReason*, "ENDED", ensuring it is accepted without rejections.

5.4.2. Deadline for Repair of Errors Identified by the Reference Database

For data submitted by 8:00 a.m. ET, errors will be identified by the Reference Database and provided to Industry Members by no later than 5:00 p.m. ET on the CAT Trading Day such information was submitted to CAT. Once available, repairs can be made immediately. All repairs must be submitted by 5:00 p.m. Eastern Time on the third Trading Day after the CAT Customer or FDID information became available to the Industry Member. Repairs received after the repair deadline will be accepted but considered late.

If an Industry Member determines that previously accepted Customer or Account reference data is incorrect, the Industry Member must correct the Customer or Account reference data even if it did not produce an error during processing. Industry Member-initiated corrections will be handled in the same method as any other update to the existing Customer or FDID record.

Table 11: Error Repair Deadline Examples

IM Receives Data	Holiday	Initial Report Due (T+1)	Repair Due (T+3)
Monday 2:20 p.m. ET	N/A	Tuesday 8:00 AM ET	Thursday 5:00 p.m. ET
Monday 11:40 p.m. ET	N/A	Wednesday 8:00 a.m. ET	Friday 5:00 p.m. ET
Friday 11:00 a.m. ET	N/A	Monday 8:00 a.m. ET	Wednesday 5:00 p.m. ET
Friday 4:02 p.m. ET	N/A	Monday 8:00 a.m. ET	Wednesday 5:00 p.m. ET
Friday 4:02 p.m. ET	Next Monday	Tuesday 8:00 a.m. ET	Thursday 5:00 p.m. ET
Wednesday 3:00 p.m. ET	Thursday, Friday is half day	Friday 8:00 a.m. ET	Tuesday 5:00 p.m. ET
Saturday 11:15 a.m. ET	N/A	Tuesday 8:00 a.m. ET	Thursday 5:00 p.m. ET
Saturday 11:15 a.m. ET	Next Monday	Wednesday 8:00 a.m. ET	Friday 5:00 p.m. ET
Monday 10:00 a.m. ET (holiday)	On event date	Wednesday 8:00 a.m. ET	Friday 5:00 p.m. ET

5.5. Security

5.5.1. Encryption (In-transit)

TLS-based encryption, version 1.2 minimum, is required for connection to the Reference Database Reporter Portal (whether accessed via private line or the SRG) and to the Secure Reporting 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.

5.5.2. Encryption (At-rest)

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

5.5.3. Authentication

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

The second factor will 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 CAT Reporter Portal or SRG. There is no cost to the CAT 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/>.

6. Feedback and Corrections

CAT provides feedback associated with Reference Database submissions for Industry Members and CAT Submitters as follows:

- **File Status:** available via SFTP and the Reference Database Reporter Portal, indicates the acceptance or associated errors with a submission file.
- **Reporting Statistics:** available via the Reference Database Reporter Portal, daily summary statistics representing reporting activity and errors for prior submissions. Error rate is also included.
- **Error Feedback:** available via SFTP and the Reference Database Reporter Portal, errors found during processing will be made available, including error code, affected FDID, and associated record ID(s) from the submission file.
- **Corrections Feedback:** available via the Reference Database Reporter Portal, information is provided for the status of all repairs. When an error has been repaired, the updated status will be reflected.
- **Outstanding Rejections Feedback:** available via SFTP and the Reference Database Reporter Portal, errors found during processing on that day or on prior days that have not been repaired, and therefore remain outstanding, including error code and details about the submission file that last contained the associated record ID(s).

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

6.1. File and Error Feedback

A feedback file will be made available for each submission file that is acknowledged as uploaded. This file will contain information about current status, as well as previously completed stages of processing. Feedback related to the following stages of processing is expected to be made available within the following timelines:

Table 12: Feedback and Error Correction Availability

Seq	Processing Stage	Feedback	Anticipated Delivery	Delivery No Later Than
1	File Acknowledgement	File Acknowledgement Status	Within 10 minutes of File Submission	1 hour of File Submission
2	File Integrity	File Integrity Error Status or File Integrity	Within 30 minutes of File Submission	2 hours of File Submission

Seq	Processing Stage	Feedback	Anticipated Delivery	Delivery No Later Than
		Passed Status		
3	Data Validation	Data Errors including syntax and semantic errors	Within 1 hour of File Integrity Feedback	4 hours of File Integrity Feedback
4	Outstanding Rejections Feedback	Data Errors that have not been repaired	5:00 p.m. Eastern Time	5:00 p.m. Eastern Time

Feedback Files are versioned as they proceed through each stage of processing. The following tables, [Table 13](#) and [Table 14](#), show for each stage of processing which feedback file version will be posted and the possible submission status for each version. Not all files will proceed to feedback file version 4. For example, Reference Data Files that fail to pair will have a submission status of COMPLETED_FILE_TIMEOUT and will not proceed to version 4.

Table 13: Reference Data Feedback File Versions

Seq	Processing Stage	Version	Possible Submission Status
1	File Acknowledgement	v1	FILE_ACKNOWLEDGED INCOMPLETE_PROCESSING_FAILURE CANCELLED_BY_SUPPORT
2	File Integrity	v2	FILE_INTEGRITY_PASSED COMPLETED_INTEGRITY_ERROR INCOMPLETE_PROCESSING_FAILURE CANCELLED_BY_SUPPORT
3	Data Validation	v3	RECORD_SCAN_COMPLETED INCOMPLETE_PROCESSING_FAILURE CANCELLED_BY_SUPPORT COMPLETED_FILE_TIMEOUT
3	Data Validation	v4	COMPLETED_WITHOUT_REJECTIONS COMPLETED_WITH_REJECTIONS INCOMPLETE_PROCESSING_FAILURE CANCELLED_BY_SUPPORT

Table 14: Transformed Identifiers Feedback File Versions

Seq	Processing Stage	Version	Possible Submission Status
1	File Acknowledgement	v1	FILE_ACKNOWLEDGED INCOMPLETE_PROCESSING_FAILURE CANCELLED_BY_SUPPORT
2	File Integrity	v2	FILE_INTEGRITY_PASSED COMPLETED_INTEGRITY_ERROR

Seq	Processing Stage	Version	Possible Submission Status
			INCOMPLETE_PROCESSING_FAILURE CANCELLED_BY_SUPPORT
3	Data Validation	v3	RECORD_SCAN_COMPLETED INCOMPLETE_PROCESSING_FAILURE CANCELLED_BY_SUPPORT
3	Data Validation	v4	COMPLETED COMPLETED_FILE_TIMEOUT INCOMPLETE_PROCESSING_FAILURE CANCELLED_BY_SUPPORT

6.1.1. Feedback Generation for Reference Data and Transformed Identifiers Files

Feedback associated with all processing stages will be made available via SFTP and/or the Reference Database Reporter Portal as described in [Table 8: CAT Data and Feedback Interface Methods](#). A series of feedback files will be generated for each file submission as the file progresses through File Acknowledgement, File Integrity and Data Validation. The filenames will have the same base portion, but with differing version values.

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

1. The format of feedback files will be JSON.
2. Feedback Files for Reference Data File submissions will be accessible under the `cat/ref/feedback` directory in the CAT Submitter's home directory on the Feedback SFTP server.
3. Feedback Files for Transformed Identifier File submissions will be accessible under the `cat/tid/feedback` directory in the CAT Submitter's home directory on the Feedback SFTP server.
4. In addition to the feedback posted to the CAT Submitter's home directories, the feedback for data submitted by a CAT Submitter on behalf of an Industry Member will be accessible under the Industry Member's home directory on the Feedback SFTP server after the file has passed file integrity checks if the Industry Member has an SFTP account.
5. If a file is rejected for a file integrity error, it will not proceed to the next processing stage.
6. 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. Additionally, feedback files can be deleted from the SFTP directory by a submitter at any time. Feedback will be available via the Reference Database Reporter Portal for 10 calendar days. Metadata regarding the submission will be available via the Reference Database Reporter Portal for at least 90 days.

6.1.2. Feedback Filenames and Format

1. Feedback Files created by the Reference Database will be named using the following format:

<original file base name>.<version>.feedback.<Format Extension>.<Compression Type>

Example: SUBID_MYID_20200101_REF_000123.v1.feedback.json.bz2

Example: SUBID_MYID_20200101_TIDS_000123.v1.feedback.json.bz2

2. If a single Industry Member submits multiple files having the same original file base name, a file version will be appended to the original file base name – separate from the version attribute of the feedback filename – so that the feedback file for each version submitted can be retained.
3. Separate feedback files will be provided for the Reference Data and Transformed Identifiers Files.

Table 15: Elements of a Reference Data Feedback File

Field Name	Data Type	JSON Object	Include Key	Description
version	Text (10)	Main	R	The schema version of the feedback file used for providing the response.
submissionID	Unsigned	Main	R	The unique Submission ID assigned to the Reference Data File by the Reference Database. Used to identify the single submission activity. If the same filename is submitted across multiple submissions, each submission instance will have a separate and unique Submission ID value.
submitterUsername	Text (200)	Main	R	The name associated to the CAT User ID of the account used to submit the file to the Reference Database.
catSubmitterID	Unsigned	Main	R	The ID of the firm that submitted the file to CAT.
catReporterCRD	Unsigned	Main	R	The CRD number assigned to the Industry Member to which the data within the submitted file belongs.
correspondentCRD	Unsigned	Main	C	The CRD number of the related introducing broker or correspondent firm whose customer and account data is kept on record at the Industry Member reporting to CAT. Only populated when <i>correspondentCRD</i> is populated in the submission file.
submissionStatus	Choice	Main	R	The current status of the submission file in the processing flow. VALUES: <ul style="list-style-type: none"> • FILE_ACKNOWLEDGED – indicates the file was acknowledged as having been submitted and has been picked up for file integrity checks.

Field Name	Data Type	JSON Object	Include Key	Description
				<ul style="list-style-type: none"> • FILE_INTEGRITY_PASSED – indicates the file passed file integrity checks and will now be processed through record data validations. • RECORD_SCAN_COMPLETED – indicates the file has completed record validations. If one or more records passed record validation, they will now be loaded to the Reference Database. Details about any rejected records are now available within the feedback file in the <i>rejectionItems</i> section. • COMPLETED_WITHOUT_REJECTION S – indicates the file has completed loading into the Reference Database, and no data validation errors were encountered. No further updates will be made to the feedback file. • COMPLETED_WITH_REJECTIONS – indicates the file has completed data validation checks, and one or more data validation errors were encountered. No further updates will be made to the feedback file. • COMPLETED_INTEGRITY_ERROR – indicates the file failed file integrity checks and cannot be processed. No further updates will be made to the feedback file upon reaching this status. • COMPLETED_FILE_TIMEOUT – indicates the paired Transformed Identifiers File was not received within the prescribed time frame or was rejected. No further updates will be made to the feedback file. • INCOMPLETE_PROCESSING_FAILURE E – indicates the file had an unexpected error and could not be processed. No further updates will be made to the feedback file. • CANCELLED_BY_SUPPORT – indicates the submission was cancelled by Reference Database support staff at the request of the Industry Member. No further updates will be made to the feedback file.
receiptTimestamp	Timestamp (String)	Main	R	The time at which the file was acknowledged to have been submitted for processing.
completedTimestamp	Timestamp (String)	Main	C	The time at which the file completed processing, reaching a completed status. Only populated after the file has reached a final status of COMPLETED_INTEGRITY_ERROR , COMPLETED_FILE_TIMEOUT , COMPLETED_WITHOUT_REJECTIONS , COMPLETED_WITH_REJECTIONS ,

Field Name	Data Type	JSON Object	Include Key	Description
				INCOMPLETE_PROCESSING_FAILURE or CANCELLED_BY_SUPPORT .
receivedFDIDRecordCount	Unsigned	Main	C	Total count of FDID Records present within the file. Only populated when the file has reached the interim status of RECORD_SCAN_COMPLETED or a final status of COMPLETED_WITHOUT_REJECTIONS or COMPLETED_WITH_REJECTIONS .
successfulFDIDRecordCount	Unsigned	Main	C	Total count of FDID Records processed without data validation errors. Only populated when the file has reached the interim status of RECORD_SCAN_COMPLETED or a final status of COMPLETED_WITHOUT_REJECTIONS or COMPLETED_WITH_REJECTIONS .
receivedNaturalRecordCount	Unsigned	Main	C	Total count of Natural Person Customer Records present within the file. Only populated when the file has reached the interim status of RECORD_SCAN_COMPLETED or a final status of COMPLETED_WITHOUT_REJECTIONS or COMPLETED_WITH_REJECTIONS .
successfulNaturalRecordCount	Unsigned	Main	C	Total count of Natural Person Customer Records processed without data validation errors. Only populated when the file has reached the interim status of RECORD_SCAN_COMPLETED or a final status of COMPLETED_WITHOUT_REJECTIONS or COMPLETED_WITH_REJECTIONS .
receivedLegalEntityRecordCount	Unsigned	Main	C	Total count of Legal Entity Customer Records present within the file. Only populated when the file has reached the interim status of RECORD_SCAN_COMPLETED or a final status of COMPLETED_WITHOUT_REJECTIONS or COMPLETED_WITH_REJECTIONS .
successfulLegalEntityRecordCount	Unsigned	Main	C	Total count of Legal Entity Customer Records processed without data validation errors. Only populated when the file has reached the interim status of RECORD_SCAN_COMPLETED or a final status of COMPLETED_WITHOUT_REJECTIONS or COMPLETED_WITH_REJECTIONS .
receivedCorrectionActionCount	Unsigned	Main	C	Total count of Correction Action records present within the file. Only populated when the file has reached the interim status of RECORD_SCAN_COMPLETED or a final status of COMPLETED_WITHOUT_REJECTIONS or COMPLETED_WITH_REJECTIONS .
successfulCorrectionActionCount	Unsigned	Main	C	Total count of Correction Action Records processed without data validation warnings. Only populated when the file has reached the interim status of RECORD_SCAN_COMPLETED or a final status of COMPLETED_WITHOUT_REJECTIONS or COMPLETED_WITH_REJECTIONS .

