

VIA EMAIL (rule-comments@sec.gov)

May 28, 2025

Ms. Vanessa Countryman
Secretary
Securities and Exchange Commission
100 F Street, NE
Washington, DC 20549-1090

Re: File Number 4-698
Notice of Filing of Amendment to the National Market System Plan Governing the
Consolidated Audit Trail Regarding the Proposed Customer and Account Information
System Amendment (“Proposed Amendment”) – Response to Comments

Dear Ms. Countryman:

Consolidated Audit Trail, LLC (“CAT LLC”), on behalf of the Participants¹ in the National Market System Plan Governing the Consolidated Audit Trail² (the “CAT NMS Plan” or “Plan”), submits this letter in response to comments received by the Commission regarding the above-referenced Proposed Amendment.³ The Proposed Amendment was published for comment in the Federal Register on March 19, 2025,⁴ and received three comments in response.⁵

¹ The twenty-six Participants of the CAT NMS Plan are: BOX Exchange LLC, Cboe BYX Exchange, Inc., Cboe BZX Exchange, Inc., Cboe EDGA Exchange, Inc., Cboe EDGX Exchange, Inc., Cboe C2 Exchange, Inc., Cboe Exchange, Inc., Financial Industry Regulatory Authority, Inc. (“FINRA”), Investors Exchange LLC, Long-Term Stock Exchange, Inc., MEMX LLC, Miami International Securities Exchange LLC, MIAIX Emerald, LLC, MIAIX PEARL, LLC, MIAIX Sapphire, LLC, Nasdaq BX, Inc., Nasdaq GEMX, LLC, Nasdaq ISE, LLC, Nasdaq MRX, LLC, Nasdaq PHLX LLC, The NASDAQ Stock Market LLC, New York Stock Exchange LLC, NYSE American LLC, NYSE Arca, Inc., NYSE National, Inc., and NYSE Texas, Inc.

² The CAT NMS Plan is a national market system plan approved by the Commission pursuant to Section 11A of the Exchange Act and the rules and regulations thereunder. See Exchange Act Release No. 79318 (Nov. 15, 2016), 81 Fed. Reg. 84696 (Nov. 23, 2016) (“CAT NMS Plan Approval Order”). The full text of the CAT NMS Plan is available at <https://www.catnmsplan.com>. Unless otherwise defined herein, capitalized terms are defined as set forth in the CAT NMS Plan.

³ See Letter from Brandon Becker, CAT NMS Plan Operating Committee Chair, to Vanessa Countryman, Secretary, Commission, dated March 7, 2025, <https://www.catnmsplan.com/sites/default/files/2025-03/03.07.25-Proposed-CAT-NMS-Plan-Amendment-CAIS.pdf> (“Proposal”).

⁴ Exchange Act Release No. 102665, 90 Fed. Reg. 12845 (Mar. 19, 2025), <https://www.govinfo.gov/content/pkg/FR-2025-03-19/pdf/2025-04516.pdf> (“Notice”).

⁵ See Letter from Benjamin L. Schiffman, Director of Securities Policy, Better Markets, Inc., to Vanessa Countryman, Secretary, SEC (Apr. 9, 2025) (“Better Markets Letter”); Letter from Howard Meyerson, Managing Director, Financial Information Forum, to Vanessa Countryman, Secretary, SEC (Apr. 9, 2025) (“FIF Letter”); Letter from Jaime Klima, General Counsel, NYSE, to Paul Atkins, Chairman, SEC (Apr. 24, 2025) (“NYSE Letter”). In addition, the SEC Staff added to the comment file a letter from four U.S. Senators to Chairman Atkins. See Letter from Andy Kim, United States Senator, Jack Reed, United States Senator, Elizabeth Warren, United States Senator and Ranking Member, Committee on Banking, Housing, and Urban Affairs, and Chris Van Hollen, United States Senator, to Paul Atkins, Chairman, SEC (May 19, 2025). Among other topics, the letter asks the SEC to maintain the CAT in its current form and expresses concern that the SEC’s exemption from the requirement to report certain personally identifiable information, *see infra* n. 7, could impair the SEC’s ability to understand market events and pursue bad actors, including by foreign actors. As described herein and in the Proposal, the Proposed Amendment would preserve the ability of regulators to identify a Customer’s market activity across multiple exchanges, broker-dealers, and accounts via the unique Customer-ID, or “CCID,” which was one of the critical innovations of the CAT. Although regulators would no longer have direct access to Customer names, addresses, and years of birth within the CAT itself, regulators would continue to have the ability to obtain this information from Industry Members.

This letter also responds to questions and comments that CAT LLC received from the staff of the Commission (the “Staff”) regarding the Proposed Amendment.

As described in the Proposal, the Proposed Amendment would build on the security-related considerations expressed by the Commission in its exemption order permitting Industry Members to voluntarily stop reporting certain Customer information to CAT (the “Exemption Order”),⁶ and would achieve significant annual cost savings while preserving the regulatory surveillance benefit of a unique Customer-ID (“CCID”). Below, CAT LLC responds to the material aspects of the comments received.

I. Revisions and Technical Changes to the Proposed Amendment

CAT LLC is proposing certain revisions and technical changes to the Proposed Amendment based on the comments received to date and ongoing discussions with the Plan Processor related to the Proposed Amendment. Exhibit A to this letter sets forth the cumulative changes proposed to be made to the existing CAT NMS Plan. Exhibit B to this letter sets forth the proposed additional revisions against the Proposed Amendment. These revisions are described below.

A. Renaming of the “Customer and Account Information System” (“CAIS”) to the “Reference Database”; Revisions to Certain Defined Terms to More Accurately Describe the Information Reported to CAT under the Proposed Amendment

As described in the Proposal, the Proposed Amendment would add a new defined term “CAIS” to the CAT NMS Plan that would refer to the existing customer and account information system of CAT. Upon further evaluation and consideration of comments, CAT LLC has determined that the “CAIS” and “customer and account information system” terminology would be outdated and ill-suited given the limited nature and scope of data that would be collected under the Proposed Amendment. This terminology was predicated on concepts relating to the collection of PII that would no longer accurately describe this database.⁷

Accordingly, to avoid confusion and to make very clear that the Proposed Amendment fundamentally is intended to eliminate sensitive customer and account information from the CAT, CAT LLC is now proposing to change the proposed defined term “CAIS” to “Reference Database,” which more accurately describes the limited nature, scope, and function of this database as a result of eliminating the requirement for Industry Members to report Customer names, Customer addresses, account names, account addresses, years of birth, and authorized trader names (collectively, “Name, Address, and YOB”) to CAT. CAT LLC believes that it would be more accurate to use the term “Reference Database” because, while this database would continue to exist separate from the transactional database, following the implementation

⁶ Exchange Act Release No. 102386 (Feb. 10, 2025), 90 Fed. Reg. 9642 (Feb. 14, 2025), <https://www.govinfo.gov/content/pkg/FR-2025-02-14/pdf/2025-02620.pdf> (“Exemption Order”).

⁷ For example, the CCID Exemption Order conceived of the “customer and account information system of the CAT” as referring to “the database that contains PII.” See Exchange Act Rel. No. 88393 (Mar. 17, 2020), 85 Fed. Reg. 16152, 16153 n.22 (Mar. 20, 2020), <https://www.govinfo.gov/content/pkg/FR-2020-03-20/pdf/2020-05935.pdf> (“CCID Exemption Order”).

of the Proposed Amendment, its function will be to implement the core functionality that manages the association between CCIDs and Firm Designated IDs (“FDIDs”), which allows regulatory users to associate a unique CCID with transaction data.

Relatedly, as originally proposed, the Proposed Amendment also would have changed the defined terms “Customer Account Information” and “Customer Identifying Information” to “Account Attributes” and “Customer Attributes,” respectively. To align with the new defined term “Reference Database” described above, CAT LLC is now proposing to change the defined term “Account Attributes” to “Account Reference Data,” and the defined term “Customer Attributes” to “Customer Reference Data.” CAT LLC also proposes to change the defined term “Customer and Account Attributes” that is described in the Proposal to “Reference Data” consistent with the change described above.⁸ Subject to the technical change related to “customer type” described in Section I.B below, these changes in nomenclature are solely to more accurately reflect the limited nature of the data that would be reported to CAT and would not impact the substance of the defined terms “Account Attributes,” “Customer Attributes,” and “Customer and Account Attributes,” as they are described in the Proposal. As discussed below, Exhibit C to this letter identifies the limited fields under the CAT Reporting Customer & Account Technical Specifications for Industry Members (the “CAIS Technical Specifications”) that would be retained if the Proposed Amendment is approved.⁹

B. Technical Revisions to the Proposed Amendment

CAT LLC is proposing three technical revisions to the Proposed Amendment based on further discussions with the Plan Processor.

First, CAT LLC proposes to move the reference to “customer type” in the definition of “Account Reference Data” to the definition of “Customer Reference Data”¹⁰ to more accurately reflect that “customer type” relates to customers as opposed to accounts, and that under the current CAIS Technical Specifications the *customerType* field is associated to the customer record as opposed to the FDID (*i.e.*, account) record.

Second, CAT LLC proposes to change the reference to “Firm Identifier Number” in Section 9.2 of Appendix D to “Firm Designated ID” (which is a defined term and does not appear anywhere else in the CAT NMS Plan) to more accurately capture the information that this section describes as the “number that the CAT Reporter will supply on all orders generated for the Account.”

⁸ As described in the Proposal, the Proposed Amendment originally would have replaced the term “PII” with “Customer and Account Attributes”; as described herein, CAT LLC now proposes to replace the term “PII” with the new defined term “Reference Data,” subject to the specific changes described in Section I.C below.

⁹ Material amendments to the CAIS Technical Specifications, *infra* n.11, require a Supermajority Vote of the Operating Committee.

¹⁰ As described in Section I.A, CAT LLC is proposing to change the defined terms “Account Attributes” and “Customer Attributes” as originally proposed to “Account Reference Data” and “Customer Reference Data,” respectively, to more accurately describe the nature of the data that would be reported to and stored in CAIS (*i.e.*, the Reference Database) as a result of the Proposed Amendment’s implementation.

Third, CAT LLC proposes to add the phrase “including, but not limited to” to the proposed definition of newly proposed term “Transformed Identifier” to clarify that the list of input identifiers used to identify unique customers that follows in this definition is non-exhaustive.¹¹

These technical revisions are reflected in Exhibit A and Exhibit B to this letter.

C. Revisions to Certain Plan Requirements Following Elimination of “PII”

As described in the Proposal, the Proposed Amendment originally would have deleted the existing defined term “PII” and simply replaced it with the new defined term “Customer and Account Attributes” throughout the CAT NMS Plan. CAT LLC is proposing two changes from this original proposal. First, as described in Section I.A above, CAT LLC now proposes to change the defined term “Customer and Account Attributes” to “Reference Data.” Second, based on further discussions with the Chief Information Security Officer (“CISO”) and the Plan Processor, in lieu of simply replacing “PII” with “Reference Data” throughout the CAT NMS Plan, CAT LLC is proposing more targeted revisions to Sections 6.2(b)(v)(F) and 6.10(c)(ii), and Appendix D, Sections 4.1; 4.1.2; 4.1.4; 4.1.6; 8.1.1; 8.1.3; 8.2; and 8.2.2, as summarized below.

