Industry Test Release Status

December 17, 2019

Agenda

- Announcements
- Industry Test Release Update
- Upcoming Key Dates
- Follow-Up Demo of CAT Reporter Portal Functionality
- Q&A

Announcements

Industry Test Member Environment is Open!

CAT Reporter Portal

Method	Industry Test URL
CAT Secure Reporting Gateway	https://srg.ct.catnms.com
Private Line	https://reporterportal.ct.catnms.com
AWS PrivateLink (January 27)	https://reporterportal-pl.ct.catnms.com

Machine-to-Machine

Method	Industry Test URL
Private Line	sftp.ct.catnms.com
AWS PrivateLink	sftp-pl.ct.catnms.com

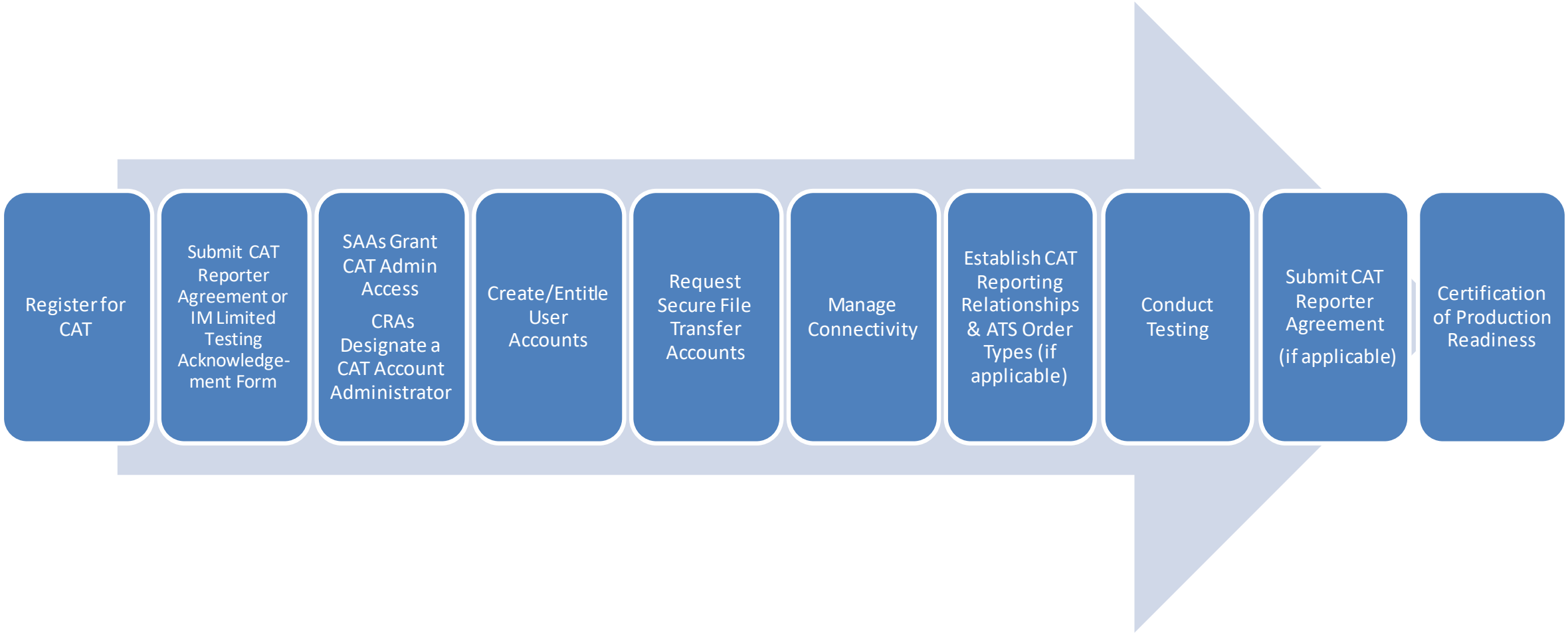
Change to Onboarding Requirements – Introduction of Industry Member CAT Reporter Limited Testing

- **Original Requirement:** To gain entitlement to CAT Systems, all Industry Members required to sign a CAT Reporter Agreement.