Field Name	Data Type	JSON Object	Include Key	Description
statusHistory	Name/Value Pair	Main	R	Includes the list of events and corresponding timestamps from file processing. Includes one or more of the following statuses: <ul style="list-style-type: none"> FILE_ACKNOWLEDGED FILE_INTEGRITY_PASSED RECORD_SCAN_COMPLETED COMPLETED_WITH_REJECTIONS COMPLETED_WITHOUT_REJECTIONS COMPLETED_FILE_TIMEOUT INCOMPLETE_PROCESSING_FAILURE COMPLETED_INTEGRITY_ERROR CANCELLED_BY_SUPPORT
rejectionItems	Multi-Dimensional Array	Main	C	Includes the list of file integrity error codes or records having data validation errors. Only populated if the file had an integrity error or at least one record had a data validation error, and only when the file has reached the interim status of RECORD_SCAN_COMPLETED or the final statuses of COMPLETED_WITH_REJECTIONS or COMPLETED_INTEGRITY_ERROR .
rejectionID	Unsigned	Rejection Record	R	Identifier assigned by CAT to uniquely identify a rejected record or file.
firmDesignatedID	Text (40)	Rejection Record	C	The <i>firmDesignatedID</i> , as submitted to the Reference Database, of the record having the data validation error. Only populated on FDID rejections.
fdidRecordID	Unsigned	Rejection Record	C	The <i>fdidRecordID</i> , as submitted to the Reference Database, of the record having the data validation error. Only populated on FDID rejections.
customerRejectionEventID	Text (100)	Rejection Record	C	Only available in the Reference Database Reporter Portal. A unique identifier assigned by CAT for the specific CAT Customer – by <i>tidValue</i> – having one or more rejections. If the same CAT Customer (<i>tidValue</i>) is subsequently rejected, it will be assigned the same unique identifier. This ID is used because the <i>tidValue</i> of the CAT Customer cannot be returned to the Industry Member after it is submitted to CAT.
customerRecordID	Array of Unsigned Values	Rejection Record	C	The <i>customerRecordID</i> , as submitted to the Reference Database, of the record having the data validation error. Only populated on Customer Record rejections or when an FDID Record rejects because an associated Customer Record rejected.
errorCode	Unsigned	Rejection Record	R	The error code of the file integrity error or data validation error.

Field Name	Data Type	JSON Object	Include Key	Description
rejectionTimestamp	Timestamp (String)	Rejection Record	R	Indicates the time at which the file integrity or data validation error was identified.
failedCorrectionItems	Multi-Dimensional Array	Main	C	Includes the list of Correction Action Records having data validation warnings. Only populated if at least one record had a data validation warning, and only when the file has reached the interim status of RECORD_SCAN_COMPLETED or a final status of COMPLETED_WITHOUT_REJECTIONS or COMPLETED_WITH_REJECTIONS .
failedRejectionID	Unsigned	Failed Correction Record	R	The unique ID reference reported in the submission file for the Correction Action Record that was not able to be processed.
warningCode	Unsigned	Failed Correction Record	R	The warning code of the data validation, noting which attribute caused the Correction Action Record to not be able to be processed.

Table 16: Elements of a Transformed Identifiers Feedback File

Field Name	Data Type	JSON Object	Include Key	Description
version	Text (10)	Main	R	The schema version of the feedback file used for providing the response.
submissionID	Text (36)	Main	R	The unique Submission ID assigned to the Transformed Identifier File by the Reference Database. Used to identify the single submission activity. If the same filename is submitted across multiple submissions, each submission instance will have a separate and unique Submission ID value.
submissionStatus	Choice	Main	R	The current status of the submission file in the processing flow. VALUES: <ul style="list-style-type: none"> FILE_ACKNOWLEDGED – indicates the file was acknowledged as having been submitted, and has been picked up for file integrity checks. FILE_INTEGRITY_PASSED – indicates the file passed file integrity checks and will now be processed through record data validations. RECORD_SCAN_COMPLETED – indicates the file has completed record validations. If one or more records passed record validation, they will now be loaded to the Reference Database. Details about any rejected records are

Field Name	Data Type	JSON Object	Include Key	Description
				<p>now available within the feedback file in the <i>rejectionItems</i> section.</p> <ul style="list-style-type: none"> • COMPLETED_INTEGRITY_ERROR – indicates the file failed file integrity checks and cannot be processed. No further updates will be made to the feedback file upon reaching this status. • COMPLETED – indicates the paired Reference Data and Transformed Identifiers Files have been successfully loaded into the Reference Database. Please refer to the feedback file for details regarding outcomes of record validations. • COMPLETED_FILE_TIMEOUT – indicates the paired Reference Data File was not received within the prescribed time frame or was rejected. No further updates will be made to the feedback file. • INCOMPLETE_PROCESSING_FAILURE – indicates the file had an unexpected error and could not be processed. No further updates will be made to the feedback file. • CANCELLED_BY_SUPPORT – indicates the submission was cancelled by Reference Database support staff at the request of the Industry Member. No further updates will be made to the feedback file.
receiptTimestamp	Timestamp (String)	Main	R	The time at which the file was acknowledged to have been submitted for processing.
completedTimestamp	Timestamp (String)	Main	C	The time at which the file completed processing, reaching a completed status. Only populated after the file has reached a final status of: COMPLETED, COMPLETED_INTEGRITY_ERROR, COMPLETED_FILE_TIMEOUT, INCOMPLETE_PROCESSING_FAILURE or CANCELLED_BY_SUPPORT
receivedTIDsCount	Unsigned	Main	C	Total count of TID Records present within the file. Only populated when the file has reached the final status of COMPLETED .
successfulTIDsCount	Unsigned	Main	C	Total count of TID Records processed without record validation warnings. Only populated when the file has reached the final status of COMPLETED .
statusHistory	Name/Value Pair	Main	R	Includes the list of events and corresponding timestamps from file processing. Includes one or more of the following statuses: <ul style="list-style-type: none"> • FILE_ACKNOWLEDGED • FILE_INTEGRITY_PASSED

Field Name	Data Type	JSON Object	Include Key	Description
				<ul style="list-style-type: none"> RECORD_SCAN_COMPLETED COMPLETED_INTEGRITY_ERROR COMPLETED COMPLETED_FILE_TIMEOUT INCOMPLETE_PROCESSING_FAILURE CANCELLED_BY_SUPPORT
rejectionItems	Multi-Dimensional Array	Main	C	Includes the list of file integrity error codes or records having data validation errors. Only populated if the file had an integrity error or at least one record had a data validation error, and only when the file has reached the interim status of RECORD_SCAN_COMPLETED or the final status of COMPLETED .
rejectionID	Unsigned	Rejection Record	C	Populated if a file integrity error occurs. If populated, set to 'null' in the Transformed Identifiers Feedback File.
customerRecordID	Array of Unsigned Values	Rejection Record	C	The <i>customerRecordID</i> , as submitted to the Reference Database, of the record having the data validation error. Always populated unless the rejection resulted from file integrity error or a malformed or missing <i>customerRecordID</i> .
errorCode	Unsigned	Rejection Record	C	The error code of the file integrity error or data validation error.
rejectionTimestamp	Timestamp (String)	Rejection Record	R	Indicates the time at which the file integrity or data validation error was identified.

6.1.3. JSON Examples of Feedback File for File Acknowledgement

The following is an example of a Reference Data Feedback File after the submission has been acknowledged and accepted for file integrity checks:

Original Reference Data File Submission Filename	123_456_20200204_REF_000123.json.bz2
Reference Data Feedback Filename	123_456_20200204_REF_000123.v1.feedback.json.bz2
Feedback File Contents	<pre>{ "version": "1.0.0", "submissionID": 7, "submitterUsername": "refdbimusr", "catSubmitterID": 123, "catReporterCRD": 456, "submissionStatus": "FILE_ACKNOWLEDGED", "receiptTimestamp": "20200204T152233.000045000", "statusHistory": { "FILE_ACKNOWLEDGED": "20200204T152233.000045000" } }</pre>

The following is an example of a Transformed Identifiers Feedback File after the submission has been acknowledged and accepted for file integrity checks:

Original Transformed Identifiers File Submission Filename	123_456_20200204_TIDS_000123.json.bz2
Transformed Identifiers Feedback Filename	123_456_20200204_TIDS_000123.v1.feedback.json.bz2
Feedback File Contents	<pre>{ "version": "1.0.0", "submissionID": 15, "submissionStatus": "FILE_ACKNOWLEDGED", "receiptTimestamp": "20200204T152233.000045000", "statusHistory": { "FILE_ACKNOWLEDGED": "20200204T152233.000045000" } }</pre>

6.2. File Integrity

During the File Integrity processing stage, the submission file contents are also validated to ensure they are readable and formatted as expected.

The following additional rules apply:

1. Filenames which duplicate prior submissions will reject during File Integrity.
2. Files which are not readable will reject.
3. Reference Data Files which do not have a paired Transformed Identifiers File posted within 60 minutes will reject.
4. Transformed Identifiers Files which do not have a paired Reference Data File posted within 60 minutes will reject.
5. Reference Data Files which include inaccurate counts of records will reject.
6. Transformed Identifiers Files which include inaccurate counts of TIDs will reject.
7. The CAT Submitter ID within the filename must be equal to the Submitter ID of the submitter that sent the files (as determined from SFTP or the Reference Database Reporter Portal username).
8. The CAT Reporter CRD within the filename must match the *catReporterCRD* populated in the Reference Data File.
9. The paired Reference Data and Transformed Identifiers Files must be submitted by the same Industry Member or CAT Reporting Agent.
10. If a CAT Submitter is reporting on behalf of the Industry Member, a reporting relationship must be effective.
11. Reference Data Files that have a file integrity error will result in the paired Transformed Identifiers File also having a file integrity error; likewise, Transformed Identifiers Files that have a file integrity error will result in the paired Reference Data File also having a file integrity error.

6.2.1. JSON Examples for File Integrity Feedback

File Submission Integrity Success:

Original Reference Data File Submission Filename	123_456_20200204_REF_000123.json.bz2
Reference Data Feedback Filename	123_456_20200204_REF_000123.v2.feedback.json.bz2
Feedback File Contents	<pre>{ "version": "1.0.0", "submissionID": 7, "submitterUsername": "refdbimusr", "catSubmitterID": 123, "catReporterCRD": 456, "submissionStatus": "FILE_INTEGRITY_PASSED", "receiptTimestamp": "20200204T152233.000045000", "statusHistory": { "FILE_ACKNOWLEDGED": "20200204T152233.000045000", "FILE_INTEGRITY_PASSED": "20200204T152234.123245000" } }</pre>

Original Transformed Identifiers File Submission Filename	123_456_20200204_TIDS_000123.json.bz2
Transformed Identifiers Feedback Filename	123_456_20200204_TIDS_000123.v2.feedback.json.bz2
Feedback File Contents	<pre>{ "version": "1.0.0", "submissionID": 15, "submissionStatus": "FILE_INTEGRITY_PASSED", "receiptTimestamp": "20200204T152233.000045000", "statusHistory": { "FILE_ACKNOWLEDGED": "20200204T152233.000045000", "FILE_INTEGRITY_PASSED": "20200204T152234.123245000" } }</pre>

File Submission Integrity Error:

Original Reference Data File Submission Filename	123_456_20200204_REF_000123.json.bz2
Reference Data Feedback Filename	123_456_20200204_REF_000123.v2.feedback.json.bz2
Feedback File Contents	<pre>{ "version": "1.0.0", "submissionID": 7, "submitterUsername": "refdbimusr", "catSubmitterID": 123, "catReporterCRD": 456, "submissionStatus": "COMPLETED_INTEGRITY_ERROR", "receiptTimestamp": "20200204T152233.000045000", "completedTimestamp": "20200204T152721.023423000", "statusHistory": { "FILE_ACKNOWLEDGED": "20200204T152233.000045000", "COMPLETED_INTEGRITY_ERROR": "20200204T152721.023423000" }, "rejectionItems": [{ </pre>

	<pre>"rejectionID": 1127, "errorCode": 21007, "rejectionTimestamp": "20200204T152721.023423000" }] }</pre>
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Original Transformed Identifiers File Submission Filename	123_456_20200204_TIDS_000123.json.bz2
Transformed Identifiers Feedback Filename	123_456_20200204_TIDS_000123.v2.feedback.json.bz2
Feedback File Contents	<pre>{ "version": "1.0.0", "submissionID": 15, "submissionStatus": "COMPLETED_INTEGRITY_ERROR", "receiptTimestamp": "20200204T152233.000045000", "completedTimestamp": "20200204T152721.023423000", "statusHistory": { "FILE_ACKNOWLEDGED": "20191123T152233.000045000", "COMPLETED_INTEGRITY_ERROR": "20200204T152721.023423000" }, "rejectionItems": [{ "rejectionID": null, "customerRecordID": null, "errorCode": 21507, "rejectionTimestamp": "20200204T152721.023423000" }] }</pre>

6.3. Data Validation

During Data Validation, records within the Reference Data File and Transformed Identifiers Files 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 record type of every record contained in the file. Data Validation feedback will be provided with reference to any and all records that have data validation errors.