The CAT NMS Plan generally provides that the Plan Processor is responsible for the security and confidentiality of all CAT Data and establishes comprehensive data security requirements. In addition, the CAT NMS Plan distinguishes PII from other forms of CAT Data and requires “additional levels of protection for PII”.¹² The CISO has informed CAT LLC that it would be incongruent to apply these PII-specific requirements to Reference Data given that the particularly sensitive data that these requirements were designed to protect—*e.g.*, Customer name, Customer address, account name, account address, authorized trader names list, account number, day of birth, month of birth, year of birth, and ITIN/SSN—would be eliminated under the Proposed Amendment, and given the security and confidentiality requirements that continue to apply to CAT Data in general. In addition, existing provisions relating to general data security requirements would continue to apply to Reference Data. The proposed revisions are reflected in Exhibit A and Exhibit B to this letter and are summarized below.

- *Section 6.2(b)(v)(F)* would be revised to eliminate the requirement that the CISO create and enforce appropriate policies, procedures, and control structures to monitor and address data security issues specifically with respect to “PII data requirements, including the standards set forth in Appendix D, PII Data Requirements” (without otherwise

¹¹ See CAT Reporting Customer & Account Technical Specifications for Industry Members (“CAIS Technical Specifications”) at Section 2.2.5 (dated as of Mar. 25, 2025) (explaining that input identifiers include social security numbers, individual taxpayer identification numbers, employer identification numbers, and foreign identifiers), available at https://www.catnmsplan.com/sites/default/files/2025-03/03.25.25_Full_CAIS_Technical_Specifications_2.2.0_r3_CLEAN.pdf.

¹² Exchange Act Release No. 78318 (Nov. 15, 2016), 81 Fed. Reg. 84696, 84724 (Nov. 23, 2016). See also Appendix C, Section A.4 of the CAT NMS Plan (noting that, “because of the sensitivity of PII, the Participants have determined PII should be subject to more stringent standards and requirements”).

affecting general data security requirements that would continue to apply to Reference Data).

- *Section 6.10(c)(ii)* would be revised to eliminate the requirement that “PII data shall be masked unless users have permission to view the CAT Data that has been requested.” This masking restraint was designed specifically for PII data and would be incongruent in the context of Reference Data.
- *Appendix D, Section 4.1* would be revised to eliminate the phrase “or PII data” from the requirement that “[t]he Plan Processor must have documented ‘hardening baselines’ for systems that will store, process, or transmit CAT Data or PII data.” It is redundant to specifically identify Reference Data (which is already encompassed by the general reference to CAT Data) in this provision.
- *Appendix D, Section 4.1.2* would be revised to eliminate the following provisions: “Storage of unencrypted PII data is not permissible. PII encryption methodology must include a secure documented key management strategy such as the use of HSM(s). The Plan Processor must describe how PII encryption is performed and the key management strategy (e.g., AES-256, 3DES).” It is redundant to apply these same provisions specifically to Reference Data because Section 4.1.2 separately requires that “[a]ll CAT Data must be encrypted at rest and in flight using industry standard best practices (e.g., SSL/TLS) including archival data storage methods such as tape backup,” and this requirement would not change.
- *Appendix D, Section 4.1.4* would eliminate certain express references to PII, and would clarify that any login to the system (without limitation to PII) must be secured via multi-factor authentication (“MFA”).
- *Appendix D, Section 4.1.6*, which governs “PII Data Requirements,” would be eliminated in its entirety as these provisions would be incongruent in the context of Reference Data.
- *Appendix D, Section 8.1.1* would eliminate the following sentences: “In addition, the online targeted query tool must not display any PII data. Instead, it will display existing non-PII unique identifiers (e.g., Customer-ID or Firm Designated ID). The PII corresponding to these identifiers can be gathered using the PII workflow described in Appendix D, Data Security, PII Data Requirements.” These provisions would be incongruent in the context of Reference Data.
- *Appendix D, Section 8.1.3* would delete certain express references to PII, including the requirement that “PII data must not be available via the online targeted query tool or the user-defined direct query interface.” These provisions would be incongruent in the context of Reference Data.
- *Appendix D, Section 8.2* would be revised to eliminate the requirement that “Direct queries must not return or display PII data. Instead, they will return existing non-PII

unique identifiers (e.g., Customer-ID or Firm Designated ID). The PII corresponding to these identifiers can be gathered using the PII workflow described in Appendix D, Data Security, PII Data Requirements.” These provisions would be incongruent in the context of Reference Data.

- *Appendix D, Section 8.2.2* would be revised to eliminate the requirement that “PII data must be masked unless users have permission to view the data that has been requested.” These provisions would be incongruent in the context of Reference Data. Notably, Section 8.2.2 separately provides that “[d]ata must be encrypted, password protected and sent via secure methods of transmission,” and this will continue to apply to Reference Data.

D. Elimination of Requirement to Report Employer Identification Numbers

In addition, CAT LLC is proposing to eliminate from the definition of “Customer Reference Data” the requirement to capture, with respect to legal entities, an Employer Identification Number (“EIN”).¹³

Under the CCID Exemption Order,¹⁴ tax identifiers provide the basis for establishing a unique CCID for both natural person and legal entity Customers. For natural persons, Industry Members must generate a transformed identifier (“TID”) based on a Customer’s social security number (“SSN”) or individual taxpayer identification number (“ITIN”) prior to submission,¹⁵ and only these TID values may be reported to CAT via the CCID Subsystem.¹⁶ For legal entities, however, the Industry Member must: (1) translate the EIN into a TID and report the TID value to the CCID Subsystem; *and* (2) submit the actual EIN as plain text (as required by the CAT NMS Plan) in the *ein* field on the legal entity customer record.

Because an EIN contains the same number of digits as a SSN and must be reported as plain text, there is the risk that an Industry Member could inappropriately report an individual’s SSN in the *ein* field. Eliminating the *ein* field would eliminate the possibility of such improper reporting without any effect on the Plan Processor’s ability to create a unique CCID, because Industry Members would continue to report the translated TID value (which is based on the EIN) to the CCID Subsystem. Even if the *ein* field is eliminated, regulators would retain the ability to search by EIN for a CCID value.

¹³ An EIN is a unique nine-digit number issued by the Internal Revenue Service to business entities operating in the United States for tax purposes.

¹⁴ CCID Exemption Order, *supra* n.7.

¹⁵ See CAIS Technical Specifications, *supra* n.11, at Section 3.4 (“Translation of Input Identifiers to TID Values”); see also Section 2.2.5.2 (explaining foreign identifier values for Customers that do not have a U.S. tax identifier).

¹⁶ In turn, the CCID Subsystem performs a second transformation to create a unique CCID.

II. Response to Comments Received

A. Intended Scope, Impact and Application of the Proposed Amendment

Based on discussions with the Staff, CAT LLC is providing more detailed information regarding the intended scope, impact and application of the Proposed Amendment.

1. Proposed Changes to CAIS Technical Specifications

In response to a request from the Staff, Exhibit C to this letter identifies the fields under the CAIS Technical Specifications that are currently anticipated to be eliminated or retained if the Proposed Amendment is approved.¹⁷

2. Effect of Proposed Amendments

The Staff requested that CAT LLC confirm and provide more detailed information regarding the effect of the Proposed Amendment on the functionality of the CAT System and its impact on regulatory users.

First, the Staff asked CAT LLC to confirm whether the Proposed Amendment would eliminate the requirement to create a unique CCID or change the process currently used to create a unique CCID.

As described in the Proposal, the Proposed Amendment would require the Plan Processor to continue creating a unique CCID in the same way that it does today. In particular, the revisions to Section 9.3 of Appendix D are designed to incorporate the existing process by which the Plan Processor determines a unique CCID for each Customer under the CCID Exemption Order. Accordingly, the Proposed Amendment would not eliminate the requirement to create a unique CCID, nor would it change the process by which the Plan Processor currently creates a unique CCID.

Similarly, as described in the Proposal, Industry Members would continue reporting basic Customer and account information (*e.g.*, TID, account type) to the Reference Database, but would no longer be required to report Names, Addresses, and YOBs.¹⁸ Industry Members would continue reporting TIDs to the CCID Subsystem, the Plan Processor would continue to provide a daily mapping of CCIDs to FDIDs, and regulatory users would continue to be able to query all data remaining in the Reference Database following the implementation of the Proposal,¹⁹ all in

¹⁷ Material amendments to the CAIS Technical Specifications require a Supermajority Vote of the Operating Committee.

¹⁸ In addition to eliminating the requirement for Industry Members to report Name, Address, and YOB to the CAT, the Proposed Amendment proposes deleting, or otherwise making inaccessible to regulatory users, all Names, Addresses, and YOBs currently stored in the CAT. To be clear, the Proposal only contemplates deleting Names, Addresses, and YOBs that are currently stored in the CAT System and does not reach any Name, Address, and YOB data that has been downloaded by a Participant to its systems or that has been downloaded by the Staff.

¹⁹ Regulatory users would still be able to query transaction data by CCID, and the Proposal would not impact reciprocal functionality allowing regulatory users with access to SSNs and/or EINs to input those values into the query tool to identify associated CCIDs.

the same manner as is done today pursuant to the CCID Exemption Order. In addition, because the *tidType* data field would continue to identify the specific type of input identifier used to generate a *tidValue* (e.g., “EIN,” “FOREIGN,” or “SSN/ITIN”), regulators would continue to be able to identify the type of Customer associated with a particular CCID.

Second, the Staff asked CAT LLC to explain how the Plan Processor validates TIDs and CCIDs and ensures that Industry Members are accurately reporting TIDs to the CCID Subsystem.

Currently, the Plan Processor performs certain formatting validations on reported TID values; for example, the Plan Processor validates that a TID value includes the correct number of characters in the appropriate format, whether a TID value received is already included in the CAT, and whether a TID value is a valid transformation of a valid SSN or ITIN.²⁰ In addition, the Plan Processor currently validates whether a particular TID is associated with different years of birth. However, by intent and by design,²¹ the process for creating a TID, and thus ensuring that each Customer is identified by one and only one CCID, is reliant on Industry Members accurately creating a TID value outside of CAT and only reporting the TID value (*not* the SSN/ITIN) to the CCID Subsystem; the Plan Processor therefore does not have access to and cannot validate the SSN/ITIN used by an Industry Member to create a TID value.²² In this regard, the CCID Exemption Order contemplated that “the elimination of the collection of SSNs would cause CAT Reporters to assume a critical role in the accurate generation of CCIDs.”²³ The Proposed Amendment would not modify any validation checks currently performed by the Plan Processor with respect to the CCID itself.

Third, the Staff asked CAT LLC to provide additional information regarding the proposed deletion of certain requirements from Section 9.4 of Appendix D that the Plan Processor “design and implement procedures and mechanisms to handle both minor and material inconsistencies in Customer information,” and to explain why these requirements would no longer be necessary.

As described in the Proposal, the Proposed Amendment is intended to formally incorporate and codify the existing CCID Exemption Order to the CAT NMS Plan. The Commission previously granted relief from the error resolution requirements of Section 9.4 with respect to SSNs, dates of birth, and account numbers in the CCID Exemption Order; instead, under the exemption, the Plan Processor is required “to design and implement an error resolution

²⁰ In addition, the Plan Processor checks to confirm whether every FDID reported to the transaction database is also included in CAIS (*i.e.*, the Reference Database). If the FDID does not appear in both databases, then an error message is generated on the transaction side indicating that the data needs to be checked and validated.

²¹ As noted in the CCID Exemption Order, *supra* n.7, the CCID alternative was developed by the Chief Information Security Officer from CAT and the Chief Information Security Officers from each of the Participants, in consultation with security experts from member firms of the Securities Industry and Financial Markets Association.