- **New Requirement:** Industry Member CAT Reporters that have not yet signed the CAT Reporter Agreement may be entitled to the IM Test Environment if they sign an ***Industry Member Limited Testing Acknowledgement Form***. Limitations:
  - IM CAT Reporters using this method will be prohibited from submitting production data. Any data must either be fabricated test data or obfuscated.
  - IM CAT Reporters **MUST** complete their Production Readiness Testing with Production data (required by April 6 for 2a and May 4 for 2b).

*** FINRA CAT anticipates publishing a *CAT Alert* describing the changes by December 18 ***

Onboarding Guideline Change – Introduction of CAT Reporter Limited Testing Form



Industry Test Release Update

Industry Member 2a/2b – Release 1 (File & Data Integrity) Release Rollout

Live in Industry Test

11/18/2019
Industry Test Release 1.1

- CAT Reporter Portal: ATS Order Types
- CAT Reporter Portal: CAT Reporting Relationships
- Multi-Factor Authentication Enabled
- Publication of IMID & Conflict List to catnmsplan.com
- Publication of Issue/Option Symbol Reference Lists to catnmsplan.com

12/16/2019
Industry Test Release 1.2

- Industry Test Open for Machine-to-Machine File & Data Integrity Validations & Feedback
- CAT Reporter Portal: Basic File Statistics
- CAT Reporter Portal: Manual File Upload

2/24/2020
Industry Test Release 1.3

- CAT Reporter Portal: File Submission feedback
- CAT Reporter Portal: Reporting Statistics (i.e. number of records received, accepted, rejected and feedback summaries)
- CAT Reporter Portal: Error Rates
- CAT Reporter Portal: Direct data entry & corrections
- CAT Reporter Portal: Bulk Repair of applicable Syntax/Semantic Errors

03/23/2020
Industry Test Release 1.4

- Announcements
- System Status

4/20/2020 – 2a Go-Live
5/18/2020 – 2b Go-Live

- 2a Go-Live – Industry Member 2a Reporting Required on April 20
- 2b Go-Live – Industry Member 2b Reporting Required on May 18

Functionality in Industry Test as of December 16, 2019

- CAT Reporter Portal
  - Entry and Management of CAT Reporting Relationships
  - Entry and Management of ATS Order Types (ATS IMs Only)
  - Multi-Factor Authentication Enabled
- Reference Data
  - Publication of IMID & Conflict List to catnmsplan.com
  - Publication of Issue/Option Symbol Reference Lists to catnmsplan.com

*** CAT Reporter Portal User Guide available on https://catnmsplan.com/registration/ ***

Functionality in Industry Test as of December 16, 2019 (continued)

- Machine-to-Machine Testing
  - File Acknowledgement, File Integrity and Data Integrity (syntax/semantics) validations are available
  - Industry Members and CAT Reporting Agents must comply with the published technical specifications
- CAT Reporter Portal Release of:
  - Basic File Reporting Statistics
  - Manual File Upload
    - ✓ User Role of CAT Administrator or CAT User is required
    - ✓ Files MUST meet the Technical Specification requirements (naming, syntax, compression requirements, etc.)
    - ✓ Files must be <=1GB in size AND total record count may not exceed 100,000
    - ✓ Meta and Data files are BOTH required – Data files must be submitted prior or at the same time as Meta Files
    - ✓ No limit to the number of files submitted using File Upload; however a limit of 10 files for a single submit, with max limit of 5GB
    - ✓ File and Data Integrity Feedback files submitted using Manual File Upload available for download via the Reporter Portal

Industry Test Status – As of December 16, 2019 Statistics

Item	Statistic
Number of Reporting Relationships Entered	280 relationships from 162 firms
Number of ATS Relationships Entered	55 order types from 8 ATS firms
Number of Total Submitters	24
Number of IMIDs	84
Number of Files Received	2,325 • Reporter Portal: 137 • Private Line: 2,188
Number of Files Rejected	1,421
File Reject Rate	38.88%
Number of Records Processed in Ingestion Phase (Record level validations)	26,750,866
Number of Processed Records Rejected	10,135,361
Current Reject Rate Overall of Processed Data	37.89%