During the Data Validation stage, each record will be checked for proper formatting (JSON field names and values) and data contents.

The following additional rules apply:

1. Data Validation feedback will be generated for every submission file passing file integrity checks.
2. Any record within a Reference Data File determined to be malformed or otherwise invalid will be rejected, but will not cause a rejection of the full file. However, if an FDID Record rejects, all associated Customer Records will also reject. If a Customer Record rejects, the FDID Record will reject and therefore, all other associated Customer Records will also reject. In addition, if a Customer

Record rejects for an error on the Customer Record, all other Customer Records within the submission file with the same *tidValue* will also reject.

3. Any record within a Transformed Identifiers File determined to be malformed or otherwise invalid will be rejected, but will not cause a rejection of the full file.
4. When a record is readable and can be parsed, data validations and data layer validations will occur for every field within the record.
5. One or more errors may be found within a record.
6. Each error identified against a single FDID or Customer record will be listed separately within the feedback file.
7. The original record reported to the Reference Database will not be included in the feedback file. The feedback file will instead include the associated record IDs (*fdidRecordID*, *customerRecordID*, *correctingCustomerRecordID*) of the record having the error. If the error is on an FDID Record, the *firmDesignatedID* will also be included in the feedback file.
8. Records that are not rejected during Data Validation will be imported into the Reference Database.
9. If an FDID Record passes validation, but contains one or more errors on associated Customer Records, the FDID Record will be rejected and no updates from the record will be stored in the Reference Database.

6.3.1. JSON Examples for Data Validation Feedback

Reference Data File Submission Data Validation Success (Interim status noting that the record scan was completed):

Original Reference Data File Submission Filename	123_456_20200204_REF_000123.json.bz2
Reference Data Feedback Filename	123_456_20200204_REF_000123.v3.feedback.json.bz2
Feedback File Contents	<pre>{ "version": "1.0.0", "submissionID": 7, "submitterUsername": "refdbimusr", "catSubmitterID": 123, "catReporterCRD": 456, "submissionStatus": "RECORD_SCAN_COMPLETED", "receiptTimestamp": "20200204T152233.000045000", "receivedFDIDRecordCount": 100, "successfulFDIDRecordCount": 100, "receivedNaturalRecordCount": 50, "successfulNaturalRecordCount": 50, "receivedLegalEntityRecordCount": 60, "successfulLegalEntityRecordCount": 60, "receivedCorrectionActionCount": 0, "successfulCorrectionActionCount": 0, "statusHistory": { "FILE_ACKNOWLEDGED": "20200204T152233.000045000", "FILE_INTEGRITY_PASSED": "20200204T152234.123245000", "RECORD_SCAN_COMPLETED": "20200204T152255.324392000" } }</pre>

	<pre>"rejectionItems": [], "failedCorrectionItems": [] }</pre>
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Original Transformed Identifiers File Submission Filename	123_456_20200204_TIDS_000123.json.bz2
Transformed Identifiers Feedback Filename	123_456_20200204_TIDS_000123.v3.feedback.json.bz2
Feedback File Contents	<pre>{ "version": "1.0.0", "submissionID": 15, "submissionStatus": "RECORD_SCAN_COMPLETED", "receiptTimestamp": "20200204T152233.000045000", "receivedTIDsCount": "7", "successfulTIDsCount": "7", "statusHistory": { "FILE_ACKNOWLEDGED": "20200204T152233.000045000", "FILE_INTEGRITY_PASSED": "20200204T152234.123245000", "RECORD_SCAN_COMPLETED": "20200204T152255.324392000" } }</pre>

Reference Data File Submission Data Validation Success (Final status noting that the file completed Data Validation without rejections):

Original Reference Data File Submission Filename	123_456_20200204_REF_000123.json.bz2
Reference Data Feedback Filename	123_456_20200204_REF_000123.v4.feedback.json.bz2
Feedback File Contents	<pre>{ "version": "1.0.0", "submissionID": 7, "submitterUsername": "refdbimusr", "catSubmitterID": 123, "catReporterCRD": 456, "submissionStatus": "COMPLETED_WITHOUT_REJECTIONS", "receiptTimestamp": "20200204T152233.000045000", "completedTimestamp": "20200204T152721.023423000", "receivedFDIDRecordCount": 100, "successfulFDIDRecordCount": 100, "receivedNaturalRecordCount": 50, "successfulNaturalRecordCount": 50, "receivedLegalEntityRecordCount": 60, "successfulLegalEntityRecordCount": 60, "receivedCorrectionActionCount": 0, "successfulCorrectionActionCount": 0, "statusHistory": { "FILE_ACKNOWLEDGED": "20200204T152233.000045000", "FILE_INTEGRITY_PASSED": "20200204T152234.123245000", "RECORD_SCAN_COMPLETED": "20200204T152255.324392000", "COMPLETED_WITHOUT_REJECTIONS": "20200204T152721.023423000" }, "rejectionItems": [], "failedCorrectionItems": [] }</pre>

Original Transformed Identifiers File Submission Filename	123_456_20200204_TIDS_000123.json.bz2
Transformed Identifiers Feedback Filename	123_456_20200204_TIDS_000123.v4.feedback.json.bz2
Feedback File Contents	{ "version": "1.0.0", "submissionID": 15, "submissionStatus": "COMPLETED", "receiptTimestamp": "20200204T152233.000045000", "completedTimestamp": "20200204T152721.023423000", "receivedTIDsCount": "7", "successfulTIDsCount": "7", "statusHistory": { "FILE_ACKNOWLEDGED": "20200204T152233.000045000", "FILE_INTEGRITY_PASSED": "20200204T152234.123245000", "COMPLETED": "20200204T152255.324392000" } }

Reference Data File Submission Data Validation Error and Failed Correction Action:

Original Reference Data File Submission Filename	123_456_20200204_REF_000123.json.bz2
Reference Data Feedback Filename	123_456_20200204_REF_000123.v4.feedback.json.bz2
Feedback File Contents	{ "version": "1.0.0", "submissionID": 7, "submitterUsername": "refdbimusr", "catSubmitterID": 123, "catReporterCRD": 456, "submissionStatus": "COMPLETED_WITH_REJECTIONS", "receiptTimestamp": "20200204T152233.000045000", "completedTimestamp": "20200204T152721.023423000", "receivedFDIDRecordCount": 100, "successfulFDIDRecordCount": 99, "receivedNaturalRecordCount": 50, "successfulNaturalRecordCount": 49, "receivedLegalEntityRecordCount": 60, "successfulLegalEntityRecordCount": 60, "receivedCorrectionActionCount": 1, "successfulCorrectionActionCount": 0, "statusHistory": { "FILE_ACKNOWLEDGED": "2019200204T152233.000045000", "FILE_INTEGRITY_PASSED": "20200204T152234.123245000", "RECORD_SCAN_COMPLETED": "20200204T152255.324392000", "COMPLETED_WITH_REJECTIONS": "20200204T152721.023423000" }, "rejectionItems": [{ "rejectionID": 1127, "firmDesignatedID": "ABC123", "fdidRecordID": 4, "errorCode": 22005, "rejectionTimestamp": "20200204T152221.023423000" }, { "rejectionID": 9985, "customerRecordID": [73],

	<pre> "errorCode": 22900, "rejectionTimestamp": "20200204T152221.023423000" }], "failedCorrectionItems": [{ "failedRejectionID": 5000, "warningCode": 24002 }] } </pre>
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Original Transformed Identifiers File Submission Filename	123_456_20200204_TIDS_000123.json.bz2
Transformed Identifiers Feedback Filename	123_456_20200204_TIDS_000123.v4.feedback.json.bz2
Feedback File Contents	<pre> { "version": "1.0.0", "submissionID": 15, "submissionStatus": "COMPLETED", "receiptTimestamp": "20200204T152233.000045000", "completedTimestamp": "20200204T152721.023423000", "receivedTIDsCount": "7", "successfulTIDsCount": "6", "statusHistory": { "FILE_ACKNOWLEDGED": "20200204T152233.000045000", "FILE_INTEGRITY_PASSED": "20200204T152234.123245000", "COMPLETED": "20200204T152721.023423000" }, "rejectionItems": [{ "rejectionID": null, "customerRecordID": [73], "errorCode": 24902, "rejectionTimestamp": "20200204T152221.023423000" }] } </pre>

6.4. Outstanding Rejections

Rejections identified during Data Validation that remain unrepaired at the time of the Outstanding Rejections scan will be returned in the Outstanding Rejections Feedback File. Specifically, all records submitted by 8:00 a.m. Eastern Time and rejected by the Reference Database will participate in the once-daily Outstanding Rejections scan, along with records that were previously rejected and remain unrepaired. Feedback containing any outstanding rejections will be delivered in a metadata file and data file set by 5:00 p.m. Eastern Time. Records submitted after the cut-off time and subsequently rejected by the Reference Database will participate in the following day's Outstanding Rejections scan.

The following additional rules apply to Outstanding Rejections Feedback Files:

1. Feedback Files for Outstanding Rejections will be accessible via the Reference Database Reporter Portal and under the `/submitterID/cat/ref/feedback` directory in the CAT Submitters home directory on the Feedback SFTP server.
2. A sentinel file will be posted to the SFTP directory to indicate that the Outstanding Rejections scan ran successfully and is complete. The sentinel file will be empty.
3. If there are no outstanding rejections, only a sentinel file will be posted to the SFTP folder to indicate the operation ran successfully but did not produce any results.
4. The Outstanding Rejections Feedback will include a metadata and data file set. The data file will include details about the rejections and the metadata file will include the count of Customer and FDID record rejections contained within the data file.
5. A set(s) of metadata file and data file will be delivered for each combination of CAT Submitter, CAT Reporter CRD and Correspondent CRD.
6. The Outstanding Rejections Data Feedback File will be limited to 400,000 *rejectionIDs*. If the *catReporterCRD* and *correspondentCRD* combination exceeds 400,000 *rejectionIDs*, an additional set(s) of metadata and data files will be delivered.

Outstanding Rejections Metadata Feedback Files will be named using the following format:

```
<CAT Submitter ID>_<CAT Reporter CRD>_<Correspondent CRD>_<File Generation
Date>_<File Kind>_<Group>_<File Type>.<Format Extension>
```

Example: 99999999_555_2_20240401_OUTSTANDINGREJECTIONS_000001_meta.json

Outstanding Rejections Data Feedback Files will be named using the following format:

```
<CAT Submitter ID>_<CAT Reporter CRD>_<Correspondent CRD>_<File Generation
Date>_<File Kind>_<Group>_<File Type>.<Format Extension>.<Compression
Extension>
```

Example: 99999999_555_2_20240401_OUTSTANDINGREJECTIONS_000001_data.json.bz2

The Outstanding Rejections Sentinel Feedback File will be named using the following format:

```
<File Generation Date>_OUTSTANDINGREJECTIONS_processed
```

Example: 20240402_OUTSTANDINGREJECTIONS_processed

Table 17: Elements of an Outstanding Rejections Metadata Feedback File

Field Name	Data Type	JSON Object	Include Key	Description
catSubmitterID	Unsigned	Main	R	The ID of the firm that submitted the data to CAT.
catReporterCRD	Unsigned	Main	R	The CRD number assigned to the Industry Member to which the data within the submission file belongs.
correspondentCRD	Unsigned	Main	C	The CRD number of the related introducing broker or correspondent firm whose customer and account data is kept on record at the Industry Member reporting to CAT. Only populated when <i>correspondentCRD</i> was populated in the submission file.
outstandingFDIDCount	Unsigned	Main	R	Total count of outstanding rejected FDID Records that have not been repaired.
outstandingCustomerCount	Unsigned	Main	R	Total count of outstanding rejected Customer Records that have not been repaired.
errorFeedbackFileName	Text (100)	Main	R	Name of the corresponding Outstanding Feedback File

Table 18: Elements of an Outstanding Rejections Data Feedback File

Field Name	Data Type	JSON Object	Include Key	Description
type	Choice	Main	R	Indicates if the rejected record was an FDID or Customer record rejection. Values: <ul style="list-style-type: none"> FDIDRejection – Indicates the FDID Record was rejected CustomerRejection – Indicates the Customer Record was rejected.
rejectedFDID	Text (40)	Main	C	The <i>firmDesignatedID</i> , as submitted to the Reference Database, of the record having the data validation error. Only populated on the FDID rejections.
submissionFilename	Text (100)	Main	R	Name of the file in which the rejected FDID or Customer record was last submitted.
submissionID	Unsigned	Main	R	The unique Submission ID assigned to the Reference Data File by the Reference Database. Used to identify the single submission activity. If the same submissionFilename is submitted across multiple submissions, each submission instance will have a separate and unique Submission ID value.

Field Name	Data Type	JSON Object	Include Key	Description
rejectionID	Unsigned	Main	R	Identifier assigned by CAT to uniquely identify a rejected record.
fdidRecordID	Unsigned	Main	C	The <i>fdidRecordID</i> , as submitted to the Reference Database, of the record having the data validation error. Only populated on FDID rejections.
errorCode	Unsigned	Main	R	The error code of the data validation error.
customerRecordID	Array of Unsigned Values	Main	C	The <i>customerRecordID</i> , as submitted to the Reference Database, of the record having the data validation error. Only populated on Customer Record rejections or when an FDID Record rejects because an associated Customer Record rejected.
rejectionTimestamp	Timestamp (String)	Main	R	Indicates the time at which the data validation error was originally identified.
customerRejectionEventID	Text (100)	Main	C	A unique identifier assigned by CAT for the specific CAT Customer – by <i>tidValue</i> – having one or more rejections. If the same CAT Customer (<i>tidValue</i>) is subsequently rejected, it will be assigned the same unique identifier. This ID is used because the <i>tidValue</i> of the CAT Customer cannot be returned to the Industry Member after it is submitted to CAT.

