Industry Checkpoint Call

November 30, 2021

Agenda

- Production Statistics
- Open Issues
- General Announcements and Reminders
- Upcoming Key Dates
- Phase 2d Updates
- Q&A

Production Statistics

Equities - Rolling Five Day Period Initial T+1 vs. T+5 8 am Data Ready for Regulators November 18, 2021 - November 24, 2021

Trade Date	Late%	Rejection Initial	Rejection Adjusted	Intrafirm Initial	Intrafirm Adjusted	Interfirm Sent Initial	Interfirm Sent Adjusted	Interfirm Received Initial	Interfirm Received Adjusted	Exchange Initial	Exchange Adjusted	TRF Initial	TRF Adjusted	Overall Error Rate Initial	Overall Error Rate Adjusted
11/18/2021	.0067%	.0014%	.0010%	.0024%	.0012%	.0016%	.0010%	.0073%	.0040%	.0010%	.0009%	.7739%	.0681%	.0120%	.0094%
11/19/2021	.0050%	.0024%	.0017%	.0016%	.0011%	.0013%	.0005%	.0317%	.0039%	.0009%	.0009%	1.9261%	.0737%	.0155%	.0083%
11/22/2021	.1261%	.0463%	.0437%	.0370%	.0024%	.0387%	.0284%	.2378%	.1647%	.0009%	.0009%	2.4006%	.0616%	.2363%	.1975%
11/23/2021	1.6659%	.1118%	.1090%	.0458%	.0017%	.0260%	.0124%	.5287%	.1611%	.0010%	.0009%	1.6940%	.0586%	1.8819%	1.7978%
11/24/2021	.0001%	.1014%	.1011%	.0019%	.0018%	.0590%	.0589%	.2059%	.2053%	.0009%	.0009%	1.7811%	.0735%	.1365%	.1347%

Options – Rolling Five Day Period Initial T+1 vs. T+5 8 am Data Ready for Regulators November 18, 2021 – November 24, 2021

Trade Date	Late%	Rejection Initial	Rejection Adjusted	Intrafirm Initial	Intrafirm Adjusted	Interfirm Sent Initial	Interfirm Sent Adjusted	Interfirm Received Initial	Interfirm Received Adjusted	Exchange Initial	Exchange Adjusted	Overall Error Rate Initial	Overall Error Rate Adjusted
11/18/2021	.0009%	.0061%	.0060%	.0065%	.0051%	.0521%	.0517%	.0392%	.0349%	.0094%	.0091%	.0172%	.0159%
11/19/2021	.0002%	.0022%	.0021%	.0110%	.0106%	.0403%	.0397%	.0213%	.0184%	.0258%	.0257%	.0172%	.0167%
11/22/2021	.0027%	.0086%	.0077%	.0049%	.0046%	.0211%	.0206%	.0298%	.0257%	.0337%	.0327%	.0269%	.0252%
11/23/2021	4.1546%	.0130%	.0129%	5.8576%	.0286%	.0234%	.0229%	.0303%	.0279%	.1047%	.1046%	8.0430%	4.0486%
11/24/2021	.0001%	.0112%	.0111%	.0025%	.0023%	.0093%	.0090%	.0328%	.0313%	.0027%	.0026%	.0152%	.0150%

Open Issues (2c)

FINRA CAT File Submission and Data Integrity 2c Open Issues List – As of 11/30/2021

#	Status	Error Code	Summary	Resolution	Priority	Test Environment Targeted Release Date/Workaround	Production Environment Targeted Release Date/Workaround	Area
1	Open	N/A	Successful file delete submissions are incorrectly getting counted in the rejected files count in the statistics. Does not impact Compliance Error Rate.	Code Release	Low	Update: 2022	Update: 2022	Statistics
2	Open	N/A	FINRA CAT did not recognize the early close and improperly marked events that occurred between 1:15 and 4:15 pm ET and were reported by 8 am ET on the next CAT Trading Day as late events. Impact is limited to three days - 11/27/2020, 12/24/2020 & 11/26/2021.	Code Release	Low	Update: 2022	Update: 2022	Statistics
3	Open	N/A	File statistics screen is incorrectly displaying a blank integrity status in instances where the failure was due to a timeout or a duplicate file submission.	Code Release	Low	Update: 2022	Update: 2022	Reporter Portal
4	Open	N/A	Industry Members are intermittently experiencing a delayed display of file submissions and status in the File statistics screen on the Reporter Portal. This issue does not impact file feedback files.	Code Release	Low	Update: 2022	Update: 2022	Reporter Portal