FINRA CAT Observations on Day 1 Submissions

- On Day 1 of Industry Test, FINRA CAT observed file and ingestion rejections due to the following:
  - Missing Reporting Relationships – Files will be rejected if relationships are not yet established
  - Invalid file name constructs. Examples include:
    - SubmitterID is incorrect
    - fileSequence should be 6 digits
    - file type should be OrderEvents
  - Data file name in the meta file must be the full file name including compression and extension
  - Case sensitivity in JSON – Labels in meta data files are case sensitive

Known FINRA CAT Issues

General Notification:

- FINRA CAT Network team is assisting some firms with additional details related to their use of IP proxy based access.
  - **Resolution**: FINRA CAT is updating the Connectivity Supplement with additional firewall and URL information in support of Industry member's use of IP Proxy based access. These details are also provided in the Appendix of this presentation.

Resolved:

- Firms were unable to upload files when they are east of the GMT time zone.
  - **Resolution**: FINRA CAT released a patch on December 16, 2019, and the issue is now resolved.

In Development/Test:

- MEOT Records with <BLANK> Firm Designated ID rejecting as invalid.
- Metadata file rejecting as "Not Readable" when the last delimiter is missing in CSV.
- Allowable values included in latest Technical Specification 2.2.1 r2 need to be updated in Industry Test.
- Acknowledgement Feedback Files only include base filename. Per specification, acknowledgements should include the full filename.
- Patch Release is targeted for Thursday, December 19.

Under Review:

- FINRA CAT accepting events as opposed to rejecting in the following scenarios:
  - Equity events where the representative indicator or the fulfillment link type value is 'O'.
  - Values populated in 'Reserved for Future Use' fields.
  - Future dates in some fields.
  - Route Event with Destination Type of 'E' or 'F' and Sender IMID of <BLANK>.

*** FINRA CAT will begin posting a ***Known Issues List*** on catnmsplan.com by December 20 ***

Other Release Notes & Reminders

- Private line connectivity to CAT needs to be established and a connectivity ping test completed as soon as possible. Firms and reporting agents should note that the ping test may be completed prior to signing the CAT Reporter Agreement and obtaining CAT Reporter Portal entitlements.
- If private line connectivity is NOT yet established, Industry Members may still begin testing using the CAT Reporter Portal via the Manual File Upload. Requirements for CAT Reporter Portal:
  - ✓ Industry Members must have a signed CAT Reporter Agreement or an Industry Member Limited Testing Acknowledgement Form
  - ✓ A CAT Reporter Portal CAT Admin or User account must be established
  - ✓ The SRG requires multi-factor authentication (MFA) to establish a secure, encrypted session before accessing the CAT Reporter Portal
  - ✓ No limit in choice of Internet Service Providers and no specialized client software is required to be installed other than a modern web browser (HTML5 Compatible browsers including: Chrome, Firefox and Safari)

Other Release Notes & Reminders

- Industry Members must certify with a day of Production data by April 6, 2020 for 2a and May 4, 2020 for 2b.
- Firms may use limited historical data to submit to the Industry Test Environment (from November 15, 2019 forward).
- During the Industry Test period, FINRA CAT will continue to monitor:
  - Network and Connectivity Performance
  - Rejections and Errors