6.4.1. JSON Examples for Outstanding Rejections Metadata and Data Feedback

The following JSON example demonstrates the structure of an Outstanding Rejections Metadata Feedback File.

Outstanding Rejections Metadata Feedback Filename	99999999_555_2_20240401_OUTSTANDINGREJECTIONS_000001_meta.json
Feedback File Contents	<pre>{ "catSubmitterID": 99999999, "catReporterCRD": 555, "correspondentCRD": 2, "outstandingFDIDCount": 2, "outstandingCustomerCount": 2, "errorFeedbackFileName": "99999999_555_2_20240401_OUTSTANDINGREJECTIONS_000001_data.json.bz2" }</pre>

The following JSON example demonstrates the structure of an Outstanding Rejections Data Feedback File.

Outstanding Rejections Data Feedback Filename	99999999_555_2_20240401_OUTSTANDINGREJECTIONS_000001_data.json.bz2
Feedback File Contents	<pre> {"type": "FDIDRejection", "rejectedFDID": "ExAccount4", "submissionFilename": "99999999_555_20240312_Group03_REF_000001.json.bz2", "submissionID": 61045, "rejectionID": 61045000000002, "fdidRecordID": 1, "errorCode": 22042, "customerRecordID": [34], "rejectionTimestamp": "20240312T125431.606107000"} {"type": "FDIDRejection", "rejectedFDID": "ExAccount7", "submissionFilename": "99999999_555_20230901_Group126_REF_000123.json.bz2", "submissionID": 611091, "rejectionID": 61045000000003, "fdidRecordID": 902, "errorCode": 22018, "rejectionTimestamp": "20230901T125431.606107000"} {"type": "CustomerRejection", "submissionFilename": "99999999_555_20240112_Group43_REF_000861.json.bz2", "submissionID": 563921, "customerRejectionEventID": "1078\$24948#250#NULL#2023-02-28T01:01:26.340000+00:00", "rejectionID": 563921000000023, "customerRecordID": [1, 4, 46, 311], "errorCode": 22524, "rejectionTimestamp": "20240112T125431.354705000"} {"type": "CustomerRejection", "submissionFilename": "99999999_555_20240112_Group03_REF_000001.json.bz2", "submissionID": 61045, "customerRejectionEventID": "1078\$24948#555#NULL#2023-02-28T01:01:26.340000+00:00", "rejectionID": 61045000003251, "customerRecordID": [22], "errorCode": 22523, "rejectionTimestamp": "20240112T125431.354705000"} </pre>

6.5. Repairs and Corrections

Errors found during the data validation process must be repaired. Errors not found during processing but self-identified by the Industry Member or its CAT Reporting Agent subsequent to transmission must be corrected.

Repairs and self-identified corrections are made by submitting the current state of the FDID Record with all its current CAT Customer associations. The reporting of repairs and corrections is facilitated in the Reference Database through submissions via SFTP and the Reference Database Reporter Portal. Industry Member-initiated corrections of data that had been accepted in prior Reference Database submissions are acceptable at any time and will be processed the same as any other update to the original record. The new data provided on the corrected record will update the currently stored record in the Reference Database. Historical versions of the record will be made available for regulatory use.

The following rejection repair scenarios are detailed below:

- Correction of Reference Database submission files having a File Integrity Error
- Repair of Data Validation Errors

6.5.1. File Integrity Errors

A file integrity error resulting in the inability to process a particular submission file can be corrected by submission of a new file having the same submission filename, with corrected data that passes file integrity checks.

If a file is received having the same submission filename as a prior submission that did not have a file integrity error, the new submission file will be rejected as a file integrity warning, alerting the Industry Member that it has reused the same submission filename as a file that was previously accepted by the Reference Database. The Industry Member does not have to take further action to correct for this submission file, however the data included in the submission file will not be processed through Data Validation nor accepted into the Reference Database.

6.5.2. Data Validation Errors

Data Validation Errors found during processing result in a rejection that must be repaired. The Reference Database tracks historical repairs and the lineage of replacements. When a properly formed FDID or CAT Customer was submitted to the Reference Database, a rejection must be repaired by resubmitting the FDID Record in its current state (with all CAT Customer associations), with corrected data. When a malformed FDID or CAT Customer was submitted to the Reference Database, a rejection must be repaired via the *correctionList*. Rejections for FDIDs or CAT Customers that were not required to be submitted to the Reference Database may optionally be deleted via the *correctionList*.

6.5.2.1. Use of the *correctionList*

The *correctionList* is a feature of the Reference Data File available to support repair of Data Validation Errors through the submission of one or more Correction Action Records. All Data Validation Errors (Error Codes 22001 through 23999) may be repaired by submitting a *correctionAction* of 'DELETE'. A *correctionAction* of 'DELETE' does not delete the FDID or Customer record from the Reference Database; it deletes the rejection. Any FDID Records or Customer Records that are required to be reported to the Reference Database but were submitted with a *correctionAction* of 'DELETE' must be accepted in its full current state by the Reference Database in a prior or subsequent submission.

When a malformed FDID or CAT Customer was submitted to the Reference Database and subsequently rejected, it must be repaired by submitting a Correction Action Record and a *correctionAction* of 'CORRECTION' or 'DELETE'. Repair credit will not be given if the corresponding *rejectionID* is not included in the repairing submission. Records failing Data Validation for the following reasons require use of the *correctionList* within the Reference Data File:

1. Missing or Invalid *firmDesignatedID* (Error Code 22001)

2. Malformed TID Record (Error Code 22900)
 3. *customerRecordID* not present in paired Transformed Identifiers File (Error Code 22526)
 4. Missing or Invalid *customerRecordID* in paired Reference Data File (Error Code 22501)
 5. Paired TID record failed validation (Error Code 22914)
- To delete the rejection, the Industry Member is required to populate the following within the *correctionList*: the *rejectionID* and *correctionAction* of 'DELETE'.
 - To repair the rejection, the Industry Member is required to populate the following within the *correctionList*: the *rejectionID* and *correctionAction* of 'CORRECTION'.

Further, in the 'CORRECTION' scenario:

- For repairing a Missing or Invalid *firmDesignatedID* (Error Code 22001) – the repairing FDID Record must be included within the current submission and pass all data validation checks, or the repairing FDID Record must have been accepted by the Reference Database in a prior submission.
- For repairing a Malformed TID Record (Error Code 22900) or a TID record that failed to pair (Error Code 22914) – the repairing Customer Record must be included in the current submission and pass all data validation checks.
- For a *customerRecordID* in the Transformed Identifiers File (Error Code 22526) or the Data File (Error Code 22501) – the repairing Customer Record must be included in the current submission and pass all data validation checks.

If the repairing record fails Data Validation again for the same reason (Error Code 22001, 22900, 22526, 22501, or 22914), a separate rejection will be created against the repairing record, and the original rejection will remain open for repair. Thus, the Industry Member will have two rejections to repair. If the repairing record does not fail Data Validation again for the same reason (Error Code 22001, 22900, 22526, 22501, or 22914), the original rejection will be closed as repaired. However, if the repairing record fails a separate data validation check, a new rejection will be recorded and tracked against the timeline for repair of the original error.

6.5.2.2. Repair of Other Data Validation Errors

If a submission record fails data validation checks for any reasons other than the format of the FDID or TID value or failure to pair the *customerRecordID*, rejections must be repaired by resubmitting the FDID Record in its current state (with all CAT Customer associations), with corrected data. If the resubmission fails for the same data validation, the prior rejection for the record will be considered repaired, and a new rejection will be created, however the new rejection will be tracked against the timeline for repair of the original error. If the repairing submission fails validation against a separate field, the original rejection will be closed as repaired, and a new rejection will be created for the separate field validation failure, however the new rejection will be tracked against the timeline for repair of the original error.

Note that implicitly ending a rejected record, for example by implicitly ending a Customer Record, will not repair any unrepaired rejections. Rejections can only be repaired by resubmitting the FDID Record (with all CAT Customer associations) with corrected data.

6.6. FDID Reconciliation Report

The FDID Reconciliation Report in the Reference Database Reporter Portal allows an entitled user to upload a text file containing up to 1,000 FDIDs and retrieve a report in .csv format which indicates, for each specified FDID for the selected CAT Reporter CRD, the *firmDesignatedID* value, *correspondentCRD* value (if applicable), FDID Status, Associated Customer Count and Last Accepted File Name.

Industry Members will be able to view all specified FDIDs submitted (either self-submitted or submitted by the CAT Reporting Agent) that were accepted into the Reference Database. The CAT Submitter will be able to view the FDIDs submitted to, and accepted by, the Reference Database for each CAT Reporter CRD for which it has an active reporting relationship. For more information on the FDID Reconciliation Report, please see the [Reference Database Reporter Portal User Guide](#).

FDID Reconciliation Reports created by the Reference Database will be named using the following format:

```
FDID_reconciliation_report_<Date of Generation>_<Timestamp of  
Generation>.<Format Extension>
```

Example:

```
FDID_reconciliation_report_20220101_150948_EDT.csv
```

7. Testing

CAT will provide an environment for testing that mirrors the current functionality of the Reference Database Production Environment, as well as functionality for the next release version of the Reference Database environment when available. The Reference Database Test 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 Reference Database Reporter Portal URLs for specification changes that impact the Reference Database Reporter Portal. Current/new connectivity changes will also be supported concurrently.

Industry Members and CAT Reporting Agents must test their submissions using the Test 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.

8. Additional Information

8.1. 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 Helpdesk contact information.

Web announcements will be made available on the public website. You can also [subscribe](#) to receive email notifications regarding changes to the website and system status notifications. 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 Reference Database Technical Specification for Industry Members (“Technical Specifications”) 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: Error Codes

This section defines the error and warning codes generated by the Reference Database. Each code is defined to include the reason for the error or warning, and the associated fields. Errors found during Reference Database processing must be repaired. Warnings are not subject to further processing and Industry Members 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 record type. Codes are organized by the CAT Processing stages including:

- File Integrity
- Data Validation

B.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 submission files (such as record counts).

Table 19: Reference Data File Integrity Errors

Error Code	Error Code Description	Explanation	Warning/Error
21001	Duplicate File	A file with the same base name was previously accepted by the Reference Database.	Error
21002	Missing or Invalid CAT Submitter ID	CAT Submitter ID is missing or invalid.	Error
21003	Missing or Invalid CAT Reporter CRD	CAT Reporter CRD is missing or is not a valid Market Participant for the Generation Date.	Error
21004	Missing or Invalid File Generation Date	File Generation Date is missing or is not a valid date.	Error
21006	Unauthorized CAT Submitter ID	CAT Submitter ID has not been authorized to submit for the CAT Reporter CRD. Verify that the CAT Submitter ID and CAT Reporter CRD in the filename have a transmitting relationship.	Error
21007	Missing or Invalid <i>fdidRecordCount</i>	The <i>fdidRecordCount</i> in the Reference Data File is missing, is a negative number or does not match the count of FDID Records within the Reference Data File.	Error
21008	Missing or Invalid <i>version</i>	Schema <i>version</i> in the Reference Data File is missing or invalid.	Error
21010	Invalid Reference Database Filename	Reference Database submission filenames must follow the defined format. Submission files uploaded via the Reference Database Reporter Portal or SFTP may not use a Group value of 'refweb'.	
21011	Reference Data File not	Reference Data File format is not readable as it is not in a valid JSON format, contains an incorrect	Error

Error Code	Error Code Description	Explanation	Warning/Error
	Readable	delimiter, or does not follow the prescribed schema.	
21012	Unknown Attribute Name	The file contains a file level attribute that is not known under the reported schema <i>version</i> .	Error
21013	Reference Data File cannot be Uncompressed	The Reference Data File was not properly compressed and cannot be processed.	Error
21014	Paired Transformed Identifiers File not received	The paired Transformed Identifiers File for the Reference Data File was not received in time or had a file integrity error.	Error
21016	Missing or Invalid <i>naturalPersonCustomerRecordCount</i>	The <i>naturalPersonCustomerRecordCount</i> in the Reference Data File is missing, is a negative number, or does not match the count of Natural Person Customer Records within the file.	Error
21017	Missing or Invalid <i>legalEntityCustomerRecordCount</i>	The <i>legalEntityCustomerRecordCount</i> in the Reference Data File is missing, is a negative number, or does not match the count of Legal Entity Customer Records within the file.	Error
21018	Invalid <i>correspondentCRD</i>	When populated, <i>correspondentCRD</i> must be properly formatted and within the allowable range for CRD numbers.	Error
21019	Duplicate occurrences of a field exist	A field can only appear at most one time per JSON object.	Error
21021	Reset in progress	When an Industry Member has requested its data be reset and the reset operation is in progress, the Industry Member nor any of its CAT Submitters can submit files to the Reference Database.	Error

Table 20: Transformed Identifiers File Integrity Errors

Error Code	Error Code Description	Explanation	Warning/Error
21501	Duplicate File	A file with the same base name was previously accepted by the Reference Database.	Error
21504	Missing or Invalid File Generation Date	File Generation Date is missing or is not a valid date.	Error
21507	Missing or Invalid <i>tidRecordCount</i>	The <i>tidRecordCount</i> in the Transformed Identifiers File is missing, is a negative number, or does not match the count of TID Records within the file.	Error
21508	Missing or Invalid <i>version</i>	Schema <i>version</i> in Transformed Identifiers File is missing or invalid.	Error
21510	Invalid Transformed Identifiers Filename	Transformed Identifiers Filenames must follow the defined format.	Error
21511	Transformed Identifiers File not Readable	Transformed Identifiers File format is not readable as it is not in a valid JSON format, contains an incorrect delimiter, or does not follow the prescribed schema.	Error
21512	Unknown Attribute	The file contains a file level attribute that is not known	Error

Error Code	Error Code Description	Explanation	Warning/Error
	Name	under the reported schema <i>version</i> .	
21513	Transformed Identifiers File cannot be Uncompressed	The Transformed Identifiers File was not properly compressed and cannot be processed.	Error
21514	Paired Reference Data File not received	The paired Reference Data File for the Transformed Identifiers File was not received in time or had a file integrity error.	Error
21516	Duplicate occurrences of a field exist	A field can only appear at most one time per JSON object.	Error

B.2 Data Validation Errors

The table below contains error messages that are associated with Data Validation. Error codes are associated with specific fields within a submission record.