²² Under the two-phase transformation process for creating a CCID described in CCID Exemption Order, a CAT Reporter creates a TID value (not the social security number or taxpayer identification number) and reports this TID value to the CCID Subsystem, which in turn performs a second transformation to create a unique CCID. See CCID Exemption Order, *supra* n.7. The Proposed Amendment is intended to formally incorporate and codify the existing CCID Exemption Order to the CAT NMS Plan.

²³ CCID Exemption Order at 16154.

process for CCIDs and years of birth.”²⁴ Therefore, the Plan Processor currently does not identify “[m]aterial inconsistencies such as two different people with the same SSN” as required by Section 9.4 of Appendix D because SSNs are not reportable to CAT under the CCID Exemption Order. Consistent with the exemption, the Plan Processor currently validates whether a TID value is associated with different years of birth.²⁵ In addition, the query tool currently accounts for minor inconsistencies in how CAT Reporters report data to the CAT; for example, a query including the word “Street” would include results including both “Street” and “St.” Because the Proposed Amendment is intended to incorporate the existing CCID Exemption Order and would further eliminate Customer addresses and years of birth, CAT LLC believes the proposed revisions to Section 9.4 are appropriate.²⁶

Fourth, the Staff asked CAT LLC to provide additional information regarding the proposed deletion of certain requirements from Section 9.1 of Appendix D that the Plan Processor implement data validations to “[c]onfirm the number of digits on a SSN,” “[c]onfirm date of birth,” and “[a]ccommodate the situation where a single SSN is used by more than one individual.”

As noted, the Proposed Amendment is intended to formally incorporate the CCID Exemption Order into the CAT NMS Plan. The Commission previously granted relief from the data validation requirements of Section 9.1 with respect to SSNs, dates of birth, and account numbers in the CCID Exemption Order; instead, under the exemption, the Plan Processor is required to “implement a validation process for transformed values submitted by CAT Reporters to the Plan Processor.”²⁷ As noted above, the Plan Processor currently validates that a TID value includes the correct number of characters in the appropriate format, whether a TID value received is already included in the CAT, whether a TID value is a valid transformation of a valid SSN or ITIN, and whether a TID value is associated with different years of birth. If the Proposed Amendment is adopted, the Plan Processor would continue these data formatting validations; however, the validation as to whether a TID value is associated with different years of birth would be eliminated because years of birth would no longer be reportable to CAT.

Fifth, the Staff asked CAT LLC to explain how eliminating Names, Addresses, and YOBs from the CAT could impact the Commission’s ability to fulfill its regulatory obligations and whether eliminating such data from the CAT would impact regulatory efficiency.

The Commission previously determined in the Exemption Order that permitting Industry Members to voluntarily stop reporting Names, Addresses, and YOBs to the CAT is “consistent

²⁴ CCID Exemption Order at 16155.

²⁵ Section 2.4 of the CAIS Technical Specifications describes mechanisms to handle both minor and material inconsistencies in Customer information submitted to CAT.

²⁶ The proposed revisions would also eliminate the bulleted list of examples under “[r]eason identified as the source of the issue”—“such as: duplicate SSN, significantly different Name; duplicate SSN, different DOB; discrepancies in LTID; or others as determined by the Plan Processor.” For the avoidance of doubt, the general requirement to record the “[r]eason identified as the source of the issue” will continue to apply, and in particular the Plan Processor will continue to collaborate with the SEC to validate and identify any discrepancies with the LTID information provided by CAT Reporters.

²⁷ CCID Exemption Order at 16155.

with the public interest, the protection of investors, the maintenance of fair and orderly markets and the removal of impediments to, and perfection of the mechanisms of, a national market system.”²⁸ The Commission acknowledged that doing so “will negatively impact regulatory efficiency”; however, it further explained that “the system of generating reliable CCIDs will not be impacted,” and that “[i]f there is a regulatory need to ascertain the names, addresses and years of birth of such individuals behind particular orders or trades, regulators will be able to request such information from Industry Members who have long been required to collect such information under Section 17 of the Exchange Act.”²⁹ In addition, as noted in the Proposal, CAT LLC believes that the potential cost savings associated with the Proposed Amendment, which builds upon the Commission’s Exemption Order, are significant and would materially advance CAT LLC’s ongoing cost savings efforts without impacting the ability of regulators to perform cross-market surveillance via the unique CCID or to otherwise use the CAT for its intended regulatory purposes.

Sixth, the Staff asked whether CAT LLC has considered whether to narrow the scope of the Proposed Amendment to apply only to certain legal entities (for example, a legal entity where the name of the natural person is included in the entity name), as opposed to extending to all legal entities.

As described in the Proposal, by eliminating the requirement to report Names, Addresses, and YOBs for all Customers entirely, the Proposed Amendment would allow the Plan Processor to eliminate costly functionality currently required to support regulatory queries of such data, which would result in significant annual cost savings. These cost savings would not be possible if any such data is maintained in the CAT, even for a limited set of natural persons (*e.g.*, foreign natural persons) or legal entities. In addition, it is unclear whether Industry Members would be able to program their systems to accurately validate whether the name of a legal entity includes the name of natural person. As the Commission noted in the Exemption Order, while eliminating Names, Addresses, and YOBs will impact regulatory efficiency, if there is a regulatory need to obtain such information regulators may request it from Industry Members.

Seventh, the Staff asked how a regulator would be able to identify a legal entity with multiple sub-accounts and sub-entities, if legal entity names are eliminated from the CAT. Although the Proposal would eliminate legal entity names from the CAT, each FDID would continue to be associated with a valid LEI and large trader identifier (“LTID”) (if applicable). Accordingly, regulators would be able to use the LEI to identify the name of a legal entity associated with a particular FDID via public databases of LEI data that exist outside of CAT. In addition, the Commission (which assigns LTIDs and collects names and other information identifying large traders) also would be able to use the LTID to identify the name of a legal entity associated with a particular FDID. Notably, if different EINs are reported to the CAT for different sub-entities, the TID values would result in different CCIDs; this is true today and would remain true if the proposed changes are adopted.

²⁸ Exemption Order at 9646.

²⁹ *Id.* at 9645-46.

3. Response to Better Markets Letter

Better Markets urges the Commission to reject the Proposed Amendment, arguing that it would hinder the Commission's ability "to quickly spot illegal and manipulative trading and identify the parties responsible for market disruptions, manipulations, and other abuses if the CAT does not collect or retain customer identifying information such as names, addresses, and years of birth."³⁰

Contrary to the assertions in the Better Markets Letter,³¹ the Proposed Amendment would not prevent regulators from determining the identity of persons involved in potential securities violations. The Proposal is specifically designed to allow regulators to determine the identities of the relevant Customers as necessary. As discussed in the Proposal, the Proposed Amendment would not alter the existing requirements to provide information to the CAT that identifies the account related to an order or transaction (*i.e.*, the FDID), nor would it change the existing requirement to provide information to the CAT that would allow regulators to track a Customer's trading activity across accounts, broker-dealers, and markets (*i.e.*, the CCID). Accordingly, if a regulator identifies an order or transaction that raises a regulatory issue, regulators can use the FDID and the CCID to identify the associated account. After identifying the relevant account using information within the CAT, regulators can readily obtain the identity of the accountholders and other account-related information from the Industry Member that is carrying the account.

Given that the Proposed Amendment would not prevent regulators from determining the identity of persons involved in potential securities violations, Better Markets' comments appear to be primarily focused on the speed with which the regulators can access the identity of the those involved with a transaction at issue.³² As an initial matter, and as discussed above, the Commission has already empowered Industry Members to voluntarily cease reporting customer Names, Addresses, and YOBs to CAT for natural persons with SSNs/ITINs, and, in doing so, acknowledged that it would be reasonable for regulators to rely on obtaining such information from Industry Members rather than from CAT. Based on their experience, the Participants believe that the difference in the amount of time it takes to access the name of an investor in CAT versus the time it takes to request and obtain a name from an Industry Member would be relevant in only very limited scenarios and would not materially impede examinations and investigations. Accordingly, it is difficult to justify the substantial costs related to the collection and storage of Names, Addresses, and YOBs for all Customers, as well as the security concerns expressed by the Commission in the Exemption Order, for the convenience of regulators having direct access to such personal information in the CAT for limited regulatory circumstances. This is particularly the case given that the Proposed Amendment is designed to preserve the regulatory benefit of the unique CCID. Indeed, the Better Markets Letter conspicuously fails to weigh the millions in dollars in cost savings that would be achieved by the Proposed Amendment against the perceived benefit of retaining Customer Names, Addresses, and YOBs in the CAT.

³⁰ Better Markets Letter at 4.

³¹ *Id.* at 4-5.

³² *Id.*

4. Electronic Blue Sheets (“EBS”); Request-Response System

The FIF Letter supports the Proposed Amendment but notes that, because the proposed changes would eliminate certain identifying information for natural persons and legal entities, regulators would need a new mechanism for associating CAT Data with specific natural persons and legal entities.³³ FIF urges the use of a request and response system other than EBS for this purpose.³⁴ After identifying a variety of issues with EBS, FIF recommends that the SEC retire EBS entirely.³⁵

CAT LLC believes that, at least in the near term, the current EBS system provides an appropriate mechanism for obtaining identifying information for natural persons and legal entities if the Proposed Amendment were approved. This position is consistent with the Commission’s analysis of how regulators could learn the identity of Customers under the Exemption Order, where the Commission concluded that regulators could do so by relying on EBS.³⁶ The discussion as to whether a different request-response system is appropriate or desirable is outside the scope of this Proposed Amendment. It is not necessary for the SEC to resolve this issue in the context of this filing; indeed, the SEC did not indicate a need to resolve this issue in adopting the Exemption Order. Instead, the Exemption Order cited broker-dealers’ existing obligations under SEC Rule 17a-25, which governs EBS, further noting that “[i]f multiple FDIDs are associated with a single CCID, regulators would only need to contact one broker-dealer to request the name and/or address of the individual.”³⁷ Nevertheless, the Participants are open to discussing the issue further with the SEC and Industry Members separately from this filing.

CAT LLC further notes that EBS and SEC Rule 17a-25 are outside the purview of CAT LLC. Because Rule 17a-25 is a rule of the Commission, the Commission—not CAT LLC—must propose any changes related thereto. Indeed, in the context of approving the CAT NMS Plan, the SEC directed the Staff to consider changes to EBS that would be appropriate in light of the creation of the CAT.³⁸ In addition, the Participants have previously indicated that they would propose amendments to their own rules related to EBS in conjunction with any SEC rulemaking related to SEC Rule 17a-25.³⁹ Accordingly, FIF’s comments related to concerns and recommendations related to EBS are more appropriately directed to the Commission.

B. Additional Details Regarding Calculation of Estimated Cost Savings and One-Time Implementation Costs

CAT LLC is adjusting the prior cost savings estimates as described in the Proposal to reflect subsequent optimizations introduced by the Plan Processor. In addition, based on discussions with the Staff, CAT LLC is providing more detailed information regarding the

³³ FIF Letter at 5-6.

³⁴ *Id.* at 6-7.

³⁵ *Id.* at 7-8.

³⁶ *See* Exemption Order at 9645.

³⁷ *Id.* at n.49.

³⁸ CAT NMS Plan Approval Order at 84777.

³⁹ *See* CAT FAQ A-19.

calculation of the estimated cost savings as well as the one-time implementation costs payable to the Plan Processor.

