

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

Presented by the CAT NMS, LLC Operating Committee



November 14, 2018

Agenda

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Equity Securities in Scope

- All NMS Stocks
- OTC Equity Securities

Any equity security, other than an NMS Security, subject to prompt last sale reporting rules of a registered national securities association and reported to one of such association's equity trade reporting facilities.

Restricted securities (as defined by SEC Rule 144(a)(3)) are not reportable to CAT because they are not subject to prompt last sale reporting rules.

SRO Proposed Scope of Each Equities Phase (2a and 2c)

Phase 2a – Equities Part 1 Go Live – 11/15/2019	Phase 2c – Equities Part 2 Go Live – 9/1/2020
All events and scenarios covered by OATS	Linkages to the customer order(s) being represented for all representative order scenarios including agency average price, net trading, aggregated orders, OMS-EMS scenarios
All proprietary orders including market maker orders	Sub-account allocations
Firm Designated ID (mandatory by end of regulatory conformance period)	Rejected External Routes with flag indicating route was not accepted by receiving destination
All street side representative orders (both agency and proprietary)	Internal Route modifications and cancels
Linkage is required between the representative street side order and the order being represented when the representative order was originated specifically to represent a <u>single</u> order (received either from a customer or another broker-dealer) and there is: 1) an existing direct electronic link in the firm’s system between the order being represented and the representative order, and 2) any resulting executions are immediately and automatically applied to the represented order in the firm’s system	Unlisted quotes <u>sent</u> to an IDQS operated by a CAT Reporter
Electronic listed quotes (NMS stocks) *assumes exemptive relief request for verbal quotes	Revisit application of OATS guidance to CAT for firm modifications to previously routed orders (OATS FAQ C35) *subject to Event Type Decision
Unlisted quotes (OTC Equity Securities) <u>received</u> by a broker-dealer operating an inter-dealer quotation system (e.g., Global OTC, OTC Link) *see above comment on verbal quotes	
Unlisted quotes that meet the definition of bid or offer under the Plan sent by a broker-dealer to a quotation venue not operated by an SRO or broker-dealer *see above comment on verbal quotes	
Electronic capture time for manual orders	
Special Handling instructions on Route Reports (limited to a defined set of values)	
OATS guidance regarding firm modifications to previously routed orders (OATS FAQ C35) applies to CAT *subject to Event Type Decision	

Phase 2a Highlights

All OATS Scope

- All scenarios included in the current OATS reporting
- Includes equity legs of complex orders
- This is required to retire OATS

All Proprietary Orders

- All market making orders
- All orders originated by proprietary trading firms
- All Representative Orders (e.g., street side of RP)

Firm Designated ID (“FDID”)

The FDID represents the account number of the customer account for which the order was placed or the entity ID for institutional clients in certain scenarios.

For proprietary or other firm accounts, the FDID represents the account number of the specific firm account.

- In Phase 2a, the FDID will be used to track the activity of a single account within a single BD. When the Customer and Account phase is implemented, the FDID will be used to obtain the CAT Customer ID so that the activity of a single customer can be tracked across CAT Reporters.
- FDIDs must be unique and persistent so that a single account within a BD may be tracked across time.
- Firms using multiple vendors for CAT reporting must ensure the same FDID is used for the same account across vendors.

FDIDs are optional until the end of the Conformance Period (February 24, 2020) at which time they become mandatory.

Representative Orders

In Phase 2a, all Representatives Orders are required to be reported to CAT and marked as such with limited exceptions (e.g. guaranteed pricing scenarios).

Representatives Orders must be marked with a Representative Order Flag that indicates whether a linkage is present or not.

Allowed values for this field include:

- **Y** – Representative order, linkage required
- **YS** – Representative order, linkage required; details in supplement event
- **YF** – Representative order, linkage required in future phase
- **YP** – Representative order, pricing guarantee, linkage not required
- **N** – Not a representative order

Order Fulfillment Events for Orders Filled from a Representative Order

When a client order is filled from a Representative Order, an Order Fulfillment event must be reported.

The Order Fulfillment event is a two sided event designed to capture the customer/client details and the firm side details, which reflect the Representative Order details for the order used to execute the customer/client order. In Phase 2a, not all scenarios require the firm side details to be populated.