Table 21: Data Validation Errors

Error Code	Error Code Description	Explanation	Warning/Error
22001	Missing or Invalid <i>firmDesignatedID</i>	<i>firmDesignatedID</i> must be populated in the correct format for each FDID Record within the file. Affected records will not be processed for further validation checks. Refer to Section 3.8 – Special Rules Regarding FDID Characters for additional details.	Error
22002	Duplicated <i>firmDesignatedID</i>	Each <i>firmDesignatedID</i> must be present in the submission file only once. Affected records will not be processed for further validation checks.	Error
22003	Missing or Invalid <i>fdidRecordID</i>	<i>fdidRecordID</i> must be present and populated for each FDID Record within the file. Affected record will not be processed for further validation checks.	Error
22004	Duplicated <i>fdidRecordID</i>	Each <i>fdidRecordID</i> must be present in the submission file only once. Affected records will not be processed for further validation checks.	Error
22005	Missing or Invalid <i>fdidType</i>	<i>fdidType</i> must be present and populated with one of the allowable values.	Error
22007	Missing or Invalid format of <i>fdidDate</i>	<i>fdidDate</i> must be populated in the correct format. Affected record will not be processed for further validation checks.	Error
22008	Missing or Invalid <i>fdidEndDate</i>	When populated, <i>fdidEndDate</i> must be in the correct format. Must be populated if <i>fdidEndReason</i> is populated.	Error
22009	<i>fdidEndDate</i> set prior to <i>fdidDate</i>	When populated, <i>fdidEndDate</i> must be equal to or later than <i>fdidDate</i> .	Error
22010	Missing or Invalid <i>fdidEndReason</i>	When populated, <i>fdidEndReason</i> must be populated with one of the allowable values. Must be populated if	Error

Error Code	Error Code Description	Explanation	Warning/Error
		<i>fdidEndDate</i> is populated.	
22011	Missing or Invalid <i>replacedByFDID</i>	When populated, <i>replacedByFDID</i> must be in the correct format for <i>firmDesignatedID</i> . Must be populated if <i>fdidEndReason</i> is 'REPLACED'.	Error
22018	Unknown Field Name	The record contains a field that is not known under the reported schema <i>version</i> .	Error
22024	<i>replacedByFDID</i> must not be equal to <i>firmDesignatedID</i>	When populated, <i>replacedByFDID</i> must be a different value than the <i>firmDesignatedID</i> .	Error
22034	Data type violation – FDID Record	FDID Record contains one or more field values that violate the data type for the field.	Error
22040	Missing <i>fdidCustomerList</i>	<i>fdidCustomerList</i> must be present for each FDID Record within the file, unless the FDID is being ended in the submission.	Error
22041	Missing or Invalid <i>customerRecordID</i> within <i>fdidCustomerList</i>	<i>customerRecordID</i> must be present and populated for each record within the <i>fdidCustomerList</i> object and reference a <i>customerRecordID</i> also present in either the <i>naturalPersonCustomerList</i> or <i>legalEntityCustomerList</i> . Affected record will not be processed for further validation checks.	Error
22042	Multiple active roles for CAT Customer within <i>fdidCustomerList</i>	Each CAT Customer, as reconciled to a single <i>tidValue</i> , present in the <i>fdidCustomerList</i> of a single FDID Record must have exactly one <i>role</i> without a set <i>roleEndDate</i> . It is not permissible for the same CAT Customer, as reconciled to a single <i>tidValue</i> , to have different active <i>role</i> values or the same active <i>role</i> value present in the <i>fdidCustomerList</i> . The dates on which a CAT Customer's <i>role</i> on an FDID Record are active cannot overlap by more than one calendar day with other <i>roles</i> for the same CAT Customer.	Error
22043	Missing or Invalid <i>role</i>	<i>role</i> must be present and populated with one of the allowable values for each record within the <i>fdidCustomerList</i> object.	Error
22044	Missing or Invalid <i>roleStartDate</i>	<i>roleStartDate</i> must be present and populated for each record within the <i>fdidCustomerList</i> object.	Error
22045	Missing or Invalid <i>roleEndDate</i>	When populated, <i>roleEndDate</i> must be in the correct format. Must be populated if <i>roleEndReason</i> is populated.	Error
22046	<i>roleEndDate</i> set prior to <i>roleStartDate</i>	When populated, <i>roleEndDate</i> must be equal to or later than <i>roleStartDate</i> .	Error
22047	Missing or Invalid <i>roleEndReason</i>	When populated, <i>roleEndReason</i> must be populated with one of the allowable values. Must be populated if <i>roleEndDate</i> is populated.	Error
22048	Associated Customer Record rejected	The FDID Record is rejected because an associated Customer Record was rejected.	Error
22049	Missing or Invalid <i>accountType</i>	<i>accountType</i> must be present and populated with one (or more, if applicable) of the allowable values for each FDID Record within the file.	Error
22052	Invalid <i>branchOfficeCRD</i>	When populated, <i>branchOfficeCRD</i> must be a valid	Error

Error Code	Error Code Description	Explanation	Warning/ Error
		value.	
22054	Missing or Invalid <i>priorCATReporterCRD</i>	<i>priorCATReporterCRD</i> must be present and populated when <i>priorCATReporterFDID</i> is populated. When populated, <i>priorCATReporterCRD</i> must be a valid CAT Reporter CRD value.	Error
22058	Missing or Invalid <i>priorCATReporterFDID</i>	<i>priorCATReporterFDID</i> must be present and populated when <i>priorCATReporterCRD</i> is populated. When populated, <i>priorCATReporterFDID</i> must be a valid <i>firmDesignatedID</i> value.	Error
22061	Missing or invalid <i>hasDiscretion</i>	Must be present and populated if <i>role</i> is set to 'AUTHREP' or 'AUTH3RD'. Must be omitted or 'false' if <i>role</i> is 'NTHOLDER' or 'TRDHOLDER'.	Error
22064	Invalid <i>clearingBrokerID</i>	When populated, <i>clearingBrokerID</i> must be properly formatted.	Error
22065	Invalid <i>registeredRepCRD</i>	When populated, <i>registeredRepCRD</i> must be properly formatted.	Error
22067	<i>roleEndDate</i> set later than <i>fdidEndDate</i>	The <i>roleEndDate</i> for all CAT Customers associated to a given FDID must not be set later than the <i>fdidEndDate</i> for that FDID.	Error
22068	No active CAT Customer associations	Each FDID must have at least one CAT Customer association with no <i>roleEndDate</i> set earlier than the <i>fdidEndDate</i> .	Error
22069	Improper combination of <i>accountType</i> and <i>fdidType</i> values	The <i>accountType</i> values of 'ENTITYID' and 'RELATIONSHIP' are only to be used when the <i>fdidType</i> is of the same value.	Error
22071	No CAT Customer association with trading capabilities	Each FDID must have at least one active CAT Customer association with a <i>role</i> of 'TRDHOLDER', or a <i>role</i> of 'AUTHREP' or 'AUTH3RD' where <i>hasDiscretion</i> is 'true'.	Error
22075	Missing or Invalid <i>DVPCustodianID</i>	<i>DVPCustodianID</i> must be populated for every FDID Record where <i>accountType</i> includes the value 'DVP/RVP'.	Error
22078	Duplicate <i>role</i> for CAT Customer within the <i>fdidCustomerList</i>	A CAT Customer present in the <i>fdidCustomerList</i> must not have duplicate <i>role</i> values.	Error
22501	Missing or Invalid <i>customerRecordID</i>	<i>customerRecordID</i> must be present and populated for each Customer Record within the <i>naturalPersonCustomerList</i> and <i>legalEntityCustomerList</i> . Affected record will not be processed for further validation checks.	Error
22502	Duplicated <i>customerRecordID</i>	Each <i>customerRecordID</i> must be present in the <i>naturalPersonCustomerList</i> or the <i>legalEntityCustomerList</i> only once. Affected records will not be processed for further validation checks.	Error
22522	Data type violation – Customer Record	Customer Record contains one or more field values that violate the data type for the field.	Error
22523	Customer Record rejected because an	The Customer Record is rejected because an FDID Record in the file with association to the Customer	Error

Error Code	Error Code Description	Explanation	Warning/Error
	associated FDID Record was rejected	Record has been rejected, or because the Customer Record was not associated to an FDID Record in the submission file.	
22524	Missing or Invalid <i>customerType</i>	<i>customerType</i> must be present and populated with one (or more, if applicable) of the allowable values for each Customer Record within the file.	Error
22526	<i>customerRecordID</i> not present in paired Transformed Identifiers File	Each <i>customerRecordID</i> present in the Reference Data File must have a corresponding entry in the paired Transformed Identifiers File. The <i>customerRecordID</i> in both the Transformed Identifiers File and the Reference Data File must be valid and properly formatted.	Error
22529	Customer Record rejected because another version of the CAT Customer was rejected	The Customer Record is rejected because another record for the same CAT Customer, as reconciled to a single <i>tidValue</i> , was rejected within the file.	Error
22533	Multiple instances of CAT Customer with differing data	Multiple records for a single CAT Customer (as reconciled to a single <i>tidValue</i>) within the Reference Data File must have the same Customer Record Type (Natural Person or Legal Entity) values.	Error
22534	Natural Person CAT Customer reported with improper <i>foreignTIDType</i>	Natural Person Customer Records must not be reported with a <i>foreignTIDType</i> of 'LEI'. In order to repair this error code, the CAT Customer must be resubmitted in the <i>legalEntityCustomerList</i> with a <i>foreignTIDType</i> of 'LEI' and the same <i>tidValue</i> . This rejection is not repairable if the Industry Member erroneously reported the Natural Person CAT Customer with a <i>foreignTIDType</i> of 'LEI' when it should have reported the Natural Person CAT Customer with one of the <i>foreignTIDTypes</i> allowable for a foreign Natural Person CAT Customer. While repair credit will not be given, if the CAT Customer is required to be reported to the Reference Database, the Industry Member must resubmit the FDID Record (including all required CAT Customer associations) with corrected CAT Customer information. Otherwise, this rejection may be deleted with a <i>correctionAction</i> of 'DELETE'.	Error
22535	Legal Entity CAT Customer reported with improper <i>foreignTIDType</i>	Legal Entity Customer Records must not be reported with a <i>foreignTIDType</i> of 'DRIVERLICENSE', 'PASSPORT' or 'PERMANENT'. In order to repair this error code, the CAT Customer must be resubmitted in the <i>naturalPersonCustomerList</i> with a <i>foreignTIDType</i> of 'DRIVERLICENSE', 'PASSPORT' or 'PERMANENT' (as applicable) and the same <i>tidValue</i> . This rejection is not repairable if the Industry Member erroneously reported the Legal Entity CAT Customer with a <i>foreignTIDType</i> of 'DRIVERLICENSE', 'PASSPORT' or 'PERMANENT' when it should have reported the Legal Entity CAT Customer with one of the <i>foreignTIDTypes</i> allowable for a foreign Legal Entity. While repair credit will not be given, if the CAT Customer is required to be reported to the Reference	Error

Error Code	Error Code Description	Explanation	Warning/Error
		Database, the Industry Member must resubmit the FDID Record (including all required CAT Customer associations) with corrected CAT Customer information. Otherwise, this rejection may be deleted with a <i>correctionAction</i> of 'DELETE'.	
22541	Legal Entity CAT Customer reported with improper <i>tidType</i>	Legal Entity Customer Records must not be reported with a <i>tidType</i> of 'SSN/ITIN'. In order to repair this error code, the CAT Customer must be resubmitted in the <i>naturalPersonCustomerList</i> with a <i>tidType</i> of 'SSN/ITIN' and the same <i>tidValue</i> . This rejection is not repairable if the Industry Member erroneously reported the Legal Entity CAT Customer with a <i>tidType</i> of 'SSN/ITIN' when it should have reported the Legal Entity CAT Customer with a <i>tidType</i> of 'EIN'. While repair credit will not be given, if the CAT Customer is required to be reported to the Reference Database, the Industry Member must resubmit the FDID Record (including all required CAT Customer associations) with corrected CAT Customer information. Otherwise, this rejection may be deleted with a <i>correctionAction</i> of 'DELETE'.	Error
22542	Natural Person CAT Customer reported with improper <i>tidType</i>	Natural Person Customer Records must not be reported with a <i>tidType</i> of 'EIN'. In order to repair this error code, the CAT Customer must be resubmitted in the <i>legalEntityCustomerList</i> with a <i>tidType</i> of 'EIN' and the same <i>tidValue</i> . This rejection is not repairable if the Industry Member erroneously reported the Natural Person CAT Customer with a <i>tidType</i> of 'EIN' when it should have reported the Natural Person CAT Customer with a <i>tidType</i> of 'SSN/ITIN'. While repair credit will not be given, if the CAT Customer is required to be reported to the Reference Database, the Industry Member must resubmit the FDID Record (including all required CAT Customer associations) with corrected CAT Customer information. Otherwise, this rejection may be deleted with a <i>correctionAction</i> of 'DELETE'.	Error
22546	Unknown attribute on Customer Record	The Customer Record contains an attribute that is not known under the reported schema <i>version</i> .	Error
22900	Malformed TID Record – Customer Record not processed	The entry for this CAT Customer in the Transformed Identifiers File was malformed and could not be processed. See Section 6.5.2.1 for details on repairing the record or deleting the rejection.	Error
22914	Paired TID Record failed validation– CAT Customer Record not processed	The paired entry for this CAT Customer in the Transformed Identifiers File failed validation and was not processed. See the associated Warning Code in the Transformed Identifiers Feedback File.	Error
23999	Unhandled Exception	An unknown error occurred during processing.	Error

B.3 Data Layer Validation Error Codes

The table below contains error messages that are associated when validating data contained in a submission record against data previously accepted into the Reference Database for the same submission record. Error codes are associated with specific fields within a submission record.