FINRA CAT File Submission and Data Integrity 2c Open Issues List - As of 11/30/2021

#	Status	Error Code	Summary	Resolution	Priority	Test Environment Targeted Release Date/Workaround	Production Environment Targeted Release Date/Workaround	Area
5	Open	2129	FINRA CAT is incorrectly accepting firmDetails with no firmDesignatedID populated on Fulfillment and	Code Release	Low	2c: 10/11/2021	2c: 10/11/2021	Ingestion
5	Open	2129	Fulfillment Amendment Events.	Code helease	LOW	2d: 10/11/2021	2d: 12/13/2021	Validations
c	Open	2121	FINRA CAT is incorrectly accepting clientDetails with no	Codo Polozco	Low	2c: 10/11/2021	2c: 10/11/2021	Ingestion
0	6 Open	2122	orderID populated on Fulfillment and Fulfillment Amendment Events.	Code Release	Low	2d: 10/11/2021	2d: 12/13/2021	Validations
-	0.000	2098	FINRA CAT is incorrectly rejecting allocation events		Madium	2d Only Change	2d Only Change	Ingestion
/	Open	2060	when the symbol was effective on the tradeDate but not effective on the event date on the allocation event.	Code Release	Medium	2d: 10/25/2021	2d: 12/13/2021	Validations

FINRA CAT Linkage 2c Open Issues List - As of 11/30/2021

#		Status	Error Code	Summary	Resolution	Priority	Test Environment Targeted Release Date/Workaround	Production Environment Targeted Release Date/Workaround	Area
	1	Open	N/A	Parent not found and Named errors that are reconciled continue to be displayed as 'U' (Unrepaired) in Error Summary & Error Search screens. Feedback & Reporting Summary statistics are not impacted by this issue.	Code Release	High	Update: Currently evaluating alternative approach	Update: Currently evaluating alternative approach	Error Summary & Error Search Reporter Portal
	2	Open	3601	Out of Sequence Errors that are caused by an incorrect Time Stamp on the parent event are not being properly reconciled when the parent Time Stamp is corrected. Repaired counts and Adjusted Unlinked Rate are impacted by this issue.	Code Release	High	2022	2022	Intrafirm Statistics
	3	Open	Multiple	Parent not found errors are being generated for open option orders when the option symbol changes due to corporate action.	Code Release	Low	Update: 2021 Note that this issue only impacts Options Intravenue Exchange Errors	Update: 2021 Note that this issue only impacts Options Intravenue Exchange Errors	Intrafirm Linker Feedback & Statistics
	4	Open	9004 8004 7004 5004	FINRA CAT did not recognize the early close and improperly marked as unlinked, certain events that occurred between 1:15 and 4:15 pm ET and were reported by 8 am ET on the next CAT Trading Day. Any events that were marked as unlinked were automatically reconciled the following day. Impact is limited to three days - 11/27/2020 & 12/24/2020 & 11/26/2021.	Code Release	Low	Update: 2022	Update: 2022	Interfirm Exchange Trade Linker Feedback

*** The Known Issues List is published on www.catnmsplan.com under "Industry Member Specifications" ***

FINRA CAT Linkage 2c Open Issues List - As of 11/30/2021

4	ŧ	Status	Error Code	Summary	Resolution	Priority	Test Environment Targeted Release Date/Workaround	Production Environment Targeted Release Date/Workaround	Area
	5	Open	396	FINRA CAT is incorrectly generating warnings on secondary events in instances where the parent DAY order was subsequently modified to a GTC order.	Code Release	Medium	2022	2022	Intrafirm Linker Feedback
	6	Open	6003	Industry Members are incorrectly receiving options exchange unlinked errors for subsequent day order modifications/ adjustments to long lived orders previously routed to the exchange. Options exchanges must report modifications in these instances. Nine firms impacted.	N/A	Medium	Update: 12/13/2021	Update: 12/13/2021	Options Exchange Linker Feedback