The field fulfillmentLinkType is used to indicate if the Industry Member (firm) side details are required. Below are the values allowed:

- **Y** – Representative Order; linkage required
- **YF** – Representative Order; linkage required in future phase
- **YP** – Fill from pre-existing Principal order; linkage required
- **FOR** – No linkage required; Fulfillment on an order routed to a foreign destination

Representative Order Linkages (1/2)

In Phase 2a, linkage is required between the representative street side order and the order being represented when the representative order was originated specifically to represent a single order (received from a customer or another broker-dealer) and there is:

- a) an existing direct electronic link in the Industry Member's system between the order being represented and the Representative Order, and
- a) any resulting executions are immediately and automatically applied to the represented order in the Industry Member's system

Linkages are required between the customer/clients order and the Representative Order for both executed and unexecuted orders. Executed orders must also have a link between the Order Fulfillment Event for the customer/client order and the Representative Order from which the fill came.

Representative Order Linkages (2/2)

At the Order Level

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

At the Order Fulfillment Level

- `orderID` contains the firm side order that was used to fill the customer order
- `fulfillmentLinkType` indicates whether there is order level and trade level linkage, only trade level linkage (e.g., fill from the pre-existing customer order), or why the firm side details are not present

Equity Quote Reporting

The following quotations must be reported in 2a:

- Quotes in NMS Stocks sent to an exchange or the ADF
- Quotes in OTC Equity Securities received by an Industry Member CAT Reporter operating an inter-dealer quotation system
- Quotes in OTC Equity Securities that meet the definition of bid or offer under the CAT NMS Plan sent by a broker-dealer to a quotation venue not operated by a CAT Reporter

Beginning in Phase 2c, Industry Member CAT Reporters must report quotes in OTC Equity Securities sent to an inter-dealer quotation system operated by an Industry Member CAT Reporter.

Order Handling Instructions on Order Routes

The Plan requires the material terms and conditions of a routed order to be reported.

- The terms and conditions passed to the receiving venue are required to be reported to CAT using the values available in the handlingInstructions field in the CAT Reporting Technical Specification for Industry Members. Note exchange specific values are not used, but rather an allowed value that most closely reflects the specific instruction sent to the exchange.
- In the event an Industry Member routes an order with exactly the same handling instructions received from the customer, they may use handlingInstructions code "RAR" (Routed as Received) on the Order Route event rather than re-stating all handlingInstructions values from the New Order/Order Accepted event.

Industry Member IDs (IMIDs)

- Broker Dealers must use an SRO assigned identifier to report to CAT and to identify sending and receiving firms.
- SROs assigned identifiers are referred to as IMIDs.
- CRD numbers may not be used to submit data to CAT or to identify routing and receiving broker-dealers in CAT Reports.

To ensure uniformity in how IMIDs are used when routing and receiving orders, the SROs published CAT Alert 2018-003.

CAT Alert for Industry Member IDs (1/2)

Industry member IDs (IMIDs) that appear in order event reports submitted to CAT must conform to rules established to minimize ID conflicts and streamline event processing. Rules/standards related to proper IMID representation in order event records are described below.

Orders routed to an exchange

- Firms routing an order to an exchange must populate the Sender IMID field in the Order Route Event with the identifier used when the order was submitted to the exchange. This identifier should be the same as Routing Party ID reported by the Participant Exchange on its own CAT Order Accept Event. This requirement is consistent with current OATS guidance which requires that the Exchange Participant ID is populated with the exchange identifier used when entering the order.

Orders routed to another industry member

- When orders are routed between two Industry Members, the same IMID (defined here as any SRO-assigned identifier) must be used by both the sender and receiver or the events cannot be unlinked.

CAT Alert for Industry Member IDs (1/2)

Default CAT reporting IMID

- The Plan Processor is required to publish each day a list of all SRO-assigned identifiers that includes a designated Default CAT Reporting IMID. The default IMID is selected by each CAT Reporter when they register as a CAT Reporter.
- If two parties do not have a pre-determined agreement as to which IMID should be used when reporting the receipt or route of an order from another IM CAT Reporter, the published default CAT Reporting IMID should be used.
- The default IMID can be either an equity- or options-assigned identifier and can be used on both equity and options events regardless of whether it was assigned by an equity or options exchange.