Table 22: Data Layer Validation Errors

Error Code	Error Code Description	Explanation	Warning/Error
23004	<i>replacedByFDID</i> set to an unknown value	When populated, the <i>replacedByFDID</i> must reference a <i>firmDesignatedID</i> that is accepted without error in the current submission, or a <i>firmDesignatedID</i> that was previously accepted by the Reference Database.	Error
23005	<i>fdidEndDate</i> set prior to <i>fdidDate</i> of replacing record	When <i>fdidEndReason</i> is set as 'REPLACED', the <i>fdidEndDate</i> must not be set prior to the <i>fdidDate</i> of the FDID set as the <i>replacedByFDID</i> .	Error

B.4 Warning Error Codes

The table below contains Warning messages that are associated with Data Validation and included in the feedback file. Warning codes are associated with specific fields within a submission record. Warnings are not required to be repaired.

Table 23: Reference Data File Validation Warnings

Error Code	Error Code Description	Explanation	Warning/Error
24001	Missing or Invalid <i>rejectionID</i>	When populated, the <i>rejectionID</i> must be a known <i>rejectionID</i> for the <i>catReporterCRD</i> whose data is included in the Reference Data File.	Warning
24002	Missing or Invalid <i>correctionAction</i>	When populated, <i>correctionAction</i> must be populated with one of the allowable values. Must be populated if <i>rejectionID</i> is populated.	Warning
24003	Missing or Invalid <i>correctingFirmDesignatedID</i>	When populated, <i>correctingFirmDesignatedID</i> must reference a <i>firmDesignatedID</i> that is included in the current Reference Data File or was accepted by the Reference Database in a prior submission.	Warning
24005	Improper correction attempt	The <i>rejectionID</i> included in the <i>correctionList</i> is for an improper error code.	Warning
24006	Unknown Field Name	The <i>correctionList</i> contains a field that is not known under the reported schema <i>version</i> .	Warning
24007	Missing or Invalid <i>correctingCustomerRecordID</i>	When populated, <i>correctingCustomerRecordID</i> must reference a <i>customerRecordID</i> that is included in the current Reference Data File.	Warning

Error Code	Error Code Description	Explanation	Warning/Error
24008	Data type violation - <i>correctionList</i>	<i>correctionList</i> contains one or more field values that violate the data type for the field.	Warning
24009	<i>rejectionID</i> was Previously Repaired	An attempt was made to repair a <i>rejectionID</i> that has already been repaired.	Warning

Table 24: Transformed Identifiers File Validation Warnings

Error Code	Error Code Description	Explanation	Warning/Error	Corresponding Data Validation Error Code
24901	Malformed TID Record - Missing or invalid <i>customerRecordID</i>	<i>customerRecordID</i> must be present and populated for each TID Record within the file.	Warning	22526
24902	Malformed TID Record - Missing or invalid <i>tidType</i>	<i>tidType</i> must be present and populated for each TID Record within the file.	Warning	22900
24903	Malformed TID Record - Missing or invalid <i>foreignTIDType</i>	<i>foreignTIDType</i> must be present and populated for each record in the file where <i>tidType</i> is 'FOREIGN'. <i>foreignTIDType</i> must not be populated for any record in the file where <i>tidType</i> is not set as 'FOREIGN'.	Warning	22900
24904	Malformed TID Record - Missing or invalid <i>foreignTIDCountryCd</i>	<i>foreignTIDCountryCd</i> must be present and populated with a valid value for each record in the file where <i>tidType</i> is 'FOREIGN' and <i>foreignTIDType</i> is not 'LEI'. <i>foreignTIDCountryCd</i> must not be populated for any record in the file where <i>tidType</i> is not set as 'FOREIGN', or where <i>tidType</i> is set as 'FOREIGN' and <i>foreignTIDType</i> is set as 'LEI'. <i>foreignTIDCountryCd</i> must not be 'US' when <i>tidType</i> is 'FOREIGN'.	Warning	22900
24905	Malformed TID Record - Missing or invalid <i>tidValue</i>	<i>tidValue</i> must be present and populated for each record in the file and must be a 64-byte hexadecimal value.	Warning	22900
24906	Malformed TID Record - Invalid Input Identifier used to generate <i>tidValue</i> for <i>tidType</i> of SSN/ITIN	When <i>tidType</i> is 'SSN/ITIN', the original Input Identifier used to generate the <i>tidValue</i> must be properly formatted and adhere to the valid range of the SSN/ITIN identifier type.	Warning	22900
24907	Malformed TID Record - Invalid Input Identifier used to generate <i>tidValue</i> for <i>tidType</i> of EIN	When <i>tidType</i> is 'EIN', the original Input Identifier used to generate the <i>tidValue</i> must be properly formatted and adhere to the valid range of the EIN identifier type.	Warning	22900
24908	Missing or invalid <i>replacedByTIDType</i>	When populated, <i>replacedByTIDType</i> must be populated with a valid value. <i>replacedByTIDType</i> must be present and populated when <i>replacedByTID</i> is	Warning	22914

Error Code	Error Code Description	Explanation	Warning/Error	Corresponding Data Validation Error Code
		populated.		
24909	Missing or invalid <i>replacingForeignTIDType</i>	<i>replacingForeignTIDType</i> must be present and populated for each record in the file where <i>replacedByTIDType</i> is 'FOREIGN'. <i>replacingForeignTIDType</i> must not be populated for any record in the file where <i>replacedByTIDType</i> is not set as 'FOREIGN'.	Warning	22914
24910	Missing or invalid <i>replacingForeignTIDCountryCd</i>	<i>replacingForeignTIDCountryCd</i> must be present and populated with a valid value for each record in the file where <i>replacedByTIDType</i> is 'FOREIGN' and <i>replacingForeignTIDType</i> is not 'LEI'. <i>replacingForeignTIDCountryCd</i> must not be populated for any record in the file where <i>replacedByTIDType</i> is not set as 'FOREIGN', or where <i>tidType</i> is set as 'FOREIGN' and <i>replacingForeignTIDType</i> is set as 'LEI'. <i>replacingForeignTIDCountryCd</i> must not be 'US' when <i>tidType</i> is 'FOREIGN'.	Warning	22914
24911	Missing or invalid <i>replacedByTID</i>	When populated, <i>replacedByTID</i> must be a 64-byte hexadecimal value. Must be present when <i>replacedByTIDType</i> is populated. Each <i>replacedByTID</i> must have a corresponding valid entry in the Transformed Identifiers File.	Warning	22914
24912	Invalid Input Identifier used to generate <i>replacedByTID</i> for <i>replacedByTIDType</i> of SSN/ITIN	When <i>replacedByTIDType</i> is 'SSN/ITIN', the original Input Identifier used to generate the <i>replacedByTID</i> must be properly formatted and adhere to the valid range of the 'SSN/ITIN' identifier type.	Warning	22914
24913	Invalid Input Identifier used to generate <i>replacedByTID</i> for <i>replacedByTIDType</i> of EIN	When <i>replacedByTIDType</i> is 'EIN', the original Input Identifier used to generate the <i>replacedByTID</i> must be properly formatted and adhere to the valid range of the 'EIN' identifier type.	Warning	22914
24914	Malformed TID Record - <i>customerRecordID</i> not present in paired Reference Data File	Each <i>customerRecordID</i> present in the Transformed Identifiers File must have a corresponding valid entry in the paired Reference Data File.	Warning	22914
24915	Malformed TID Record - Duplicated <i>customerRecordID</i>	Each <i>customerRecordID</i> must be present in the Transformed Identifiers File only once. Affected records will not be processed for further validation checks.	Warning	22526 (if duplicated only in the Transformed Identifiers File) 22502 (if duplicated in both the Reference Data and

Error Code	Error Code Description	Explanation	Warning/Error	Corresponding Data Validation Error Code
				Transformed Identifiers Files)
24916	Data type violation - TID	TID Record contains one or more field values that violate the data type for the field.	Warning	22526, 22900, or 22914
24917	Unknown Field Name	The Transformed Identifiers File contains a record level attribute that is not known under the reported schema version.	Warning	22914

Appendix C: Glossary

Term	Definition
Account	For the purpose of the Reference Database Technical Specifications, the term Account is synonymous with Firm Designated ID (FDID). An Account may represent an account, Relationship ID, or Entity ID.
Account Opening Date	Account Opening Date is defined in the CAT NMS Plan. For Account reference data submissions, Account Opening Date is to be reported as <i>fdidDate</i> within the Reference Data File.
Authorized Trader	The CAT NMS Plan defines an Authorized Trader as “any person from whom the broker-dealer is authorized to accept trading instructions for such account, if different from the account holder(s)”.
CAT Customer	SEC Rule 613(j)(3) defines a CAT Customer 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)”.
CAT Reporter CRD	The Central Registration Depository identifier that an Industry Member uses to report Account and Customer reference data.
CAT Submitter ID	The CAT-assigned identifier of the firm that submits data to CAT (for example, a CAT Reporting Agent).
CAT Trading Day	<p>CAT Trading Day for Industry Members is defined as beginning immediately after 4:15:00 PM and no fractions of a second Eastern Time on one trade date and ending at exactly 4:15:00 PM and no fractions of a second Eastern Time on the next trading date.</p> <p>Weekends or any day that all equities or options national securities exchanges are closed are not considered a CAT Trading Day.</p> <p>Trading Days that close early end 15 minutes after the Market Close.</p>
CCID	<p>The Customer ID, also known as CAT Customer ID, is a unique identifier generated by the Plan Processor, that is defined within SEC Rule 613(j)(5) as “with respect to a customer, a code that uniquely and consistently identifies such customer for purposes of providing data to the central repository.” The CCID is a globally unique identifier generated for each unique TID value generated from a well-formatted and valid Input Identifier, in a way that is not reversible to the TID or textual Input Identifier value. The translation of TID to CCID is completed in the CCID Subsystem, in isolation from any of the Customer or Account reference data.</p> <p>The CCID value is never provided to Industry Members or CAT Reporting Agents and is only used within CAT to uniquely reference a single CAT Customer.</p>
Discretion	If <i>hasDiscretion</i> is populated with 'true', this indicates the Authorized Trader has the ability to place orders on the Account without prior approval of the account holder(s). For Reference Database reporting purposes, <i>hasDiscretion</i> value of 'true' does not indicate that an order was received with a “Not Held” instruction where the broker-dealer or trader only has discretion as to the price and time of execution.
FDID	FDID is defined in Section 1.1 of the CAT NMS Plan as “(1) a unique and persistent identifier for each trading account designated by Industry Members for purposes of providing data to the Central Repository provided, however, such identifier may not be the account number for such trading account if the trading account is not a proprietary account; (2) a unique and persistent relationship identifier when an Industry Member does not have an account number available to its order handling and/or execution system at the time of order receipt, provided, however, such identifier must be masked; or (3) a unique and persistent entity identifier when an employee of an Industry Member is exercising discretion over multiple client accounts and creates an aggregated order for which a trading

	account number of the Industry Member is not available at the time of order origination.”
Input Identifier	A generic term for the types of identifiers used to identify unique Customer Records, including SSN, ITIN, EIN, and FOREIGN. Input Identifiers are always translated to Transformed Identifier values prior to submission to CAT within the Transformed Identifiers File.
Legal Entity	For purposes of CAT reporting, a Legal Entity is a CAT Customer whose Input Identifier used to generate the CAT Customer’s TID is an EIN, or, for a Foreign Legal Entity, a National Registration or Tax Identifier, LEI or other Government-Issued Identifier issued by a non-national level government body or agency, such as a regional agency.
Natural Person	For purposes of CAT reporting, a Natural Person is a CAT Customer whose Input Identifier used to generate the CAT Customer’s TID is an SSN, ITIN; and for Foreign Natural Persons, a National Registration or Tax Identifier, Country of Domicile and Passport Number, Driver’s License, or Permanent Resident Identifier.
Sensitive Identifier	Input Identifiers, including Social Security Number, Individual Taxpayer Identification Number, EIN and Foreign Identifiers which <u>must not be submitted to the Reference Database in plaintext</u> and must be hashed into a Transformed Identifier using an SHA-256 hashing algorithm prior to submission to Reference Database.
TID	The Transformed Identifier (TID) is a hashed version of the Input Identifier, submitted by the Industry Member to CAT in place of the Input Identifier. The Industry Member has the responsibility to translate Input Identifiers to TID values prior to submission, in accordance with the mathematical logic provided in <u>Section 3.4 – Translation of Input Identifiers to TID Values</u> . Input Identifiers used to generate TID values must be input in valid format – that is, 999-99-9999 for SSN or ITIN, and 99-9999999 for EIN.
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.