In approving prior CAT LLC cost savings amendments, “[t]he Commission acknowledge[d] the necessity of using simplifying assumptions to generate estimates and that such assumptions can affect the precision of the estimates,” and that, even where the Commission identified potential issues with such assumptions that “could affect the magnitude of the cost estimates,” approval was warranted because “the cost savings will be meaningful regardless of these issues.”⁴⁰ CAT LLC believes that the cost savings under the Proposed Amendment will be meaningful, even if the magnitude of the estimated savings cannot be determined with absolute certainty.

Consistent with prior cost savings amendments, all cost savings estimates are based on reasonable assumptions related to, among other factors, the current state and costs of CAT operations; current CAT NMS Plan requirements; reporting by Participants, Industry Members and market data providers; observed data rates and volumes; current discounts, reservations, and cost savings plans; and associated cloud fees. By their nature, cost savings estimates are subject to various assumptions and an inherent degree of uncertainty and, as such, actual future savings could be more or less than estimated due to changes in any of these variables. It is well established, however, that “[t]he Commission does not believe it is possible for the Participants to predict with certainty how the magnitude of each driver of CAT costs will change over time.”⁴¹

CAT LLC believes that the estimates and assumptions described below are reasonable and provide an adequate basis for the Commission to evaluate the costs and benefits of the Proposed Amendment. More broadly, CAT LLC believes that the cost savings are even more readily justified in this context, given that the Proposed Amendment is intended to codify and build on the Commission’s determination in its own Exemption Order that Names, Addresses, and YOBs should be eliminated from the CAT.

1. Adjustments to Prior Cost Savings Estimates Due to Subsequent Optimizations

As described in the Proposal, the 2025 budget estimates CAIS-related costs of approximately \$35.5 million, which includes: (1) \$20.7 million in CAIS operating fees payable to the Plan Processor;⁴² (2) \$2.8 million in CAIS licensing fees payable to the Plan Processor; and (3) approximately \$12 million in CAIS-related cloud hosting services fees (*i.e.*, AWS fees). The Proposal estimated approximately \$10 to \$12 million in savings attributable to a \$5 million reduction in operating fees and a \$5 to \$7 million reduction in AWS fees. As noted in the Proposal, all cost savings projections are the Plan Processor’s best estimates based on the current

⁴⁰ Exchange Act Release No. 101901 (Dec. 12, 2024), 89 Fed. Reg. 103033, 103046 (Dec. 18, 2024).

⁴¹ Exchange Act Release No. 98290, 88 Fed. Reg. 62628, 62641 (Sept. 12, 2023).

⁴² This CAIS (*i.e.*, Reference Database) operating fee is separate and in addition to a \$30.8 million operating fee payable to the Plan Processor to operate and maintain the transaction database for the CAT.

Proposed Amendment and are subject to change based on ongoing improvements to AWS that may reduce current AWS costs.

Following the submission of the Proposal, and as part of CAT LLC’s ongoing efforts to manage costs, the Plan Processor deployed certain optimizations related to compute, storage and search indexing that are expected to immediately reduce existing CAIS-related cloud hosting fees by approximately \$2.5 to \$3.5 million annually from the original 2025 budget of \$12 million, thereby impacting the estimated cost savings originally described in the Proposal.

As a result of these savings, the Proposed Amendment is now expected to save approximately \$2 to \$4 million in incremental AWS savings (versus \$5 to \$7 million as described in the Proposal prior to the optimizations) and approximately \$7 to \$9 million in overall costs (versus \$10 to \$12 million as described in the Proposal prior to the optimizations).⁴³ The following chart summarizes estimated CAIS (Reference Database) costs: (1) under the original 2025 budget; (2) following the recent optimizations recently introduced by the Plan Processor and described above; and (3) if the Proposed Amendment is approved:

	Estimated CAIS Costs Original 2025 Budget	Estimated CAIS Costs Following Recent Optimizations	Estimated Reference Database Costs Under Proposed Amendment
CAIS (Reference Database) Operating Fees—Plan Processor	\$20.7 million	\$20.7 million	\$15.7 million
CAIS (Reference Database) Licensing Fees—Plan Processor	\$2.8 million	\$2.8 million	\$2.8 million
CAIS- (Reference Database-) Related Cloud Hosting Services Fees	~\$12 million	~\$8.5 to \$9.5 million	~\$4.5 to \$7.5 million
TOTAL	~\$35.5 million	~\$32 to \$33 million	~\$23 to \$26 million

2. Calculation of Cost Savings Estimates and One-Time Implementation Costs

The Staff requested that CAT LLC provide more detailed information regarding the calculation of the estimated cost savings as well as the one-time implementation costs payable to the Plan Processor.

As noted above, all cost savings estimates are based on reasonable assumptions and are subject to inherent uncertainty; however, the Commission has previously acknowledged the “necessity of using simplifying assumptions to generate estimates and that such assumptions can

⁴³ The \$5 million reduction in CAIS (*i.e.*, Reference Database) operating fees as described in the Proposal is unchanged.

affect the precision of the estimates.”⁴⁴ CAT LLC believes that the estimates and assumptions described below are reasonable and provide an adequate basis for the Commission to evaluate the costs and benefits of the Proposed Amendment.

Cost Savings Estimates. As detailed in the Proposal, the Proposed Amendment, if adopted, would reduce operating fees and cloud-hosting services fees.

First, the Plan Processor estimated that the Proposed Amendment could reduce its CAIS (Reference Database) operating fees by approximately \$5 million per year if the Proposed Amendment is adopted. This \$5 million reduction is based on the reduced work to operate, maintain and improve certain functionality and related indexes. As a result, CAIS (Reference Database) operating fees payable to the Plan Processor would be reduced from approximately \$20.7 million to \$15.7 million annually.

Second, subsequent to the recent optimizations detailed above, the Plan Processor now estimates that the Proposed Amendment would reduce CAIS- (Reference Database-) related cloud hosting fees by approximately \$2 to \$4 million annually. These cost savings are driven by eliminating requirements to process, store, and query on Name and Address and other free text data (e.g., match functionality), since under the Proposed Amendment these elements will no longer be provided to the CAT. The reduction is primarily driven by the removal of search technology that allows regulators’ searches to be “fuzzy” rather than exact matches, similar to how an internet search engine ranks results through a scoring mechanism (e.g., currently, a search for “John” will also search for other variations such as “Jon” and “Jonathon”, a search for “St.” will also search for other permutations of “Street”). Several indexes are built that include all the free text data elements to allow for this type of searching; under the Proposed Amendment, the cost of maintaining this functionality would be eliminated.

In addition, the Staff asked CAT LLC to explain why the \$2.8 million in CAIS licensing fees payable to the Plan Processor would be unaffected by the Proposed Amendment. Based on discussions with the Plan Processor, while the Proposed Amendment would eliminate certain data attributes from CAIS (i.e., the Reference Database), the licensing fee would be unchanged because the functionality of the licensed software underlying CAIS (i.e., the Reference Database) would not be eliminated.

One-Time Implementation Costs. As detailed in the Proposal, the Plan Processor has estimated a one-time change request implementation fee of approximately \$4.5 million to \$5.5 million. As noted in the Proposal, one-time implementation costs will generally consist of Plan Processor labor costs associated with coding and software development, as well as any related cloud fees associated with the development, testing, and load testing of the proposed changes. Specifically, the Plan Processor would expect to undertake the following activities to implement the Proposed Amendment, if adopted:

⁴⁴ Exchange Act Release No. 101901 (Dec. 12, 2024), 89 Fed. Reg. 103033, 103046 (Dec. 18, 2024).

- Revise the Technical Specifications and guidance (*e.g.*, FAQs) to remove the Name, Address, and YOB elements per the amendment.
- Revise and update all the data collection, validation, and data processing to support these changes.
- Design and implement new data structures and data storage/databases based on the changes in the amendment.
- Revise and update the CAIS (*i.e.*, Reference Database) portals and underlying application programming interfaces (APIs) in support of these changes.
- Design and implement one-time data migration and relationships between accounts and customers into the new data structures, removing all the data elements that are to be removed per the amendment. (Such data migration will involve multiple rounds of testing and validation to ensure all data and relationships are migrated correctly.)
- Remove the original data and data sets from all environments that contained the Name, Address, and YOB fields.

All activities would comply with Plan Processor policies and procedures including Change Management, Software Development Life Cycle (SDLC), Testing, Security and Operations. The effort for these activities includes data analysis, product, engineering, test, security, operations and business operations staff. The \$4.5 to \$5.5 million estimate is based on the Proposed Amendment as proposed and would be reflected in a change request that would be subject to CAT LLC approval, if the amendment is approved.

Industry Member Implementation Costs. In addition, the Staff requested information regarding the costs that would be borne by Industry Members if the Proposed Amendment is approved. CAT LLC understands that Industry Members would need to update their systems in order to stop reporting Customer Names, Addresses, and YOBs to the CAT; however, CAT LLC is not in a position to quantify such Industry Member costs. The FIF letter acknowledges that “Industry [M]embers will require time to update their systems to cease reporting PII to CAIS,” but nevertheless “FIF members support the proposed amendments.”⁴⁵

C. Implementation

Based on discussions with the Staff, and in response to the FIF Letter, CAT LLC is providing more detailed information regarding how the Proposed Amendment would be implemented, if approved.

As a general matter, CAT LLC intends that any implementation schedule will be designed to allow the Plan Processor and Industry Members adequate time to finalize Technical Specifications and guidance, and to develop, test and implement the necessary changes to firm systems in order to comply with the Proposed Amendment. At a high level, subject to change based on discussions among the Participants, the Plan Processor, Industry Members, and the

⁴⁵

FIF Letter at 2-3.

Staff if the amendment is approved, the Plan Processor initially contemplates a phased implementation schedule to include the following key phases:

- Stop providing visibility to regulators of existing Names, Addresses, and YOBs in CAT—approximately 3 months from effective date;
- Continue to accept submissions from Industry Members that include Names, Addresses, and YOBs, but stop processing any such information in CAT (such Customer information would remain on the as-submitted file)—approximately 3 months;
- Reject any submissions from Industry Members that continue to include Names, Addresses, and YOBs (*i.e.*, Industry Members would be prohibited from reporting these fields to CAIS)—approximately 6 months or more depending on the amount of time required for Industry Members to update their reporting systems;
- Delete all existing Names, Addresses, and YOBs (as well as any other sensitive Customer data and information contemplated by the Proposed Amendment) from the CAT—approximately 9-12 months after the data migration is completed and verified; it will take approximately 2-3 months to permanently remove all the old data.

D. Additional Cost Savings Opportunities; Proposals to Retire CAIS

The FIF Letter notes that the 2025 budget includes approximately \$35.5 million in total CAIS-related costs, and proposes that transforming CAIS from a regulatory database to a process dedicated to creating CCIDs could potentially yield additional cost savings as well as significantly simplify the footprint and design of CAT without any degradation in regulatory use.⁴⁶ The NYSE Letter proposes that the CCID could be preserved either by keeping the CCID within the CAIS database or, alternatively, “CAIS could be eliminated in its entirety, provided that there is a transition period, where some form of CAIS persisted until an alternative effective and cost-efficient solution for CCIDs — or another unique customer identifier methodology — was implemented.”⁴⁷ Separately, Nasdaq and CBOE have petitioned the Commission to retire CAIS, noting that “[t]here are alternative solutions that would provide regulators with unique customer identifiers without requiring the collection of customer and account information.”⁴⁸

As currently designed, in addition to creating unique CCIDs, the CAT System implements the functionality that associates unique CCIDs with individual order events based on reported FDIDs.⁴⁹ This allows regulators the ability to identify a Customer’s market activity

⁴⁶ FIF Letter at 4-5.