FINRA CAT Open Issues List 2c Planned Enhancements

#		Status	Error Code	Summary	Resolution	Priority	Test Environment Targeted Release Date	Production Environment Targeted Release Date	Area
	1	Open	2122	Incorrect error code is generated when an array field (e.g., clientDetails) is populated as a Name/Value pair.	Code Release	Low	To be scheduled	To be scheduled	Ingestion Validations
	2	Open	2027	Incorrect error code is being generated when eventTimestamp is a future date (2027- eventTimestamp must be in the correct format instead of 2139 - eventTimestamp is greater than the current date and time).	Code Release	Low	To be scheduled	To be scheduled	Ingestion Validations
				Enhance OSI symbol validations to accept symbols that			2c: 9/20/2021	2c: 9/20/2021	Ingestion
	3 Open	2060	are on the CAT Reportable Securities list even if event date is prior to effective date.	Code Release	Low	2d: 10/11/2021	2d: 12/13/2021	Validations	
				Accept, rather than reject, routes to a foreign destination when the date in the name/value pair for			2c: 10/13/2021	2c: 10/13/2021	Ingestion
	4 Ope	Open	2101	timeInForce values of 'DAY' and 'GTX' is T+2 to accommodate orders routed on a foreign holiday.	Code Release	Low	2d: 10/11/2021	2d: 12/13/2021	Validations

Open Issues (2d)

FINRA CAT Linkage 2d Open Issues List - As of 11/30/2021

4	ŧ	Status	Error Code	Summary	Resolution	Priority	Test Environment Targeted Release Date/Workaround	Production Environment Targeted Release Date/Workaround	Area
	1	Open	6003 7004 8003 8004 9003 9004	FINRA CAT is generating an incorrect unlinked error when the date portion of the Route Event timestamp is on a weekend and the date portion of the Accept/Modify Event timestamp is for the next business day.	Code Release	Medium	12/13/2021	12/13/2021	Interfirm & Exchange Linkage Feedback
	2	NEW- Open	7000 series	FINRA CAT is not reconciling Exchange Named Errors when an Industry Member submits a repair/late data.	Code Release	Medium	11/30/2021	12/13/2021	Exchange Linkage Feedback & Reporting Statistics

Upcoming Technical Specification Updates

#	Status	Summary	Spec Publish Date	Spec Version	Effective Date
1	Published	Reject MEOT records if <i>buyDetails.side</i> field is populated with values SL, SS, SX or if the <i>sellDetails.side</i> field is populated with value B.	10/8/2021	4.0.0 r11	Q1 2022
2	Open	Change the <i>cancelQty</i> field on Request events (MEICR, MEOCR, MOICR, MOOCR, MLICR, and MLOCR) from Conditional to Required starting in Q1 2022.	TBD	TBD	Q1 2022
3	Open	Update the description of <i>cancelQty</i> to allow a value of '0' to indicate that the cancel was for the full remaining quantity.	TBD	TBD	11/9/21
4	Open	Clarify that the <i>accountHolderType</i> value of 'E' may also include an employee or associated person of affiliated group companies.	TBD	TBD	N/A
5	Open	Add handlingInstructions value 'SLL' (Strategy Legs Later).	TBD	TBD	11/15/21
6	Open	Add <i>handlingInstructions</i> value 'ALGS' (Indicates that the event is part of an algorithmic strategy where the specific quantity may not be explicitly provided).	TBD	TBD	11/15/21
7	Open	Change the data type of 'DLVT' handlingInstructions from Text to an Array.	TBD	TBD	Q1 2022

General Announcements and Reminders

Announcements & Reminders

- The lists of participating IMIDs from all six of the Phase 2d Coordinated Industry Tests are posted to the CAT website
- > The next Industry Testing Checkpoint Call will be Tuesday, December 7, 2021 at 4:15 pm ET
- > The next Monthly CAT Implementation Update will be Wednesday, December 15, 2021 at 4:15 pm ET