Appendix D: Data Dictionary

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
<i>accountType</i>	Array [Choice]	FDID Record	R	Exactly One per FDID Record	<p>Representation of the type or types of Account the FDID represents. All applicable values for the FDID must be included in the array. All values included in the array must be separated by commas.</p> <p>Values: AVERAGE – Industry Member-owned average price account. DVP/RVP – Delivery versus Payment account/Receipt versus Payment account. EDUCATION – Established for education savings including 529 Plan or Coverdale ESA. ENTITYID – Entity ID type record. Only allowable when the FDID represents the Entity ID of the firm when an employee of the firm is exercising discretion over multiple CAT Customer Accounts. ERROR – Error account. FIRM – Is owned by the reporting Industry Member firm, including proprietary trading accounts and inventory accounts. INSTITUTION – An institutional account as defined in FINRA Rule 4512(c). MARKET – Market Making Account from which the Industry Member originates orders or to which it allocates shares/contracts in a security/securities for which the Industry Member is registered as a market maker, designated market</p>	"AVERAGE" "DVP/RVP" "EDUCATION" "ENTITYID" "ERROR" "FIRM" "INSTITUTION" "MARKET" "MARGIN" "OPTION" "OTHER" "RELATIONSHIP" "RETIREMENT" "UGMA/UTMA"

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					<p>maker, lead market maker or similar capacity on a national securities exchange or from which the Industry Member originates orders that clear in the OCC clearing range of 'M'. If the Industry Member reports New Order events with an <i>accountHolderType</i> of 'O', the <i>accountType</i> value of 'MARKET' must be included on the related FDID Record submitted to the Reference Database. See FAQ C5 for more information.</p> <p>MARGIN – Approved for trading on margin.</p> <p>OPTION – Approved for trading options.</p> <p>OTHER – Account which does not meet the criteria for any other listed value.</p> <p>RELATIONSHIP – Relationship type record.</p> <p>RETIREMENT – As defined by the IRS:</p> <ul style="list-style-type: none"> • Individual Retirement Arrangements (IRAs) • Roth IRAs • 401(k) Plans • 403(b) Plans • SIMPLE IRA Plans (Savings Incentive Match Plans for Employees) • SEP Plans (Simplified Employee Pension) • SARSEP Plans (Salary Reduction Simplified Employee Pension) • Payroll Deduction IRAs • Profit-Sharing Plans • Defined Benefit Plans • Money Purchase Plans • Employee Stock Ownership Plans (ESOPs) • Governmental Plans • 457 Plans <p>UGMA/UTMA –</p>	

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					Established as a custodial account under the Uniform Gift to Minors Act or Uniform Transfer to Minors Act.	
<i>branchOfficeCRD</i>	Unsigned	FDID Record	C	Zero or One per FDID Record	The CRD for the branch office to which the FDID Record is assigned, if applicable. Required if a Customer Account is assigned to a branch office other than the main office.	
<i>catReporterCRD</i>	Unsigned	Main	R	Exactly One per submission file	The CRD number assigned to the Industry Member to which the data within the file belongs.	
<i>catSubmitterID</i>	Unsigned	Main	R	Exactly One per submission file	The ID of the firm submitting the file to CAT. Required even when the Industry Member is submitting data for itself.	
<i>clearingBrokerID</i>	Array [Alphanumeric (4)]	FDID Record	C	Zero or One per FDID Record	The NSCC Clearing ID of the Industry Member that clears the Accounts. Must be populated if known to the Industry Member. All values included in the array must be separated by commas. Each value must be exactly four characters, including leading zeros. If the Industry Member is a self-clearing firm, it must report its own NSCC Clearing ID.	
<i>correctingFirmDesignatedID</i>	Text (40)	Correction Action Record	C	Zero or One per Correction Record	The <i>firmDesignatedID</i> that is repairing a previously rejected <i>firmDesignatedID</i> . The <i>correctingFirmDesignatedID</i> value must reference a corresponding <i>firmDesignatedID</i> value that is either included in the current submission file or was accepted by the Reference Database in a prior submission. Required if the <i>correctionAction</i> is 'CORRECTION' and the prior error being corrected was against a	

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					<i>firmDesignatedID.</i>	
<i>correctingCustomerRecordID</i>	Unsigned	Correction Action Record	C	Zero or One per Correction Record	A reference to the <i>customerRecordID</i> value in the submission file that is repairing a previously rejected Customer Record. The <i>correctingCustomerRecordID</i> value must reference a <i>customerRecordID</i> that is included in the current submission file. Required if the <i>correctionAction</i> is 'CORRECTION' and the prior error being corrected was against a Customer Record.	
<i>correctionAction</i>	Choice	Correction Action Record	R	Exactly One per Correction Record	The action being taken to repair for the prior rejection. Values: CORRECTION – The prior rejection is being repaired by including a <i>correctingFirmDesignatedID</i> or a <i>correctingCustomerRecordID</i> . DELETE – The prior rejection is being cleared without submitting a <i>correctingFirmDesignatedID</i> or a <i>correctingCustomerRecordID</i> .	"CORRECTION" "DELETE"
<i>correctionList</i>	Multi-Dimensional Array	Main	C	Zero or One per Submission File	Structure for the array of Correction Action Records within the file. Required if the submission file contains one or more Correction Action Records.	
<i>correspondentCRD</i>	Unsigned	Main	C	Zero or One per submission file	The CRD number of the related introducing broker or correspondent firm whose customer and account data is kept on record at the Industry Member reporting to CAT. Required to be populated by clearing firms with introducing brokers or correspondents when reporting Accounts to the Reference Database	

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					that are custodied for their introducing brokers/correspondents, including DVP/RVP accounts. All FDID and CAT Customer reference data reported in the file will be associated to the <i>catReporterCRD</i> and <i>correspondentCRD</i> pairing.	
<i>customerRecordID</i>	Unsigned	FDID Customer Record	R	Exactly One per FDID Customer Record	A unique reference to a single CAT Customer for a single submission file. The value in this field must also be a value present in the <i>naturalPersonCustomerList</i> or the <i>legalEntityCustomerList</i> ; and present in the Transformed Identifiers File.	
<i>customerRecordID</i>	Unsigned	Legal Entity Customer Record	R	Exactly One per Legal Entity Customer Record	A unique reference to a single CAT Customer for a single submission file. The value in this field must also be a value present in the <i>fdidCustomerList</i> and present in the Transformed Identifiers File.	
<i>customerRecordID</i>	Unsigned	Natural Person Customer Record	R	Exactly One per Natural Person Customer Record	A unique reference to a single CAT Customer for a single submission file. The value in this field must also be a value present in the <i>fdidCustomerList</i> and present in the Transformed Identifiers File.	
<i>customerRecordID</i>	Unsigned	TID Record	R	Exactly One per TID Record	A unique reference to a single Customer Record in the Reference Data File. The value in this field must also be a value present in the <i>customerRecordIDs</i> in the Reference Data File.	
<i>customerType</i>	Array [Choice]	Natural Person Customer Record	R	Exactly One per Natural Person Customer Record	Representation of the characteristics of the CAT Customer. All applicable values for the CAT Customer must be included in the array. All values	“ACCREDITED” “ADVISER” “CP” “EMPLOYEE” “FOREIGN”

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					<p>included in the array must be separated by commas.</p> <p>Values:</p> <p>ACCREDITED – CAT Customer was identified as an accredited investor by the Industry Member as set forth in Rule 501(a) of the Securities Act of 1933, if maintained in the Industry Member’s general customer and account records.</p> <p>ADVISER – CAT Customer was identified as “a person associated with an investment adviser” as defined in Section 202(a)(17) of the Investment Advisers Act of 1940, if maintained in the Industry Member’s general customer and account records.</p> <p>CP – CAT Customer identified itself as an officer, director, or 10% or more share owner of a public company at the time of account opening.</p> <p>EMPLOYEE – CAT Customer is an employee or associated person of the Industry Member, as defined in Section 3(a)(18) of the Securities Exchange Act of 1934. If employee attribute is maintained by the Industry Member at the group level, this value may also include CAT Customers employed by affiliated group companies.</p> <p>FOREIGN – CAT Customer is a Natural Person that does not have a U.S. Tax Identifier.</p> <p>NOTAPPLICABLE – None of the defined terms are applicable to the CAT Customer.</p> <p>OTHBKR – CAT Customer is associated with a U.S. registered</p>	<p>“NOTAPPLICABLE”</p> <p>“OTHBKR”</p> <p>“TRUST”</p>

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					broker-dealer other than the Industry Member. TRUST – CAT Customer is a trust.	
<i>customerType</i>	Array [Choice]	Legal Entity Customer	R	Exactly One per Legal Entity Customer Record	<p>Representation of the characteristics of the CAT Customer. All applicable values for the CAT Customer must be included in the array. All values included in the array must be separated by commas.</p> <p>Values: ACCREDITED – CAT Customer was identified as an accredited investor by the Industry Member as set forth in Rule 501(a) of the Securities Act of 1933, if maintained in the Industry Member’s general customer and account records. ADVISER – CAT Customer was identified as a U.S. registered “Investment Adviser” as defined in Section 202(a)(11) of the Investment Advisers Act of 1940, if maintained in the Industry Member’s general customer and account records. BD – CAT Customer is a U.S. registered broker-dealer, if maintained in the Industry Member’s general customer and account records. FOREIGN – CAT Customer is a Legal Entity that does not have a U.S. Tax Identifier. NOTAPPLICABLE – None of the defined terms are applicable to the CAT Customer. RIC – CAT Customer is a Registered Investment Company, as defined in the Investment Company Act of 1940 (15 U.S.C. § 80a–</p>	“ACCREDITED” “ADVISER” “BD” “FOREIGN” “NOTAPPLICABLE” “RIC” “TRUST”

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					3(a)(1)), if maintained in the Industry Member's general customer and account records. TRUST – CAT Customer is a trust.	
<i>DVPCustodianID</i>	Array [Alphanumeric (5)]	FDID Record	C	Zero or One per FDID Record	Required when <i>accountType</i> includes 'DVP/RVP'. All values included in the array must be separated by commas. Each value must be five characters or fewer, including leading zeros. If the custodian is a U.S. broker-dealer, this field must be populated with the clearing number of the custodian. If the custodian is a bank and is not a registered broker-dealer, this field must be populated with the DTC number of the bank. See FAQ X4 for acceptable uses of the value 'DTCRM'. If there is no clearing number or DTC number because the custodian is foreign, this field must be populated with a value of 'FOR'.	
<i>fdidCustomerList</i>	Multi-Dimensional Array	FDID Record	C	Exactly One per FDID Record	Structure for the array of Customer Records that are associated to the FDID Record within the file. Required when the FDID Record is being reported to the Reference Database for the first time. Also required when there is no <i>fdidEndReason</i> . Not required when ending an FDID Record that was previously accepted with one or more CAT Customers.	
<i>fdidDate</i>	Date (Number) (8)	FDID Record	R	Exactly One per FDID Record	Date on which the FDID opened, as defined in Section 2.2.2 of this specification, in YYYYMMDD format.	YYYYMMDD
<i>fdidEndDate</i>	Date (Number)	FDID Record	C	Zero or One per FDID	Date on which the FDID was closed or ended, in	YYYYMMDD

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
	(8)			Record	YYYYMMDD format. Must be provided if the <i>fdidEndReason</i> field is populated.	
<i>fdidEndReason</i>	Choice	FDID Record	C	Zero or One per FDID Record	Reason why the FDID was closed or ended. Must be provided if the <i>fdidEndDate</i> field is populated. Values: CORRECTION – FDID was not required to be reported to the Reference Database. ENDED – FDID was ended (e.g., account was closed). REPLACED – FDID replaced by another FDID within the Industry Member. See FAQ M1 regarding FDID replacements. OTHER – Other unlisted reason for ending the FDID. TRANSFER - FDID was transferred to another Industry Member as part of a mass transfer as described in Section 3.3 .	“CORRECTION” “ENDED” “REPLACED” “OTHER” “TRANSFER”
<i>fdidRecordCount</i>	Unsigned	Main	R	Exactly One per submission file	The count of <i>firmDesignatedID</i> field occurrences within the file. Used to validate the count of FDID Records intended to be submitted within the file matches the count of records present in the file.	
<i>fdidRecordID</i>	Unsigned	FDID Record	R	Exactly One per FDID Record	A unique reference to a single FDID Record for a single submission file.	
<i>fdidRecordList</i>	Multi-Dimensional Array	Main	C	Zero or One per submission file	Structure for the array of FDID Records that are included in the file. Required if the submission file contains one or more FDID Records; not required if no FDID Records are included in the file.	
<i>fdidType</i>	Choice	FDID Record	R	Exactly One per FDID Record	Representation of the type of record of the reported FDID.	“ACCOUNT” “RELATIONSHIP”