⁴⁷ NYSE Letter at 2.

⁴⁸ Letter from John A. Zecca, Executive Vice President, Global Chief Legal, Risk & Regulatory Officer, Nasdaq J. Patrick Sexton, Executive Vice President, General Counsel & Corporate Secretary, CBOE, to Paul S. Atkins, Chairman, SEC, *Petition for Rulemaking and Exemptive Relief to Reduce the Costs of the Consolidated Audit Trail (CAT)* (Apr. 24, 2025), at 2, <https://www.sec.gov/files/rules/petitions/2025/petn4-853.pdf>.

⁴⁹ As described in the Exemption Order, the CAT NMS Plan originally adopted the “Customer Information Approach.” Under this approach, each Industry Member assigns a unique FDID to each Customer account, which must be reported on each new order submitted to the CAT, and separately reports account and Customer information to the CAT. The Plan Processor then associates specific Customers with individual order events based on the reported FDIDs.

across multiple exchanges, broker-dealers, and accounts, which was one of the critical innovations of the CAT. This approach was informed by significant discussion and was strongly supported by the industry.⁵⁰ Under the Proposed Amendment, the Reference Database would continue to facilitate the relationship mapping of unique CCIDs to FDIDs and would preserve the CCID enrichment of transaction data.

CAT LLC understands that there may be additional proposals to eliminate the Reference Database entirely, which will require further analysis. The Proposed Amendment was approved and continues to be supported by a two-thirds vote of all of the Participants, as required by Section 12.3 of the CAT NMS Plan. As always, CAT LLC will continue to evaluate additional cost savings measures and alternatives. However, in light of the desire of many constituencies—including Participants, Industry Members, and the Commission itself—to eliminate Names, Addresses, and YOBs from the CAT, and given that the Proposed Amendment ultimately is designed to build on the Commission’s own CCID Exemption Order, CAT LLC is hopeful that it can be considered and approved expeditiously.

* * * * *

Thank you for your attention to this matter. If you have any questions or comments, please contact me at branbecker@deloitte.com.

Respectfully submitted,

/s/ Brandon Becker

Brandon Becker
CAT NMS Plan Operating Committee Chair

cc: The Hon. Paul S. Atkins, Chair
The Hon. Hester M. Peirce, Commissioner
The Hon. Caroline A. Crenshaw, Commissioner
The Hon. Mark T. Uyeda, Commissioner
Mr. David Saltiel, Acting Director, Division of Trading and Markets
Mr. David Hsu, Assistant Director, Division of Trading and Markets
Ms. Erika Berg, Special Counsel, Division of Trading and Markets
CAT NMS Plan Participants

⁵⁰ See, e.g., Appendix C-9 of the CAT NMS Plan (“The Customer-ID approach is strongly supported by the industry as it believes that to do otherwise would interfere with existing business practices and risk leaking proprietary order and customer information into the market.”).

EXHIBIT A

Cumulative Proposed Revisions to CAT NMS Plan

Additions **underlined**; deletions **[bracketed]**

* * * * *

ARTICLE I

DEFINITIONS

...

Section 1.1. Definitions.

...

“**[Customer]Account Reference Data[Information]**” shall include, but not be limited to, **[account number,]account type, [customer type,]** date account opened, and large trader identifier (if applicable) **(excluding, for the avoidance of doubt, account number)**; except, however, that (a) in those circumstances in which an Industry Member has established a trading relationship with an institution but has not established an account with that institution, the Industry Member will (i) provide the Account Effective Date in lieu of the “date account opened”; **[(ii) provide the relationship identifier in lieu of the “account number”;** and (ii[i] identify the “account type” as a “relationship”; (b) in those circumstances in which the relevant account was established prior to the implementation date of the CAT NMS Plan applicable to the relevant CAT Reporter (as set forth in Rule 613(a)(3)(v) and (vi)), and no “date account opened” is available for the account, the Industry Member will provide the Account Effective Date in the following circumstances: (i) where an Industry Member changes back office providers or clearing firms and the date account opened is changed to the date the account was opened on the new back office/clearing firm system; (ii) where an Industry Member acquires another Industry Member and the date account opened is changed to the date the account was opened on the post-merger back office/clearing firm system; (iii) where there are multiple dates associated with an account in an Industry Member’s system, and the parameters of each date are determined by the individual Industry Member; and (iv) where the relevant account is an Industry Member proprietary account. **For the avoidance of doubt, Industry Members are required to provide a Firm Designated ID in accordance with this Agreement.**

...

“CCID Subsystem” means the subsystem of the Reference Database that exists solely to transform input TID values into CCID values.

...

“Customer-ID” or “CAT Customer-ID” or “CCID” has the same meaning provided in SEC Rule 613(j)(5).

“Customer Reference Data[Identifying Information]” means information **[of sufficient detail to identify attributed to a Customer, including, but not limited to, (a) with respect to individuals: [name, address, date of birth, individual tax payer identification number (“ITIN”)/social security number (“SSN”),] TID, customer type, and the individual’s role in the account (e.g., primary holder, joint holder, guardian, trustee, person with the power of attorney); and (b) with respect to legal entities: [name, address, customer type and [Employer Identification Number (“EIN”)/Legal Entity Identifier (“LEI”) or other comparable common entity identifier, if applicable; provided, however, that an Industry Member that has an LEI for a Customer must submit the Customer’s LEI] in addition to other information of sufficient detail to identify a Customer].**

...

“Full Availability and Regulatory Utilization of Transactional Database Functionality” means the point at which: (a) reporting to the Order Audit Trail System (“OATS”) is no longer required for new orders; (b) Industry Member reporting for equities transactions and simple electronic options transactions, excluding Customer Account Information,* Customer-ID, and Customer Identifying Information,* with sufficient intra-firm linkage, inter-firm linkage, national securities exchange linkage, trade reporting facilities linkage, and representative order linkages (including any equities allocation information provided in an Allocation Report) to permit the Participants and the Commission to analyze the full lifecycle of an order across the national market system, from order origination through order execution or order cancellation, is developed, tested, and implemented at a 5% Error Rate or less; (c) Industry Member reporting for manual options transactions and complex options transactions, excluding Customer Account Information, Customer-ID, and Customer Identifying Information, with all required linkages to permit the Participants and the Commission to analyze the full lifecycle of an order across the national market system, from order origination through order execution or order cancellation, including any options allocation information provided in an Allocation Report, is developed, tested, and fully implemented; (d) the query tool functionality required by Section 6.10(c)(i)(A) and Appendix D, Sections 8.1.1-8.1.3, Section 8.2.1, and Section 8.5 incorporates the data described in conditions (b)-(c) and is available to the Participants and to the Commission; and (e)

* **Effective [DATE], “Customer Account Information” as used in the Financial Accountability Milestones (Initial Industry Member Core Equity Reporting; Full Implementation of Core Equity Reporting; Full Availability and Regulatory Utilization of Transactional Database Functionality; and Full Implementation of CAT NMS Plan Requirements) is no longer a defined term and has been superseded by the new defined term “Account Reference Data”.**

* **Effective [DATE], “Customer Identifying Information” as used in the Financial Accountability Milestones (Initial Industry Member Core Equity Reporting; Full Implementation of Core Equity Reporting; Full Availability and Regulatory Utilization of Transactional Database Functionality; and Full Implementation of CAT NMS Plan Requirements) is no longer a defined term and has been superseded by the new defined term “Customer Reference Data”.**

the requirements of Section 6.10(a) are met. This Financial Accountability Milestone shall be considered complete as of the date identified in a Quarterly Progress Report meeting the requirements of Section 6.6(c).

...

["PII" means personally identifiable information, including a social security number or tax identifier number or similar information; Customer Identifying Information and Customer Account Information.]

...

"Reference Data" shall mean the data elements in Account Reference Data and Customer Reference Data.

"Reference Database" means the information system of the CAT containing Reference Data.

...

"Transformed Identifier" or "TID" means the transformed version of the input used to identify unique Customers, including, but not limited to individual tax payer identification number ("ITIN") or social security number ("SSN") submitted by Industry Members in place of an ITIN or SSN.

...

ARTICLE VI

FUNCTIONS AND ACTIVITIES OF CAT SYSTEM

...

Section 6.2. Chief Compliance Officer and Chief Information Security Officer

...

(a) Chief Compliance Officer.

...

(v) The Chief Compliance Officer shall:

...

(C) in collaboration with the Chief Information Security Officer, and consistent with Appendix D, Data Security, and any other applicable requirements related to data security[, **and Reference Data[Customer Account Information and Customer Identifying Information]**], identify and assist the Company in retaining an appropriately qualified independent auditor (based on specialized technical expertise, which may be the Independent Auditor or subject to the approval of the Operating Company by Supermajority Vote, another appropriately qualified independent auditor), and in collaboration with such independent auditor, create and implement an annual audit plan (subject to the approval of the Operating Committee), which shall at a minimum include a review of all Plan Processor policies, procedures and control structures, and real time tools that monitor and address data security issues for the Plan Processor and the Central Repository;

...

(b) Chief Information Security Officer.

...

(v) Consistent with Appendices C and D, the Chief Information Security Officer shall be responsible for creating and enforcing appropriate policies, procedures, and control structures to monitor and address data security issues for the Plan Processor and the Central Repository including:

...

(F) **[PII data requirements, including the standards set forth in Appendix D, PII Data Requirements] [Reserved]**;

...

Section 6.4. Data Reporting and Recording by Industry Members

...

(d) Required Industry Member Data.

...

(ii) Subject to Section 6.4(c) and Section 6.4(d)(iii) with respect to Options Market Makers, and consistent with Appendix D, Reporting and Linkage Requirements, and the Technical Specifications, each Participant shall, through its

Compliance Rule, require its Industry Members to record and report to the Central Repository the following, as applicable (“Received Industry Member Data” and collectively with the information referred to in Section 6.4(d)(i) “Industry Member Data”):

...

(C) for original receipt or origination of an order, the Firm Designated ID for the relevant Customer, and in accordance with Section 6.4(d)(iv), **Reference Data**[**Customer Account Information and Customer Identifying Information**] for the relevant Customer; and

...

Section 6.10. Surveillance

...

(c) Use of CAT Data by Regulators.

...

(ii) Extraction of CAT Data shall be consistent with all permission rights granted by the Plan Processor. All CAT Data returned shall be encrypted[, **and PII data shall be masked unless users have permission to view the CAT Data that has been requested**].

...

APPENDIX D

CAT NMS Plan Processor Requirements

...

4. Data Security

4.1 Overview

...

The Plan Processor must provide to the Operating Committee a comprehensive security plan that covers all components of the CAT System, including physical assets and personnel, and the training of all persons who have access to the Central Repository consistent with Article VI,

Section 6.1(m). The security plan must be updated annually. The security plan must include an overview of the Plan Processor's network security controls, processes and procedures pertaining to the CAT Systems. Details of the security plan must document how the Plan Processor will protect, monitor and patch the environment; assess it for vulnerabilities as part of a managed process, as well as the process for response to security incidents and reporting of such incidents. The security plan must address physical security controls for corporate, data center, and leased facilities where Central Repository data is transmitted or stored. The Plan Processor must have documented "hardening baselines" for systems that will store, process, or transmit CAT Data **[or PII data]**.

...

4.1.2 Data Encryption

All CAT Data must be encrypted at rest and in flight using industry standard best practices (e.g., SSL/TLS) including archival data storage methods such as tape backup. Symmetric key encryption must use a minimum key size of 128 bits or greater (e.g., AES-128), larger keys are preferable. Asymmetric key encryption (e.g., PGP) for exchanging data between Data Submitters and the Central Repository is desirable.