Upcoming Key Dates

Upcoming Key Dates for Release 2a/2b

Topic	Event	Date
Industry Test Release 1.2	Industry Test Release of: - Machine-to-Machine File and Data Integrity Validations & Feedback - CAT Reporter Portal Basic Reporting Statistics and Manual File Upload	December 16, 2019
Industry Webinar and Demo	Industry Test Release 1.2 Go-Live Checkpoint and CAT Reporter Portal Demo of: - CAT Reporter Portal Basic Reporting Statistics - Manual File Upload	December 17, 2019
Industry Call: Industry Testing Checkpoint	Weekly Industry Testing Checkpoint Call	December 30, 2019 Updated
Industry Call: Industry Testing Checkpoint	Weekly Industry Testing Checkpoint Calls – Every Tuesday at 4:15 pm (ET)	January 7 – March 20, 2020
Connectivity	Connectivity Supplement updated to include AWS PrivateLink information	January 3, 2020
Industry Webinar	CAT 101 Primer Webinar	January 8, 2020 New
Industry Webinar and Demo	Industry Webinar covering: - PrivateLine Connectivity & AWS PrivateLink - Review of Industry Release 1.3 Functionality and Demo	New January 15, 2020
Connectivity	AWS PrivateLink available for 2a/2b machine-to-machine file submission and CAT Reporter Portal	January 27, 2020
Plan Participant UAT	Plan Participant UAT begins for February Industry Test Release	February 3, 2020
User Guide Publication	CAT Reporter Portal User Guide Published for February Release	February 10, 2020
Industry Webinar and Demo	CAT Reporter Portal Industry Webinar and Demo of Industry Test Release 1.3 functionality	February 14, 2020
Industry Test Release 1.3	Industry Test Release of: - CAT Reporter Portal Error Correction and Feedback	February 24, 2020

The timeline of Phase 2a/2b Release 1 (File Validation & Data Integrity) can be found at https://catnmsplan.com/timelines/phase-2a-2b-release.html