Upcoming Key Dates

Upcoming Key Dates for Phase 2d

Торіс	Event	Date
Industry Call: Industry Testing Checkpoint	Periodic Industry Testing Checkpoint Calls – Designated Tuesdays at 4:15 pm (ET)	January 7, 2020 until further notice
Compliance Go-Live	Production Go-Live for Phase 2d reporting requirements	December 13, 2021

Phase 2d Updates

Phase 2d Reminder

- The Production Environment will be unavailable from approximately 8-10 am ET on December 13, 2021, during which time Industry Members will not be able to submit data to CAT.
 - FINRA CAT will send a communication when the system becomes unavailable and will send another communication when the system is back up.

Industry Member 2d Release Rollout

Release 2d1	Release 2d2	Release 2d3	Release 2d4	2d Go-live
Industry Test – 6/28/2021	Industry Test – 7/19/2021	Industry Test – 8/2/2021	Industry Test – 8/23/2021	Production – 12/13/2021
 Ingestion Industry Test Open for Machine- to-Machine File & Data Integrity Validations & Feedback 9 Syntax Validations Conditional Validations Conditional Validations Manual File Upload Reporting Summary Statistics 	 Intrafirm Linkage Industry Test Open for Machine- to-Machine Intrafirm Linkage Validations & Feedback Reference Data Validations on senderIMID, receiverIMID, destination and legDetails OptionID/Symbol CAT Reporter Portal Linkage File feedback Linkage Statistics Error Summary and Error Search including Error Correction Direct Data Entry 	 Interfirm Linkage Industry Test Open for Machineto-Machine Interfirm/Exchange Unikage Validations & Feedback Interfirm Quote Linkage Interfirm/Exchange linkage for Route Modification Events including Unlinked feedback for Routed Order ID Mismatch Firm to Exchange Trade Linkage for MOOT Events CAT Reporter Portal Support Clearing Firm View of Correspondent Reporting Feedback submitted by Third-Party Vendor 	 Multi-leg Linkage Industry Test Open for Machine-to-Machine Multi-leg Linkage Validations & Feedback Interfirm & Exchange for Multi-leg Events Intrafirm Out of Sequence checks CAT Reporter Portal Reconciliation Statistics Counterparty Statistics for MOOT linkages 	 Ingestion & All Linkage Production Open for Machine-to-Machine File, Data Integrity and All Linkage Validations & Feedback CAT Reporter Portal Manual File Upload Reporting Summary Statistics including reconciliation Counterparty Statistics for MOOT linkages Linkage File Feedback Error Summary and Error Search including Error Correction Direct Data Entry Support Clearing Firm View of Correspondent Reporting Feedback submitted by Third-Party Vendor

2d Statistics & Observations November 18, 2021 to November 24, 2021

- > Total **856** Unique Firms and **129** Unique Submitters in Industry Test
- > Overall File Rejection Rate is 4.47%
- > Approximately **15.81%** of submissions are New 2d Events; **0.36%** of submissions are Multi-leg Events
- > Most of the Unlinked Interfirm, Exchange and Trade are due to:
 - Not all firms reporting in Test Environment
 - Firms reporting test symbols that are matched with production data for Exchange and Trade Linkage

Coordinated Industry Tests

- **362** unique IMIDs participated in the 9/10 Industry Test
- **505** unique IMIDs participated in the 10/1 Industry Test
- 561 unique IMIDs participated in the 10/15 Industry Test
- 776 unique IMIDs participated in the 10/29 Industry Test
- 1044 unique IMIDs participated in the 11/12 Industry Test
- **1089** unique IMIDs participated in the 11/26 Industry Test

Equities – Rolling Five Day Period (Test) Initial T+1 vs. T+5 8 am Data Ready for Regulators November 18, 2021 – November 24, 2021