Conflicts with SRO-assigned IMIDs

- Because a single Industry member ID (IMID) might be used by different SROs for different entities, the Plan Processor shall publish a daily file highlighting any conflicts among the SRO-assigned IMIDs.
- If such a conflict exists for a specific IMID, the Industry Member can choose to use either 1) the IMID assigned by an SRO that is not in conflict with other IDs, or 2) the IMID field may be populated with the combination of the issuing SRO and that specific SRO-assigned Industry Member Identifier.

Error Corrections

All corrections must be submitted to CAT by 8:00AM on T+3.

Some enhancements to the process and tools to assist Industry Members include:

- Both JSON and CSV formats are provided for feedback and error correction submission
- Reporters may submit one metadata file for multiple order files or correction files *so long as all files are the same calendar date*
- Corrections for multiple original files may be submitted in a single correction file *for a given calendar day*, referencing the original file number along with the index of the record requiring remediation
- Reporter Portal: web-based GUI for status of submissions, error corrections, and small/limited size event reporting
- In addition, the web API will be made available to Reporters to check the processing status of their submitted files automatically

Industry Member CAT Registration Timelines

Event	Date
CAT registration starts with collection of basic company info	December 10, 2018
All IMs self-declare CAT Phase and begin connectivity registration process	January 1, 2019 – March 29, 2019
Primary Administrator Contact (phase 2a) delegates Administrators and system Users	March 29, 2019 – June 28, 2019
Deadline for B/Ds to provide connectivity details to Thesys CAT	May 15, 2019
Reporter Portal registration and login setup (start)	June 28, 2019
Thesys CAT completes connectivity set-ups	July 26, 2019 – August 15, 2019
Industry Testing Period for Phase 2a starts	August 15, 2019

SRO Proposed Regulatory Conformance Period

The Regulatory Conformance Period is designed to give Industry Members additional flexibility and time to fine tune the system changes and testing necessary to begin reporting in November 2019. During the three month Regulatory Conformance Period (November 15, 2019 - February 24, 2020), IM CAT Reporters would not be subject to regulatory action for failing to meeting the maximum allowable error rates or failing to correct reporting errors within the timeframes set forth in the CAT NMS Plan.

However, even during the Regulatory Conformance period, IM CAT Reporters will be required to:

1. Begin reporting all CAT reportable activity within the required timeframes (i.e., by 8 am ET the next Trading Day)
 2. Make a reasonable effort to correct system and/or coding errors promptly (i.e., when the root cause of reporting error has been identified, it must be promptly corrected so that rejections and unlinked records caused by the issue cease); and
 3. Have an adequate CAT reporting supervisory system in place.
- To the extent an IM CAT Reporter fails to (1) report, (2) identify and correct coding errors promptly, or (3) implement an adequate supervisory system, they may be subject to regulatory action

CAT NMS Informational Resources

Accessing Technical Specifications/Scenarios on the CAT Website

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

Home About CAT How it Works Training News FAQ **Technical Specifications** Search ...