[Storage of unencrypted PII data is not permissible. PII encryption methodology must include a secure documented key management strategy such as the use of HSM(s). The Plan Processor must describe how PII encryption is performed and the key management strategy (e.g., AES-256, 3DES).]

If public cloud managed services are used that would inherently have access to the data (e.g., BigQuery, S3, Redshift), then the key management surrounding the encryption of that data must be documented (particularly whether the cloud provider manages the keys, or if the Plan Processor maintains that control). Auditing and real-time monitoring of the service for when cloud provider personnel are able to access/decrypt CAT Data must be documented, as well as a response plan to address instances where unauthorized access to CAT Data is detected. Key management/rotation/revocation strategies and key chain of custody must also be documented in detail.

...

4.1.4 Data Access

The Plan Processor must provide an overview of how access to **[PII and other]** CAT Data by Plan Processor employees and administrators is restricted. This overview must include items such as, but not limited to, how the Plan Processor will manage access to the systems, internal segmentation, multi-factor authentication, separation of duties, entitlement management, background checks, etc.

...

Any login to the system **[that is able to access PII data must follow non-PII password rules and]** must be **[further]** secured via multi-factor authentication (“MFA”). The implementation of MFA must be documented by the Plan Processor. MFA authentication capability for all logins is required to be implemented by the Plan Processor.

...

4.1.6 [PII Data Requirements] [Reserved]

[PII data must not be included in the result set(s) from online or direct query tools, reports or bulk data extraction. Instead, results will display existing non-PII unique identifiers (e.g., Customer-ID or Firm Designated ID). The PII corresponding to these identifiers can be gathered using the PII workflow described in Appendix D, Data Security, PII Data Requirements. By default, users entitled to query CAT Data are not authorized for PII access. The process by which someone becomes entitled for PII access, and how they then go about accessing PII data, must be documented by the Plan Processor. The chief regulatory officer, or other such designated officer or employee at each Participant must, at least annually, review and certify that people with PII access have the appropriate level of access for their role.]

Using the RBAC model described above, access to PII data shall be configured at the PII attribute level, following the “least privileged” practice of limiting access as much as possible.

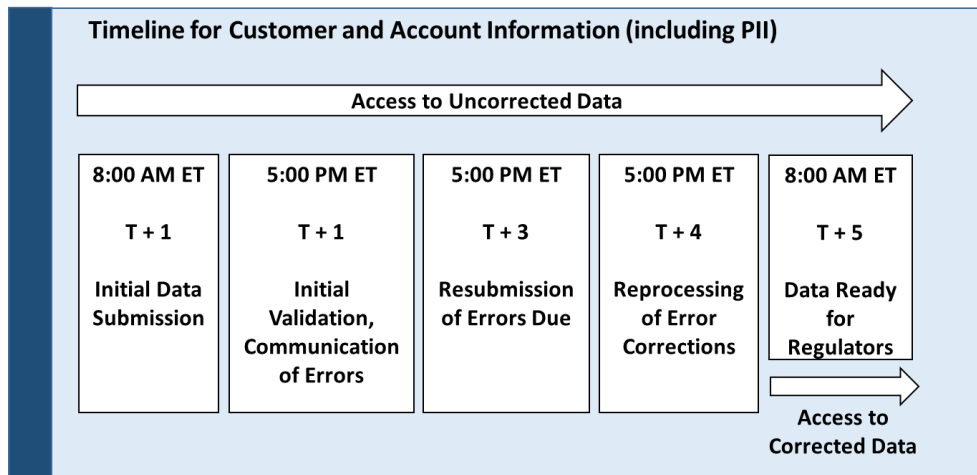
PII data must be stored separately from other CAT Data. It cannot be stored with the transactional CAT Data, and it must not be accessible from public internet connectivity. A full audit trail of PII access (who accessed what data, and when) must be maintained. The Chief Compliance Officer and the Chief Information Security Officer shall have access to daily PII reports that list all users who are entitled for PII access, as well as the audit trail of all PII access that has occurred for the day being reported on.]

...

6.2 Data Availability Requirements

...

Figure B: [Customer and Account Information (Including PII)] Reference Data



{changes to the title of the chart: Timeline for Reference Data[Customer and Account Information (including PII)]}

CAT [PII]Reference Data data must be processed within established timeframes to ensure data can be made available to Participants' regulatory staff and the SEC in a timely manner. Industry Members submitting new or modified Customer information must provide it to the Central Repository no later than 8:00 a.m. Eastern Time on T+1. The Central Repository must validate the data and generate error reports no later than 5:00 p.m. Eastern Time on T+1. The Central Repository must process the resubmitted data no later than 5:00 p.m. Eastern Time on T+4. Corrected data must be resubmitted no later than 5:00 p.m. Eastern Time on T+3. The Central Repository must process the resubmitted data no later than 5:00 p.m. Eastern Time on T+4. Corrected data must be available to regulators no later than 8:00 a.m. Eastern Time on T+5.

[Customer information that includes PII]Reference [d]Data must be available to regulators immediately upon receipt of initial data and corrected data, pursuant to security policies for retrieving [PII]Reference Data.

...

8. Functionality of the CAT System

8.1 Regulator Access

...

8.1.1 Online Targeted Query Tool

...

The tool must provide a record count of the result set, the date and time the query request is submitted, and the date and time the result set is provided to the users. In addition, the tool must indicate in the search results whether the retrieved data was linked or unlinked (e.g., using a flag). **[In addition, the online targeted query tool must not display any PII data. Instead, it will display existing non-PII unique identifiers (e.g., Customer-ID or Firm Designated ID). The PII corresponding to these identifiers can be gathered using the PII workflow described in Appendix D, Data Security, PII Data Requirements.]** The Plan Processor must define the maximum number of records that can be viewed in the online tool as well as the maximum number of records that can be downloaded. Users must have the ability to download the results to .csv, .txt, and other formats, as applicable. These files will also need to be available in a compressed format (e.g., .zip, .gz). Result sets that exceed the maximum viewable or download limits must return to users a message informing them of the size of the result set and the option to choose to have the result set returned via an alternate method.

...

8.1.3 Online Targeted Query Tool Access and Administration

Access to CAT Data is limited to authorized regulatory users from the Participants and the SEC. Authorized regulators from the Participants and the SEC may access all CAT Data[, **with the exception of PII data. A subset of the authorized regulators from the Participants and the SEC will have permission to access and view PII data**]. The Plan Processor must work with the Participants and SEC to implement an administrative and authorization process to provide regulator access. The Plan Processor must have procedures and a process in place to verify the list of active users on a regular basis.

A two-factor authentication is required for access to CAT Data. **[PII data must not be available via the online targeted query tool or the user-defined direct query interface.]**

8.2 User-Defined Direct Queries and Bulk Extraction of Data

The Central Repository must provide for direct queries, bulk extraction, and download of data for all regulatory users. Both the user-defined direct queries and bulk extracts will be used by regulators to deliver large sets of data that can then be used in internal surveillance or market analysis applications. The data extracts must use common industry formats.

[Direct queries must not return or display PII data. Instead, they will return existing non-PII unique identifiers (e.g., Customer-ID or Firm Designated ID). The PII corresponding to these identifiers can be gathered using the PII workflow described in Appendix D, Data Security, PII Data Requirements.]

...

8.2.2 Bulk Extract Performance Requirements

...

Extraction of data must be consistently in line with all permissioning rights granted by the Plan Processor. Data returned must be encrypted, password protected and sent via secure methods of transmission. **[In addition, PII data must be masked unless users have permission to view the data that has been requested.]**

...

9. CAT Reference Data[Customer and Customer Account Information]

9.1 [Customer and Customer Account Information]Reference Data Storage

The CAT must capture and store **Reference Data[Customer and Customer Account Information]** in a secure database physically separated from the transactional database. The Plan Processor will maintain **certain** information **[of sufficient detail to uniquely and consistently identify] attributed to** each Customer across all CAT Reporters, and associated accounts from each CAT Reporter. **[The following attributes, a]At a minimum, the CAT must capture Transformed Identifiers.[be captured:]**

- **[Social security number (SSN) or Individual Taxpayer Identification Number (ITIN);]**
- **[Date of birth;]**
- **[Current name;]**
- **[Current address;]**
- **[Previous name; and]**
- **[Previous address.]**

For legal entities, the CAT must capture **Legal Entity Identifiers (LEIs) (if available).****[the following attributes:]**

- **[Legal Entity Identifier (LEI) (if available);]**
- **[Tax identifier;]**
- **[Full legal name; and]**
- **[Address.]**

The Plan Processor must maintain valid **Reference Data**[**Customer and Customer Account Information**] for each trading day and provide a method for Participants' regulatory staff and the SEC to easily obtain historical changes to that information[(**e.g., name changes, address changes, etc.**)].

[The Plan Processor will design and implement a robust data validation process for submitted Firm Designated ID, Customer Account Information and Customer Identifying Information, and must continue to process orders while investigating Customer information mismatches. Validations should:

- **Confirm the number of digits on a SSN,**
- **Confirm date of birth, and**
- **Accommodate the situation where a single SSN is used by more than one individual.]**

The Plan Processor will use the [**Customer information**] **Transformed Identifier** submitted by all broker-dealer CAT Reporters to **the CCID Subsystem to** assign a unique Customer-ID for each Customer. The Customer-ID must be consistent across all broker-dealers that have an account associated with that Customer. This unique CAT-Customer-ID will not be returned to CAT Reporters and will only be used internally by the CAT.

Broker-Dealers will initially submit full account lists for all active accounts to the Plan Processor and subsequently submit updates and changes on a daily basis. In addition, the Plan Processor must have a process to periodically receive full account lists to ensure the completeness and accuracy of the account database. The Central Repository must support account structures that have multiple account owners and associated Customer information (joint accounts, managed accounts, etc.), and must be able to link accounts that move from one CAT Reporter to another (e.g., due to mergers and acquisitions, divestitures, etc.).

...

9.2 Required Data Attributes for Customer Information Data Submitted by Industry Members

At a minimum, the following Customer information data attributes must be accepted by the Central Repository:

- **[Account Owner Name;]**
- **[Account Owner Mailing Address;]**
- **[Account Tax Identifier (SSN, TIN, ITN)] Transformed Identifier;**

- Market Identifiers (Larger Trader ID, LEI);
- Type of Account;
- Firm **[Identifier Number] Designated ID**;
 - The number that the CAT Reporter will supply on all orders generated for the Account;
- Prime Broker ID;
- Bank Depository ID; and
- Clearing Broker.

...

9.3 Customer-ID Tracking

The Plan Processor will assign a CAT-Customer-ID for each unique Customer. The Plan Processor will **[determine] generate and assign** a unique **CAT-Customer-ID** **[using information such as SSN and DOB for natural persons or entity identifiers for Customers that are not natural persons and will resolve discrepancies] for each Transformed Identifier submitted by broker-dealer CAT Reporters to the CCID Subsystem**. Once a CAT-Customer-ID is assigned, it will be added to each linked (or unlinked) order record for that Customer.

Participants and the SEC must be able to use the unique CAT-Customer-ID to track orders from any Customer or group of Customers, regardless of what brokerage account was used to enter the order.

...