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					<p>Values:</p> <p>ACCOUNT – Account type record.</p> <p>RELATIONSHIP – Relationship type record.</p> <p>ENTITYID – Entity ID type record. Only allowable when the FDID represents the Entity ID of the firm when an employee of the firm is exercising discretion over multiple Customer Accounts.</p>	“ENTITYID”
<i>firmDesignatedID</i>	Text (40)	FDID Record	R	Exactly One per FDID Record	The Firm Designated ID of the ‘ACCOUNT’, ‘ENTITYID’, or ‘RELATIONSHIP’ being reported by the Industry Member.	
<i>foreignTIDCountryCd</i>	Choice	TID Record	C	Zero or One per TID Record	Code of the country that issued the Input Identifier used to generate the ‘FOREIGN’ <i>tidType</i> , in ISO 3166-1 alpha-2 format. Please view Appendix E for acceptable values. Required if the <i>tidType</i> is ‘FOREIGN’ and the <i>foreignTIDType</i> is not ‘LEI’.	AA
<i>foreignTIDType</i>	Choice	TID Record	C	Zero or One per TID Record	<p>The specific type of foreign Input Identifier used to generate a ‘FOREIGN’ <i>tidType</i>. Required to be populated if the <i>tidType</i> is ‘FOREIGN’. The following hierarchy must be followed if more than one identifier type is available for a foreign CAT Customer:</p> <p>Values:</p> <p>1. NATIONALID – National registration or tax identifier, if the Industry Member knows the identifier was issued by a national-level government body or agency, or when the Industry Member cannot distinguish if the issuer is a national-level government body or</p>	“DRIVERLICENS E” “LEI” “NATIONALID” “OTHGOVT” “PASSPORT” “PERMANENT”

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					<p>agency.</p> <p>2. LEI – Legal Entity Identifier.</p> <p>3. PASSPORT – Country of issuance and passport number.</p> <p>4. PERMANENT – Permanent resident identifier.</p> <p>5. DRIVERLICENSE – Driver’s license identifier.</p> <p>6. OTHGOVT – Other government-issued identifier, if the Industry Member knows the identifier was issued by a non-national level government body or agency, such as a regional agency. Must not be used if one of the other allowable values apply.</p>	
<i>hasDiscretion</i>	Boolean	FDID Customer Record	C	Zero or One per FDID Customer Record	Indicates if the Authorized Trader has the ability to place orders on the Account without prior approval of the Holder(s). Must be present and populated if <i>role</i> is ‘AUTH3RD’ or ‘AUTHREP’. Must be omitted or ‘false’ if <i>role</i> is ‘NTHOLDER’ or ‘TRDHOLDER’.	True false
<i>legalEntityCustomerList</i>	Multi-Dimensional Array	Main	C	Zero or One per submission file	Structure for the array of Legal Entity type Customer Records that are included in the file. Required if the submission file contains one or more Legal Entity Customer Records; not required if no Legal Entity Customer Records are included in the file.	
<i>legalEntityCustomerRecordCount</i>	Unsigned	Main	R	Exactly One per submission file	The count of <i>customerRecordID</i> field occurrences within the file for Legal Entity type CAT Customers. Used to validate the count of Legal Entity Customer Records intended to be submitted within the file matches the count of records present in the	

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					file.	
<i>naturalPersonCustomerList</i>	Multi-Dimensional Array	Main	C	Zero or One per submission file	Structure for the array of Natural Person type Customer Records that are included in the file. Required if the submission file contains one or more Natural Person Customer Records. Not required if no Natural Person Customer Records are included in the file.	
<i>naturalPersonCustomerRecordCount</i>	Unsigned	Main	R	Exactly One per submission file	The count of <i>customerRecordID</i> field occurrences within the file for Natural Person type CAT Customers. Used to validate the count of Natural Person Customer Records intended to be submitted within the file matches the count of records present in the file.	
<i>priorCATReporterCRD</i>	Unsigned	FDID Record	C	Zero or One per FDID Record	CRD of the Industry Member from which the Account was acquired as part of a mass transfer as described in Section 3.3. Must be provided if the Account was acquired by the Industry Member. Must be provided if <i>priorCATReporterFDID</i> is populated.	
<i>priorCATReporterFDID</i>	Text (40)	FDID Record	C	Zero or One per FDID Record	The original <i>firmDesignatedID</i> for the record acquired as part of a mass transfer as described in Section 3.3. Must be provided by the acquiring Industry Member if the Account was acquired by the as part of a mass transfer.	
<i>registeredRepCRD</i>	Array [Unsigned]	FDID Record	O	Zero or One per FDID Record	The CRD number assigned to the Registered Representative(s) responsible for the FDID Record (as identified as such per SEC Rule 17a-3) that can provide trading advice for the Account. When optionally populated, all	

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					CRDs included in the array must be only numeric values, must not contain any leading zeroes, and must be separated by commas.	
<i>rejectionID</i>	Unsigned	Correction Action Record	R	Exactly One per Correction Record	The CAT-assigned <i>rejectionID</i> from a prior submission that was created for the particular data validation error being corrected.	
<i>replacedByFDID</i>	Text (40)	FDID Record	C	Zero or One per FDID Record	The new <i>firmDesignatedID</i> replacing the currently reported <i>firmDesignatedID</i> . Used to provide historical linkage across replaced records over time. Must be provided if the <i>fdidEndReason</i> is 'REPLACED'. Must not be provided if the <i>fdidEndReason</i> is any value other than 'REPLACED'.	
<i>replacedByTID</i>	Hexadecimal (64)	TID Record	C	Zero or One per TID Record	The obfuscated Input Identifier of the CAT Customer when the CAT Customer's Input Identifier has changed. Must be provided if the <i>roleEndReason</i> is 'REPLACED'. Must not be provided when <i>roleEndReason</i> is a value other than 'REPLACED'.	
<i>replacedByTIDType</i>	Choice	TID Record	C	Zero or One per TID Record	The specific type of Input Identifier used to generate the <i>replacedByTID</i> when a CAT Customer's Input Identifier has changed. Required when <i>replacedByTID</i> is populated. Values: EIN – The <i>replacedByTID</i> was generated using an Employer Identification Number (EIN). FOREIGN – An identifier other than an EIN, SSN, or ITIN was used to generate the <i>replacedByTID</i> . SSN/ITIN – The	"EIN" "FOREIGN" "SSN/ITIN"

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					<i>replacedByTID</i> was generated using a Social Security Number (SSN) or Individual Taxpayer Identification Number (ITIN).	
<i>replacingForeignTIDCountryCd</i>	Choice	TID Record	C	Zero or One per TID Record	Code of the country that issued the Input Identifier used to generate the 'FOREIGN' <i>replacedByTIDType</i> when a foreign CAT Customer's Input Identifier has changed; in ISO 3166-1 alpha-2 format. Please view Appendix E for acceptable values. Required if the <i>replacedByTIDType</i> is 'FOREIGN' and the <i>replacingForeignTIDType</i> is not 'LEI'.	AA
<i>replacingForeignTIDType</i>	Choice	TID Record	C	Zero or One per TID Record	The specific type of foreign Input Identifier used to generate a 'FOREIGN' <i>replacedByTIDType</i> when a foreign CAT Customer's Input Identifier has changed. Required to be populated if the <i>replacedByTIDType</i> is 'FOREIGN'. The following hierarchy must be followed if more than one identifier type is available for a foreign CAT Customer: Values: 1. NATIONALID – National registration or tax identifier, if the Industry Member knows the identifier was issued by a national-level government body or agency, or when the Industry Member cannot distinguish if the issuer is a national-level government body or agency. 2. LEI – Legal Entity Identifier. 3. PASSPORT – Country of issuance and passport number.	"DRIVERLICENSE" "LEI" "NATIONALID" "OTHGOVT" "PASSPORT" "PERMANENT"

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					<p>4. PERMANENT – Permanent resident identifier.</p> <p>5. DRIVERLICENSE – Driver’s license identifier.</p> <p>6. OTHGOVT – Other government-issued identifier, if the Industry Member knows the identifier was issued by a non-national level government body or agency, such as a regional agency. Must not be used if one of the other allowable values apply.</p>	
<i>role</i>	Choice	FDID Customer Record	R	Exactly One per FDID Customer Record	<p>Representation of the type of role the CAT Customer has on the FDID.</p> <p>Values:</p> <p>AUTH3RD – An Authorized Trader who is not a holder of the Account, nor an employee of the reporting Industry Member, who has authority to place orders for the Account without prior approval of the account holder(s).</p> <p>AUTHREP – An Authorized Trader who is not a holder of the Account but does have authority to place orders for the Account without prior approval of the account holder(s) and is either the reporting Industry Member or an employee of the reporting Industry Member, if the account holder specifically designates the natural person employee as authorized to trade for the Account independent of the authority granted to the entity Authorized Trader. See FAQ X11 for more information. This <i>role</i> must also be used for affiliated group companies (for Legal</p>	<p>“AUTH3RD”</p> <p>“AUTHREP”</p> <p>“NTHOLDER”</p> <p>“TRDHOLDER”</p>

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					<p>Entity CAT Customers) and employees of affiliated group companies (for Natural Person CAT Customers) (see FAQ X11 for more information), if the Industry Member maintains in its books and records that the Legal Entity CAT Customer or Natural Person CAT Customer is an affiliate. For example, if the Industry Member maintains in its books and records that the Legal Entity Registered Investment Advisor Authorized Trader is affiliated with the reporting Industry Member, the <i>role</i> must be 'AUTHREP'. If the Industry Member does not maintain in its books and records that the Legal Entity Registered Investment Advisor Authorized Trader is affiliated with the reporting Industry Member, the <i>role</i> may be 'AUTH3RD'.</p> <p>NTHOLDER – Holder of the Account that does not have authorization to trade on the Account.</p> <p>TRDHOLDER – Holder of the Account that also has authorization to trade on the Account.</p>	
<i>roleEndDate</i>	Date (Number) (8)	FDID Customer Record	C	Zero or One per FDID Customer Record	Date on which the CAT Customer ceased having the specified <i>role</i> on the FDID, in YYYYMMDD format. Must be provided if the <i>roleEndReason</i> field is populated.	YYYYMMDD
<i>roleEndReason</i>	Choice	FDID Customer Record	C	Zero or One per FDID Customer Record	Reason why the CAT Customer ceased having the specified <i>role</i> on the FDID. Must be provided if the <i>roleEndDate</i> field is populated. Values: CORRECTION – CAT Customer was	"CORRECTION" "ENDED" "REPLACED" "OTHER" "TRANSFER"

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					<p>erroneously reported as associated to the FDID or FDID was not required to be reported to the Reference Database.</p> <p>ENDED – CAT Customer was reported to the Reference Database with an incorrect <i>role</i> (e.g., erroneously reported as 'AUTH3RD' rather than correctly reported as 'AUTHREP'), <i>role</i> on FDID was ended or FDID was ended (e.g., account was closed upon death of account holder).</p> <p>REPLACED – CAT Customer <i>role</i> on FDID was ended because the FDID was replaced with another FDID, or because the CAT Customer Input Identifier was replaced with another Input Identifier.</p> <p>OTHER – Other unlisted reason for ending the CAT Customer <i>role</i> on FDID or per FAQ X9, the reason why a Customer-to-FDID association was ended could not be reasonably ascertained.</p> <p>TRANSFER – Role ended because the FDID was transferred to another Industry Member as part of a mass transfer as described in Section 3.3.</p>	
<i>roleStartDate</i>	Date (Number) (8)	FDID Customer Record	R	Exactly One per FDID Customer Record	Date on which the CAT Customer entered into the specified <i>role</i> on the Account, in YYYYMMDD format.	YYYYMMDD
<i>tidType</i>	Choice	TID Record	R	Exactly One per TID Record	<p>The specific type of Input Identifier used to generate the <i>tidValue</i>.</p> <p>Values:</p> <p>EIN – The <i>tidValue</i> was generated using an Employer Identification</p>	<p>"EIN"</p> <p>"FOREIGN"</p> <p>"SSN/ITIN"</p>

Field Name	Data Type	JSON Object	Include Key	Occurrences	Description	Format/ Accepted Values
					Number (EIN). FOREIGN – An identifier other than an EIN, SSN, or ITIN was used to generate the <i>tidValue</i> . SSN/ITIN – The <i>tidValue</i> was generated using a Social Security Number (SSN) or Individual Taxpayer Identification Number (ITIN).	
<i>tidRecordCount</i>	Unsigned	Main	R	Exactly One per submission file	The count of TID Record occurrences within the file. Used to validate that the count of TID Records intended to be submitted within the file matches the count of records present in the file.	
<i>tidRecordList</i>	Multi-Dimensional Array	Main	C	Zero or One per submission file	Structure for the array of TID Records that are included in the file. Required if the submission file contains one or more TID Records; not required if no TID Records are included in the file.	
<i>tidValue</i>	Hexadecimal (64)	TID Record	R	Exactly One per TID Record	The obfuscated Input Identifier of the CAT Customer whose data is being reported.	
<i>version</i>	Text (10)	Main	R	Exactly One per submission file	The <i>version</i> of the Reference Data File Schema under which the data is reported. The <i>version</i> utilized for Reference Database reporting is 1.0.0.	1.0.0
<i>version</i>	Text (10)	Main	R	Exactly One per submission file	The <i>version</i> of the Transformed Identifiers File Schema under which the data is reported. The <i>version</i> utilized for Reference Database reporting is 1.0.0.	1.0.0

Appendix E: Foreign Country Codes

Appendix E is located on www.catnmsplan.com/specifications/im. The appendix contains a list of Foreign Country Codes and Country Names.