Technical Specifications

TECHNICAL SPECIFICATION REPOSITORY

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

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

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

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

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

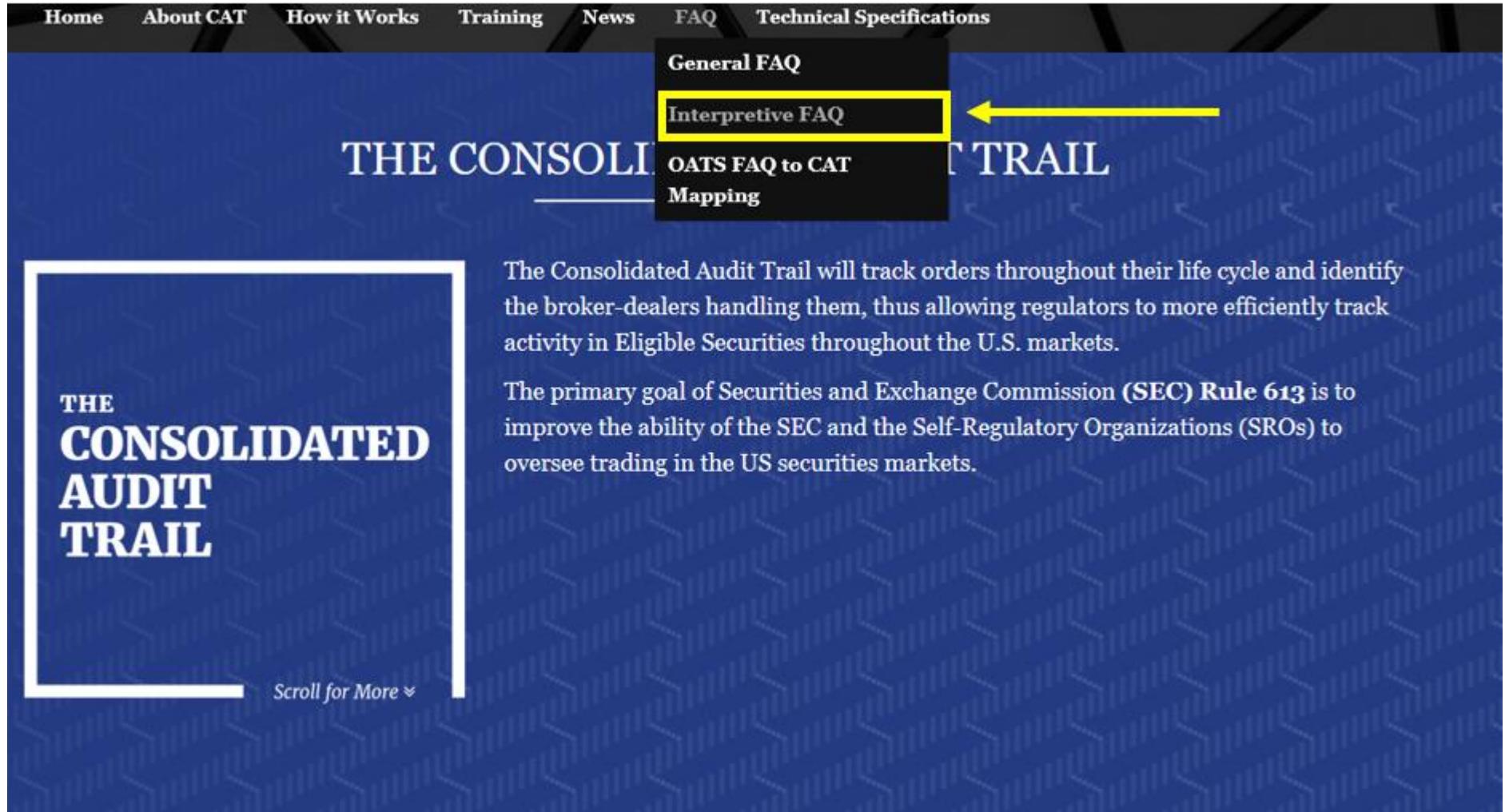
CAT Alert 2018-001 📄 – new as of 09/05/18

OATS to CAT Events Field Level Mapping 📄 – new as of 09/05/18
(SHA-256 4ec988a7a439b4fe29c6d756cd4a2408242c1d8b42aedf705d79ec81e6ba724e)