9.4 Error Resolution for Customer Data

[The Plan Processor must design and implement procedures and mechanisms to handle both minor and material inconsistencies in Customer information. The Central Repository needs to be able to accommodate minor data discrepancies such as variations in road name abbreviations in searches. Material inconsistencies such as two different people with the same SSN must be communicated to the submitting CAT Reporters and resolved within the established error correction timeframe as detailed in Section 8.]

The Central Repository must have an audit trail showing the resolution of all errors. The audit trail must, at a minimum, include the:

- CAT Reporter submitting the data;
- Initial submission date and time;
- Data in question or the ID of the record in question;
- Reason identified as the source of the issue[, **such as:**];
 - **[duplicate SSN, significantly different Name;]**
 - **[duplicate SSN, different DOB;]**
 - **[discrepancies in LTID; or]**
 - **[others as determined by the Plan Processor;]**
- Date and time the issue was transmitted to the CAT Reporter, included each time the issue was re-transmitted, if more than once;
- Corrected submission date and time, including each corrected submission if more than one, or the record ID(s) of the corrected data or a flag indicating that the issue was resolved and corrected data was not required; and
- Corrected data, the record ID, or a link to the corrected data.

...

9.5 Deletion from CAIS of Certain Reported Customer Data

Notwithstanding any other provision of the CAT NMS Plan, this Appendix D, or the Exchange Act, CAT LLC shall direct the Plan Processor to develop and implement a mechanism to delete from CAIS, or otherwise make inaccessible to regulatory users, the following data attributes: Customer name, Customer address, account name, account address, authorized trader names list, account number, day of birth, month of birth, year of birth, and ITIN/SSN. For the avoidance of doubt, such data attributes do not constitute records that must be retained under Exchange Act Rule 17a-1. CAT LLC or the Plan Processor shall be permitted to delete any such information that has been improperly reported by an Industry Member to the extent that either becomes aware of such improper reporting through self-reporting or otherwise.

...

10. User Support

10.1 CAT Reporter Support

...

The Plan Processor must develop tools to allow each CAT Reporter to:

. . .

- Manage **Reference Data**[Customer and Customer Account Information];

. . .

10.3 CAT Help Desk

. . .

CAT Help Desk support functions must include:

. . .

- Supporting CAT Reporters with data submissions and data corrections, including submission of **Reference Data**[Customer and Customer Account Information];

* * * * *

EXHIBIT B

Proposed Additional Revisions to Changes in Proposed Amendment

Additions **underlined**; deletions **[bracketed]**

* * * * *

ARTICLE I

DEFINITIONS

...

Section 1.1. Definitions.

...

“**Account Reference Data****[Attributes]**” shall include, but not be limited to, account type, **[customer type,]** date account opened, and large trader identifier (if applicable) (excluding, for the avoidance of doubt, account number); except, however, that (a) in those circumstances in which an Industry Member has established a trading relationship with an institution but has not established an account with that institution, the Industry Member will (i) provide the Account Effective Date in lieu of the ‘date account opened’; and (ii) identify the ‘account type’ as a ‘relationship’; (b) in those circumstances in which the relevant account was established prior to the implementation date of the CAT NMS Plan applicable to the relevant CAT Reporter (as set forth in Rule 613(a)(3)(v) and (vi)), and no ‘date account opened’ is available for the account, the Industry Member will provide the Account Effective Date in the following circumstances: (i) where an Industry Member changes back office providers or clearing firms and the date account opened is changed to the date the account was opened on the new back office/clearing firm system; (ii) where an Industry Member acquires another Industry Member and the date account opened is changed to the date the account was opened on the post-merger back office/clearing firm system; (iii) where there are multiple dates associated with an account in an Industry Member’s system, and the parameters of each date are determined by the individual Industry Member; and (iv) where the relevant account is an Industry Member proprietary account. For the avoidance of doubt, Industry Members are required to provide a Firm Designated ID in accordance with this Agreement.

...

“**CCID Subsystem**” means the **[isolated]** subsystem of **the Reference Database****[CAIS]** that exists solely to transform input TID values into CCID values.

...

“**Customer Reference Data[Attributes]**” means information attributed to a Customer, including, but not limited to, (a) with respect to individuals: TID, **customer type**, and the individual’s role in the account (e.g., primary holder, joint holder, guardian, trustee, person with the power of attorney); and (b) with respect to legal entities: **customer type and [Employer Identification Number (“EIN”)]**Legal Entity Identifier (“LEI”) or other comparable common entity identifier, if applicable; provided, however, that an Industry Member that has an LEI for a Customer must submit the Customer’s LEI.

...

“**Full Availability and Regulatory Utilization of Transactional Database Functionality**” means the point at which: (a) reporting to the Order Audit Trail System (“OATS”) is no longer required for new orders; (b) Industry Member reporting for equities transactions and simple electronic options transactions, excluding Customer Account Information,* Customer-ID, and Customer Identifying Information,* with sufficient intra-firm linkage, inter-firm linkage, national securities exchange linkage, trade reporting facilities linkage, and representative order linkages (including any equities allocation information provided in an Allocation Report) to permit the Participants and the Commission to analyze the full lifecycle of an order across the national market system, from order origination through order execution or order cancellation, is developed, tested, and implemented at a 5% Error Rate or less; (c) Industry Member reporting for manual options transactions and complex options transactions, excluding Customer Account Information, Customer-ID, and Customer Identifying Information, with all required linkages to permit the Participants and the Commission to analyze the full lifecycle of an order across the national market system, from order origination through order execution or order cancellation, including any options allocation information provided in an Allocation Report, is developed, tested, and fully implemented; (d) the query tool functionality required by Section 6.10(c)(i)(A) and Appendix D, Sections 8.1.1-8.1.3, Section 8.2.1, and Section 8.5 incorporates the data described in conditions (b)-(c) and is available to the Participants and to the Commission; and (e) the requirements of Section 6.10(a) are met. This Financial Accountability Milestone shall be considered complete as of the date identified in a Quarterly Progress Report meeting the requirements of Section 6.6(c).

...

* Effective [DATE], “Customer Account Information” as used in the Financial Accountability Milestones (Initial Industry Member Core Equity Reporting; Full Implementation of Core Equity Reporting; Full Availability and Regulatory Utilization of Transactional Database Functionality; and Full Implementation of CAT NMS Plan Requirements) is no longer a defined term and has been superseded by the new defined term “Account **Reference Data[Attributes]**”.

* Effective [DATE], “Customer Identifying Information” as used in the Financial Accountability Milestones (Initial Industry Member Core Equity Reporting; Full Implementation of Core Equity Reporting; Full Availability and Regulatory Utilization of Transactional Database Functionality; and Full Implementation of CAT NMS Plan Requirements) is no longer a defined term and has been superseded by the new defined term “Customer **Reference Data[Attributes]**”.

“**Reference Data[Customer and Account Attributes]**” shall mean the data elements in Account **Reference Data[Attributes]** and Customer **Reference Data[Attributes]**.

“**Reference Database[CAIS]**” means the [customer and account]information system of the CAT **containing Reference Data**.

...

“**Transformed Identifier**” or “**TID**” means the transformed version of the **input used to identify unique Customers, including, but not limited to** individual tax payer identification number (“ITIN”) or social security number (“SSN”) submitted by Industry Members in place of an ITIN or SSN.

...

ARTICLE VI

FUNCTIONS AND ACTIVITIES OF CAT SYSTEM

...

Section 6.2. Chief Compliance Officer and Chief Information Security Officer

...

(a) **Chief Compliance Officer**.

...

(v) The Chief Compliance Officer shall:

...

(C) in collaboration with the Chief Information Security Officer, and consistent with Appendix D, Data Security, and any other applicable requirements related to data security and **Reference Data[Customer and Account Attributes]**, identify and assist the Company in retaining an appropriately qualified independent auditor (based on specialized technical expertise, which may be the Independent Auditor or subject to the approval of the Operating Company by Supermajority Vote, another appropriately qualified independent auditor), and in collaboration with such independent auditor, create and implement an annual audit plan (subject to the approval of the Operating Committee), which shall at a minimum include a review of all Plan Processor policies, procedures and control structures, and real time tools that monitor and

address data security issues for the Plan Processor and the Central Repository;

...

(b) Chief Information Security Officer.

...

(v) Consistent with Appendices C and D, the Chief Information Security Officer shall be responsible for creating and enforcing appropriate policies, procedures, and control structures to monitor and address data security issues for the Plan Processor and the Central Repository including:

...

(F) **[Customer and Account Attributes data requirements, including the standards set forth in Appendix D, Customer and Account Attributes Data Requirements] [Reserved];**

...

Section 6.4. Data Reporting and Recording by Industry Members

...

(d) Required Industry Member Data.

...

(ii) Subject to Section 6.4(c) and Section 6.4(d)(iii) with respect to Options Market Makers, and consistent with Appendix D, Reporting and Linkage Requirements, and the Technical Specifications, each Participant shall, through its Compliance Rule, require its Industry Members to record and report to the Central Repository the following, as applicable (“Received Industry Member Data” and collectively with the information referred to in Section 6.4(d)(i) “Industry Member Data”):

...

(C) for original receipt or origination of an order, the Firm Designated ID for the relevant Customer, and in accordance with Section 6.4(d)(iv), **Reference Data****[Customer and Account Attributes]** for the relevant Customer; and

...

Section 6.10. Surveillance

...

(c) Use of CAT Data by Regulators.

...

(ii) Extraction of CAT Data shall be consistent with all permission rights granted by the Plan Processor. All CAT Data returned shall be encrypted[, and **Customer and Account Attributes data shall be masked unless users have permission to view the CAT Data that has been requested**].

...

APPENDIX D

CAT NMS Plan Processor Requirements

...

4. Data Security

4.1 Overview

...

The Plan Processor must provide to the Operating Committee a comprehensive security plan that covers all components of the CAT System, including physical assets and personnel, and the training of all persons who have access to the Central Repository consistent with Article VI, Section 6.1(m). The security plan must be updated annually. The security plan must include an overview of the Plan Processor's network security controls, processes and procedures pertaining to the CAT Systems. Details of the security plan must document how the Plan Processor will protect, monitor and patch the environment; assess it for vulnerabilities as part of a managed process, as well as the process for response to security incidents and reporting of such incidents. The security plan must address physical security controls for corporate, data center, and leased facilities where Central Repository data is transmitted or stored. The Plan Processor must have documented "hardening baselines" for systems that will store, process, or transmit CAT Data[**or Customer and Account Attributes data**].

...

4.1.2 Data Encryption

All CAT Data must be encrypted at rest and in flight using industry standard best practices (e.g., SSL/TLS) including archival data storage methods such as tape backup. Symmetric key encryption must use a minimum key size of 128 bits or greater (e.g., AES-128), larger keys are preferable. Asymmetric key encryption (e.g., PGP) for exchanging data between Data Submitters and the Central Repository is desirable.

[Storage of unencrypted Customer and Account Attributes data is not permissible. Customer and Account Attributes encryption methodology must include a secure documented key management strategy such as the use of HSM(s). The Plan Processor must describe how Customer and Account Attributes encryption is performed and the key management strategy (e.g., AES-256, 3DES).]

If public cloud managed services are used that would inherently have access to the data (e.g., BigQuery, S3, Redshift), then the key management surrounding the encryption of that data must be documented (particularly whether the cloud provider manages the keys, or if the Plan Processor maintains that control). Auditing and real-time monitoring of the service for when cloud provider personnel are able to access/decrypt CAT Data must be documented, as well as a response plan to address instances where unauthorized access to CAT Data is detected. Key management/rotation/revocation strategies and key chain of custody must also be documented in detail.

...