Upcoming Key Dates for Release 2a/2b

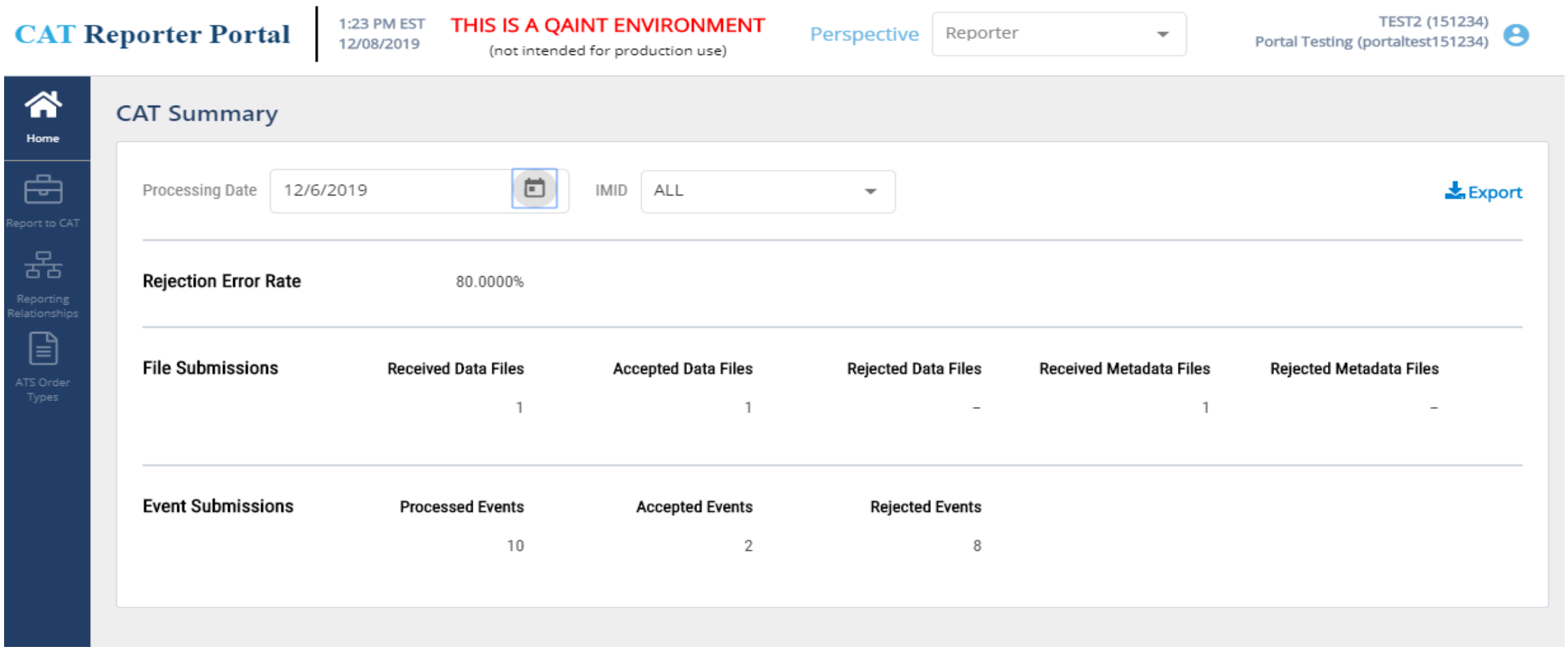
Topic	Event	Date
Industry Webinar and Demo	Industry Test Release 1.3 Go-Live Checkpoint and CAT Reporter Portal Demo of: - Submission, Error Correction & Feedback	February 25, 2020
Industry Test Release 1.4	Industry Test Release of: - CAT Reporter Portal Announcements & System Status	March 23, 2020
Industry Call: Industry Testing Checkpoint	Daily Industry Testing Checkpoint Calls at 4:15 pm (ET)	March 23, 2020 – April 3, 2020
Industry Test Certification	Industry Members and CAT Reporting Agents must complete production readiness testing for 2a reporting	April 6, 2020
Industry Call: Industry Testing Checkpoint	Weekly Industry Testing Checkpoint Calls - Every Tuesday at 4:15 pm (ET)	April 6, 2020 – May 1, 2020
Production Readiness	Production Environment Opens for Production Readiness	April 13, 2020 New
Production Go-Live	Production Go-Live for Equities 2a file submission and data integrity validations	April 20, 2020
Industry Call: Production Release Checkpoint	Industry Call - Status of 2a Go-Live	April 21, 2020
Industry Test Certification	Industry Members and CAT Reporting Agents must complete production readiness testing for 2b reporting	May 4, 2020
Industry Call: Industry Testing Checkpoint	Daily Industry Testing Checkpoint Calls at 4:15 pm (ET)	May 4, 2020 – May 15, 2020
Production Go-Live	Production Go-Live for Options 2b file submission and data integrity validations	May 18, 2020
Industry Call: Production Release Checkpoint	Industry Call - Status of 2b Go-Live	May 19, 2020
Industry Webinar and Demo	Industry Webinar and Demo of Compliance Report Card	June 2, 2020
Production Go-Live	Release of Industry Member Compliance Report Card for Equities ONLY	June 19, 2020
Production Go-Live	Release of Industry Member Compliance Report Card including Equities and Options	July 20, 2020