Trade Date	Late%	Rejection Initial	Rejection Adjusted	Intrafirm Initial	Intrafirm Adjusted	Interfirm Sent Initial	Interfirm Sent Adjusted	Interfirm Received Initial	Interfirm Received Adjusted	Exchange Initial	Exchange Adjusted	TRF Initial	TRF Adjusted	Overall Error Rate Initial	Overall Error Rate Adjusted
11/18/2021	4.5935%	.8483%	.8483%	1.6574%	1.6574%	65.1851%	63.1418%	46.0126%	45.3256%	.0268%	.0268%	4.0897%	4.0893%	17.9570%	17.6210%
11/19/2021	.3315%	.2047%	.2047%	.3536%	.3536%	62.8276%	62.8152%	34.7520%	34.5421%	.0850%	.0850%	4.0965%	4.0955%	10.0904%	10.0764%
11/22/2021	5.7559%	.5788%	.5409%	.1840%	.1836%	59.1900%	51.4003%	38.3883%	37.8159%	.0380%	.0380%	3.7016%	3.7002%	15.4781%	14.5363%
11/23/2021	3.2118%	3.6428%	3.6428%	.3576%	.3575%	65.8003%	60.2774%	43.9893%	43.4889%	.0079%	.0079%	.2480%	.2460%	16.6807%	16.0227%
11/24/2021	1.1319%	2.7628%	2.7628%	.1790%	.1790%	49.7002%	49.6992%	32.5666%	31.6610%	.0694%	.0694%	4.8112%	4.8077%	11.7586%	11.6821%

Options – Rolling Five Day Period (Test) Initial T+1 vs. T+5 8 am Data Ready for Regulators November 18, 2021 – November 24, 2021

	Trade Date	Late%	Rejection Initial	Rejection Adjusted	Intrafirm Initial	Intrafirm Adjusted	Interfirm Sent Initial	Interfirm Sent Adjusted	Interfirm Received Initial	Interfirm Received Adjusted	Exchange Initial	Exchange Adjusted	Overall Error Rate Initial	Overall Error Rate Adjusted
11	/10/2021	24509/	.3611%	.3611%	.4933%	.4933%	4.8477%	4.8394%	3.3465%	3.3411%	1.4168%	1.4168%	1 50520/	1.5947%
11/	/18/2021	.2459%	.3011%	.3011%	.4933%	.4933%	4.8477%	4.8394%	3.3405%	3.3411%	1.4108%	1.4108%	1.5953%	1.5947%
11/	/19/2021	2.1564%	.8726%	.3272%	.4143%	.4143%	2.6981%	2.6281%	3.9411%	3.8931%	2.1296%	2.1296%	4.0960%	3.5441%
11/	/22/2021	3.1767%	.1122%	.0997%	.1380%	.1380%	3.9019%	3.8996%	3.4895%	2.4451%	25.2452%	25.2452%	8.5040%	8.4301%
11	/22/2024	2 24 000/		6 5025%	17750/	170.40/	1.0.4020/	1 52210/	16 21 6 40/	15 24700/	2 (1120/	2 (1120/	10 5 4700/	10 465 20/
11/	23/2021	3.2169%	6.5925%	6.5925%	.1725%	.1704%	1.8402%	1.5331%	16.2164%	15.3476%	2.6112%	2.6112%	10.5470%	10.4652%
11	/24/2021	1/01%	5546%	5546%	1027%	1027%	2 7/1/0/	2 7/1/0/	2 8200%	2 7010%	2 0964%	2 09649/	1 67940/	1.6753%
11/	/22/2021 /23/2021 /24/2021	3.1767% 3.2169% .1491%	.1122% 6.5925% .5546%	.0997% 6.5925% .5546%	.1380% .1725% .1937%	.1380% .1704% .1937%	3.9019% 1.8402% 2.7414%	3.8996% 1.5331% 2.7414%	3.4895% 16.2164% 2.8390%	2.4451% 15.3476% 2.7919%	25.2452% 2.6112% 2.9864%	25.2452% 2.6112% 2.9864%	8.5040% 10.5470% 1.6784%	1(

FINRA CAT Helpdesk

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

How to Ask a Question during Today's Call

• For participants using computer audio:

- Click the "Raise Hand" button at the bottom of the participant's 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.