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

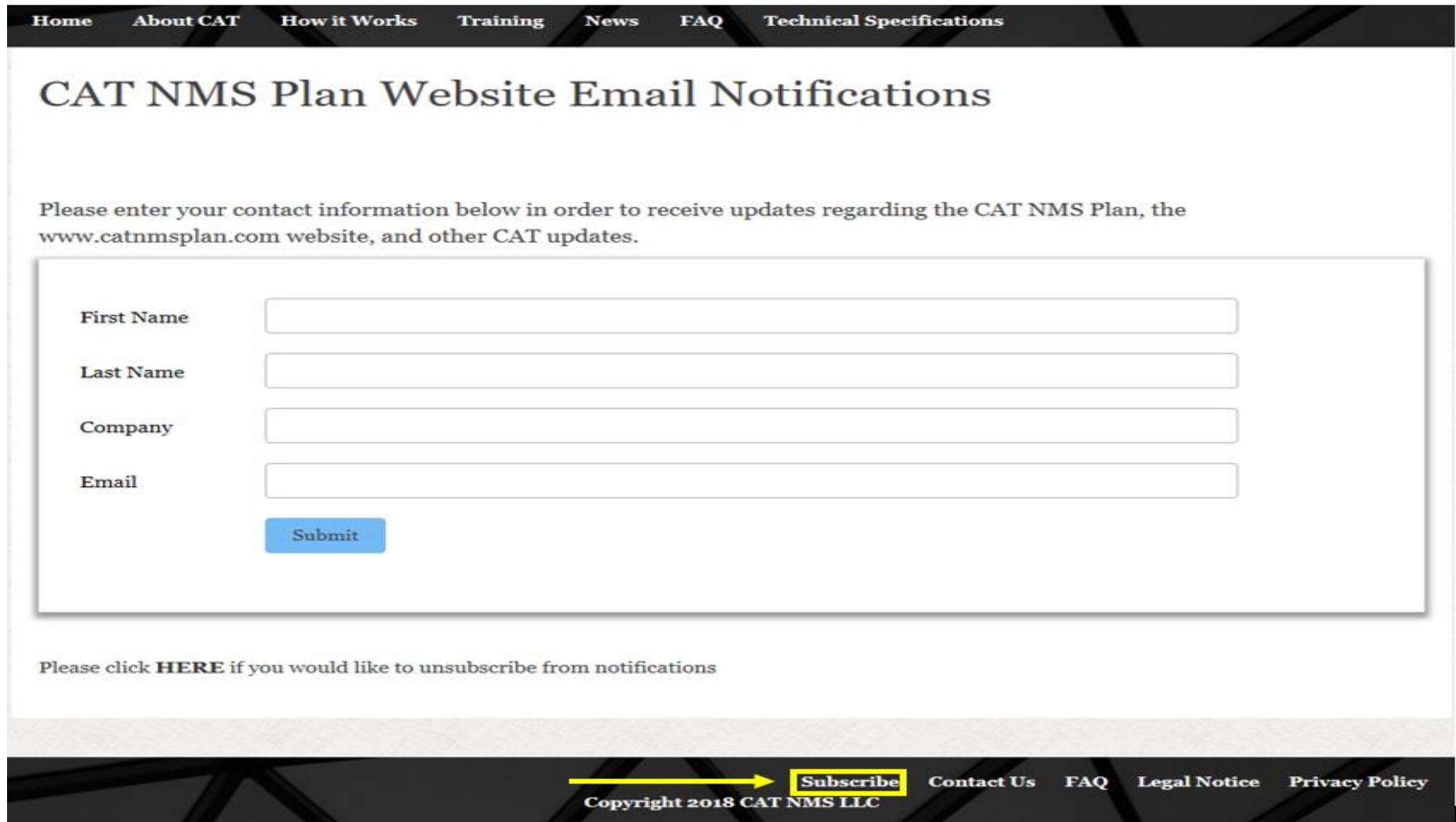
Accessing Interpretive FAQs on the CAT NMS Website

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



CAT NMS Plan Website Subscription

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



The screenshot shows the top navigation bar with links: Home, About CAT, How it Works, Training, News, FAQ, and Technical Specifications. Below this is the main heading "CAT NMS Plan Website Email Notifications". A paragraph of text asks the user to enter contact information for updates. The form contains four input fields: First Name, Last Name, Company, and Email. A blue "Submit" button is located below the Email field. At the bottom of the form area, there is a link: "Please click **HERE** if you would like to unsubscribe from notifications". The footer contains a yellow arrow pointing to a "Subscribe" button, followed by links for Contact Us, FAQ, Legal Notice, and Privacy Policy. The copyright notice "Copyright 2018 CAT NMS LLC" is also present.

Home About CAT How it Works Training News FAQ Technical Specifications

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Please enter your contact information below in order to receive updates regarding the CAT NMS Plan, the www.catnmsplan.com website, and other CAT updates.

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CAT Help Desk

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

Questions?