Demo & Walkthrough

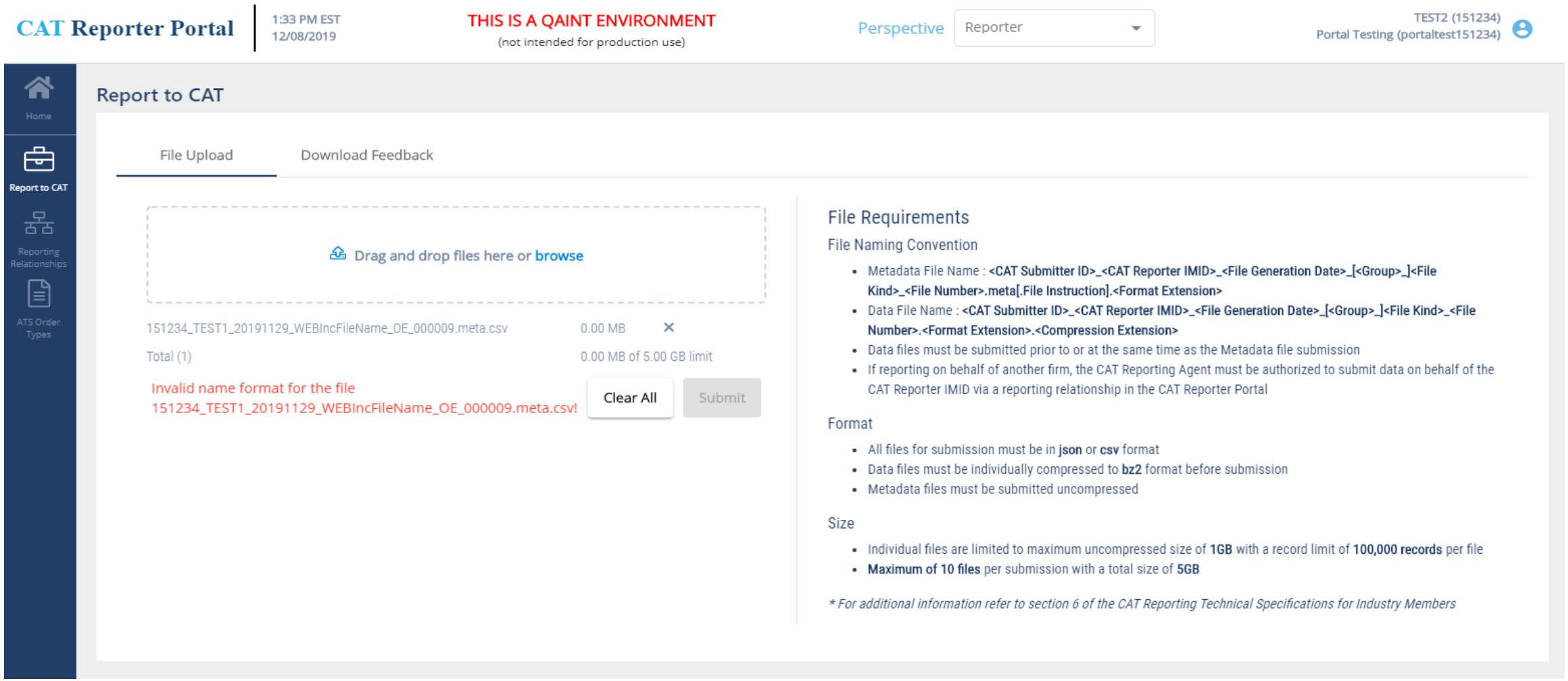
Demo & Walkthrough

- Demo of Industry Test Release 1.2 (December 16)

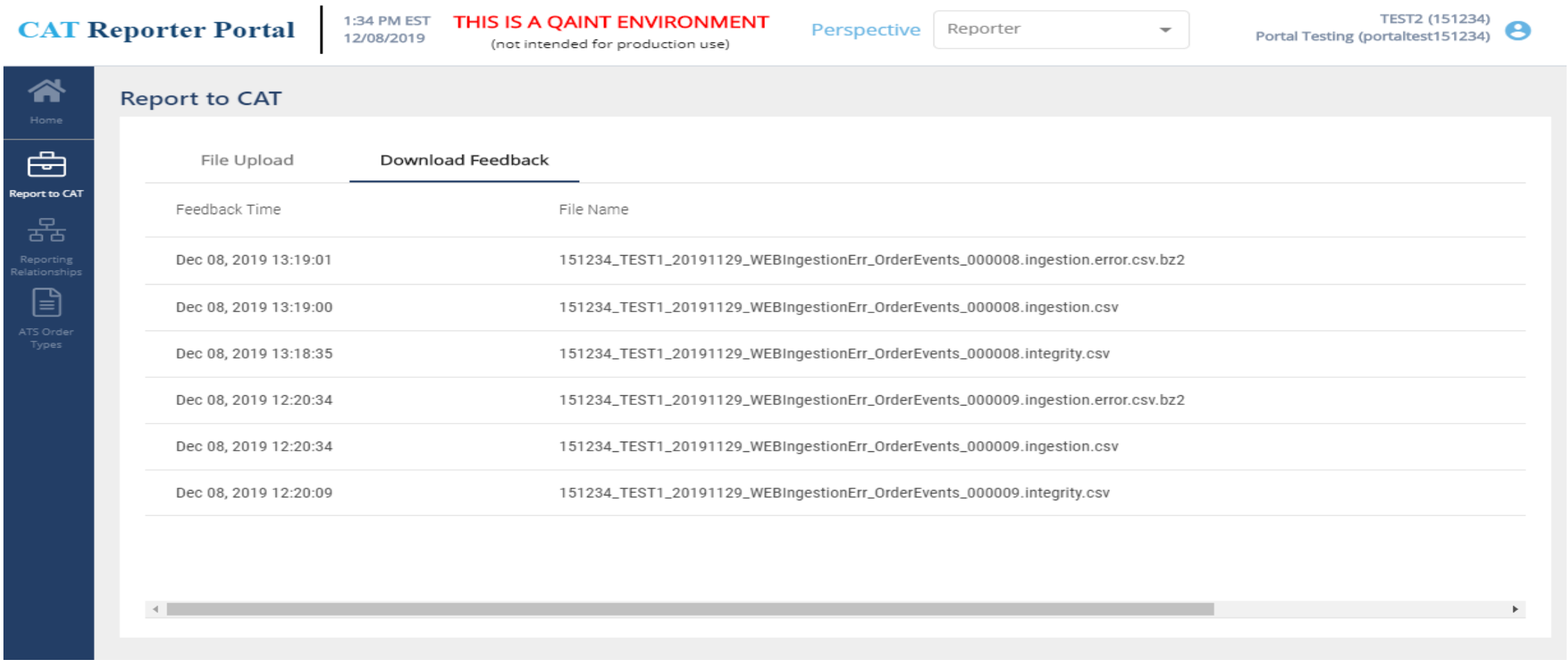
Reporter Portal – Basic Statistics Screen