4.1.4 Data Access

The Plan Processor must provide an overview of how access to **[Customer and Account Attributes and other]**CAT Data by Plan Processor employees and administrators is restricted. This overview must include items such as, but not limited to, how the Plan Processor will manage access to the systems, internal segmentation, multi-factor authentication, separation of duties, entitlement management, background checks, etc.

...

Any login to the system **[that is able to access Customer and Account Attributes data must follow password rules for data that does not constitute Customer and Account Attributes and]**must be **[further]**secured via multi-factor authentication (“MFA”). The implementation of MFA must be documented by the Plan Processor. MFA authentication capability for all logins is required to be implemented by the Plan Processor.

...

4.1.6 [Customer and Account Attributes Data Requirements] [Reserved]

[Customer and Account Attributes data must not be included in the result set(s) from online or direct query tools, reports or bulk data extraction. Instead, results will display existing unique identifiers (e.g., Customer-ID or Firm Designated ID) that do not constitute Customer and Account Attributes. The Customer and Account Attributes corresponding to these identifiers can be gathered using the Customer and Account Attributes workflow described in Appendix D, Data Security, Customer and Account Attributes Data Requirements. By default, users entitled to query CAT Data are not authorized for access to Customer and Account Attributes. The process by which someone becomes entitled for access to Customer and Account Attributes, and how they then go about accessing Customer and Account Attributes data, must be documented by the Plan Processor. The chief regulatory officer, or other such designated officer or employee at each Participant must, at least annually, review and certify that people with access to Customer and Account Attributes have the appropriate level of access for their role.

Using the RBAC model described above, access to Customer and Account Attributes data shall be configured at the Customer and Account Attribute level, following the “least privileged” practice of limiting access as much as possible.

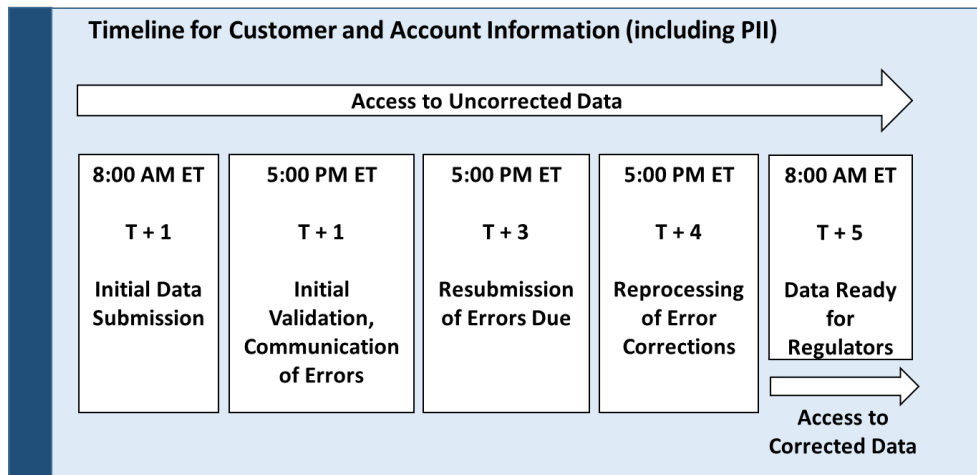
Customer and Account Attributes data must be stored separately from other CAT Data. It cannot be stored with the transactional CAT Data, and it must not be accessible from public internet connectivity. A full audit trail of access to Customer and Account Attributes (who accessed what data, and when) must be maintained. The Chief Compliance Officer and the Chief Information Security Officer shall have access to daily Customer and Account Attributes reports that list all users who are entitled for access to Customer and Account Attributes, as well as the audit trail of all access to Customer and Account Attributes that has occurred for the day being reported on.]

...

6.2 Data Availability Requirements

...

Figure B: Reference Data[Customer and Account Attributes]



{changes to the title of the chart: Timeline for Reference Data[Customer and Account Attributes]}

CAT Reference Data[Customer and Account Attributes] data must be processed within established timeframes to ensure data can be made available to Participants' regulatory staff and the SEC in a timely manner. Industry Members submitting new or modified Customer information must provide it to the Central Repository no later than 8:00 a.m. Eastern Time on T+1. The Central Repository must validate the data and generate error reports no later than 5:00 p.m. Eastern Time on T+1. The Central Repository must process the resubmitted data no later than 5:00 p.m. Eastern Time on T+4. Corrected data must be resubmitted no later than 5:00 p.m. Eastern Time on T+3. The Central Repository must process the resubmitted data no later than 5:00 p.m. Eastern Time on T+4. Corrected data must be available to regulators no later than 8:00 a.m. Eastern Time on T+5.

Reference Data[Customer information that includes Customer and Account Attributes] data must be available to regulators immediately upon receipt of initial data and corrected data, pursuant to security policies for retrieving Reference Data[Customer and Account Attributes].

...

8. Functionality of the CAT System

8.1 Regulator Access

...

8.1.1 Online Targeted Query Tool

...

The tool must provide a record count of the result set, the date and time the query request is submitted, and the date and time the result set is provided to the users. In addition, the tool must indicate in the search results whether the retrieved data was linked or unlinked (e.g., using a flag). **[In addition, the online targeted query tool must not display any Customer and Account Attributes data. Instead, it will display existing unique identifiers (e.g., Customer-ID or Firm Designated ID) that do not constitute Customer and Account Attributes. The Customer and Account Attributes corresponding to these identifiers can be gathered using the Customer and Account Attributes workflow described in Appendix D, Data Security, Customer and Account Attributes Data Requirements.]** The Plan Processor must define the maximum number of records that can be viewed in the online tool as well as the maximum number of records that can be downloaded. Users must have the ability to download the results to .csv, .txt, and other formats, as applicable. These files will also need to be available in a compressed format (e.g., .zip, .gz). Result sets that exceed the maximum viewable or download limits must return to users a message informing them of the size of the result set and the option to choose to have the result set returned via an alternate method.

...

8.1.3 Online Targeted Query Tool Access and Administration

Access to CAT Data is limited to authorized regulatory users from the Participants and the SEC. Authorized regulators from the Participants and the SEC may access all CAT Data[, **with the exception of Customer and Account Attributes data. A subset of the authorized regulators from the Participants and the SEC will have permission to access and view Customer and Account Attributes data**]. The Plan Processor must work with the Participants and SEC to implement an administrative and authorization process to provide regulator access. The Plan Processor must have procedures and a process in place to verify the list of active users on a regular basis.

A two-factor authentication is required for access to CAT Data. **[Customer and Account Attributes data must not be available via the online targeted query tool or the user-defined direct query interface.]**

8.2 User-Defined Direct Queries and Bulk Extraction of Data

The Central Repository must provide for direct queries, bulk extraction, and download of data for all regulatory users. Both the user-defined direct queries and bulk extracts will be used by regulators to deliver large sets of data that can then be used in internal surveillance or market analysis applications. The data extracts must use common industry formats.

[Direct queries must not return or display Customer and Account Attributes data. Instead, they will return existing unique identifiers (e.g., Customer-ID or Firm Designated ID) that do not constitute Customer and Account Attributes. The Customer and Account Attributes corresponding to these identifiers can be gathered using the Customer and

Account Attributes workflow described in Appendix D, Data Security, Customer and Account Attributes Data Requirements.]

...

8.2.2 Bulk Extract Performance Requirements

...

Extraction of data must be consistently in line with all permissioning rights granted by the Plan Processor. Data returned must be encrypted, password protected and sent via secure methods of transmission. **[In addition, Customer and Account Attributes data must be masked unless users have permission to view the data that has been requested.]**

...

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9.1 [Customer and Account Attributes]Reference Data Storage

The CAT must capture and store Reference Data[Customer and Account Attributes] in a secure database physically separated from the transactional database. The Plan Processor will maintain certain information attributed to each Customer across all CAT Reporters, and associated accounts from each CAT Reporter. At a minimum, the CAT must capture Transformed Identifiers.

For legal entities, the CAT must capture Legal Entity Identifiers (LEIs) (if available).

The Plan Processor must maintain valid Reference Data[Customer and Account Attributes] for each trading day and provide a method for Participants' regulatory staff and the SEC to easily obtain historical changes to that information.

The Plan Processor will use the Transformed Identifier submitted by all broker-dealer CAT Reporters to the **[isolated]** CCID Subsystem to assign a unique Customer-ID for each Customer. The Customer-ID must be consistent across all broker-dealers that have an account associated with that Customer. This unique CAT-Customer-ID will not be returned to CAT Reporters and will only be used internally by the CAT.

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...

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At a minimum, the following Customer information data attributes must be accepted by the Central Repository:

- Transformed Identifier[**(with respect to individuals) or EIN (with respect to legal entities)**];
- Market Identifiers (Larger Trader ID, LEI);
- Type of Account;
- Firm [**Identifier Number**]**Designated ID**;
 - The number that the CAT Reporter will supply on all orders generated for the Account;
- Prime Broker ID;
- Bank Depository ID; and
- Clearing Broker.

...

9.3 Customer-ID Tracking

The Plan Processor will assign a CAT-Customer-ID for each unique Customer. The Plan Processor will generate and assign a unique CAT-Customer-ID for each Transformed Identifier submitted by broker-dealer CAT Reporters to the **[isolated]** CCID Subsystem. Once a CAT-Customer-ID is assigned, it will be added to each linked (or unlinked) order record for that Customer.

Participants and the SEC must be able to use the unique CAT-Customer-ID to track orders from any Customer or group of Customers, regardless of what brokerage account was used to enter the order.

...

10. User Support

10.1 CAT Reporter Support

...

The Plan Processor must develop tools to allow each CAT Reporter to:

...

- Manage **Reference Data**[Customer and Account Attributes];

...

10.3 CAT Help Desk

...

CAT Help Desk support functions must include:

...

- Supporting CAT Reporters with data submissions and data corrections, including submission of **Reference Data**[Customer and Account Attributes];

* * * * *

EXHIBIT C

Proposed Changes to CAIS Technical Specifications

Fields Currently Anticipated To Be Eliminated

<i>FDID Records</i>	<i>Natural Person Customer Records</i>	<i>Legal Entity Customer Records</i>
accountName	firstName	legalName
authTraderNamesList	middleName	addressList
authTraderName	lastName	addrType
authTraderNameID	nameSuffix	addrLine1
addressList	doingBusinessAs	addrLine2
addrType	yearOfBirth	addrLine3
addrLine1	addressList	addrLine4
addrLine2	addrType	city
addrLine3	addrLine1	regionCode
addrLine4	addrLine2	countryCode
city	addrLine3	postalCode
regionCode	addrLine4	ein
countryCode	city	updateNotification
postalCode	regionCode	
	countryCode	
	postalCode	
	updateNotification	

Fields Currently Anticipated To Be Retained

<i>FDID Records</i>	<i>Natural Person Customer Records</i>	<i>Legal Entity Customer Records</i>
fdidRecordList	naturalPersonCustomerList	legalEntityCustomerList
fdidRecordID	customerRecordID	customerRecordID
fdidCustomerList	customerType	customerType
customerRecordID		
firmDesignatedID		lei
fdidType		
accountType		
fdidDate		
role		
roleStartDate		
DVPCustodianID		
clearingBrokerID		
branchOfficeCRD		
fdidEndDate		
fdidEndReason		
replacedByFDID		
priorCATReporterCRD		
priorCATReporterFDID		
largeTraderList		
largeTraderRecordID		
largeTraderID		
ltidEffectiveDate		
ltidEndDate		
ltidEndReason		
roleEndDate		
roleEndReason		
registeredRepCRD		