File Upload – File Naming Convention Requirements



Download Feedback



How to Ask a Question during Today's Call

- **For participants using computer audio:**
  - Click the "Participants" button at the bottom of the app window, then the "Raise Hand" button at the bottom of the participants window.
  - A visual prompt will indicate that your line has been unmuted.

- **For participants using phone audio:**
  - Enter *9 on your phone keypad.
  - An audio prompt will indicate that your line has been unmuted.

FINRA CAT Helpdesk

Questions may be directed to the FINRA CAT Helpdesk at 888-696-3348 or help@finracat.com

Appendix

Firewall Supplement

- CAT Reporters accessing FINRA CAT systems will require access to the following sites and methods to support authentication and application functionality:

Environment	Destination URLs	Access Method	Access Requirement
Production	reporterportal.catnms.com	Private Line	Application access
	ews.fip.catnms.com	Private line	User Authentication
	ewslogin.fip.catnms.com	Private Line	User Authentication
	api-f0075de7.duosecurity.com	Internet	Multi-Factor Authentication
	maxcdn.bootstrapcdn.com	Internet	Application CSS access*
	fonts.googleapis.com	Internet	Application fonts access*
	fonts.gstatic.com	Internet	Application fonts access*
Customer Test	reporterportal.ct.catnms.com	Private Line	Application access
	ews-ct.fip.catnms.com	Private line	User Authentication
	ewslogin-ct.fip.catnms.com	Private Line	User Authentication
	api-f0075de7.duosecurity.com	Internet	Multi-Factor Authentication
	maxcdn.bootstrapcdn.com	Internet	Application CSS access*
	fonts.googleapis.com	Internet	Application fonts access*
	fonts.gstatic.com	Internet	Application fonts access*

**Internet path access requirement will be eliminated in a future release.*

Firewall Supplement

- DUO Multi-factor Authentication firewall IP address requirements:

To support multi-factor authentication (MFA) requirements into FINRA CAT applications over both private lines and through the Secure Reporting Gateway, Industry Members should configure their network firewall policies to permit outbound requests on tcp port 443 to the IP networks listed in the table below.

Environment	Destination Network	Application	TCP Ports	Access Method	Access Requirement
Production and CT	54.241.191.128/26 54.236.251.192/26 52.19.127.192/26 52.32.63.128/26 52.59.243.192/26 35.182.14.128/26	HTTPS	443	Internet	DUO Multi-factor Authentication