Industry Checkpoint Call

March 16, 2021

Agenda

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

Production Statistics

Equities – Rolling Five Day Period
Initial T+1 vs. T+5 8 am Data Ready for Regulators
February 25, 2021 – March 10, 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
2/25/2021	10.4264%	.0036%	.0022%	.2201%	.1186%	6.7646%	.9014%	8.0148%	.0722%	5.7571%	.1000%	.5881%	.5535%	13.4972%	10.6490%
2/26/2021	.5341%	.0004%	.0002%	.0019%	.0016%	.5901%	.0519%	.0473%	.0405%	.7625%	.0120%	.4193%	.2769%	.7510%	.5496%
3/1/2021	.3036%	.0003%	.0001%	.0024%	.0019%	.0149%	.0129%	.5150%	.0133%	.0707%	.0573%	.2256%	.1934%	.3860%	.3186%
3/2/2021	.0026%	.0029%	.0002%	.0021%	.0018%	.0409%	.0391%	.0188%	.0114%	.0234%	.0116%	.1793%	.1553%	.0188%	.0125%
3/3/2021	.3687%	.0002%	.0002%	.0302%	.0270%	.0165%	.0150%	.1905%	.0119%	.0270%	.0163%	.1894%	.1573%	.4110%	.3832%
3/4/2021	10.1778%	.0098%	.0001%	.0722%	.0052%	4.1627%	1.9125%	9.2140%	.5957%	6.0543%	.0116%	.1696%	.1586%	13.0041%	10.5081%
3/5/2021	.0668%	.0007%	.0006%	.0019%	.0016%	.2525%	.1323%	.1244%	.0371%	.0208%	.0144%	.5512%	.1557%	.1222%	.0931%
3/8/2021	1.1266%	.0010%	.0009%	.0022%	.0021%	3.8254%	.0214%	.2553%	.0556%	6.7241%	.0095%	.2001%	.1692%	2.8315%	1.1407%
3/9/2021	.8302%	.0006%	.0002%	.0019%	.0018%	4.1054%	.0167%	.0307%	.0267%	.0232%	.0160%	.1817%	.1454%	1.3674%	.8402%
3/10/2021	.0357%	.0024%	.0011%	.0031%	.0031%	.0464%	.0243%	.0190%	.0185%	.0280%	.0276%	.1906%	.1714%	.0536%	.0494%

Options – Rolling Five Day Period
Initial T+1 vs. T+5 8 am Data Ready for Regulators
February 25, 2021 – March 10, 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
2/25/2021	.0246%	.0055%	.0032%	.1568%	.1568%	.4816%	.4773%	.0755%	.0624%	.2127%	.1943%	.1665%	.1580%
2/26/2021	1.2793%	.0077%	.0058%	.2456%	.2412%	.0072%	.0063%	.0603%	.0570%	.2828%	.2622%	1.4900%	1.4786%
3/1/2021	.4904%	.0311%	.0285%	.1816%	.1744%	.0209%	.0195%	.0751%	.0645%	.2631%	.2134%	.6995%	.6760%
3/2/2021	.0006%	.0071%	.0051%	.1786%	.1726%	.0194%	.0182%	.1498%	.1391%	.5330%	.2832%	.2526%	.1674%
3/3/2021	.0503%	.0055%	.0054%	.1939%	.1843%	.0587%	.0320%	.1120%	.0735%	.1644%	.1478%	.2049%	.1922%
3/4/2021	.0250%	.0072%	.0055%	.2209%	.2186%	1.8377%	1.8356%	.4190%	.3891%	2.6230%	.1685%	1.0122%	.2351%
3/5/2021	.8724%	.0340%	.0311%	.3629%	.3602%	1.6914%	.1303%	12.8338%	.0614%	.2009%	.1904%	1.3954%	1.1021%
3/8/2021	.0041%	.0039%	.0021%	.1835%	.1834%	.0351%	.0301%	.0944%	.0798%	.1540%	.1402%	.1514%	.1447%
3/9/2021	.0013%	.0077%	.0018%	.4117%	.4104%	.0260%	.0247%	.0656%	.0641%	1.0579%	.1508%	.5877%	.2855%
3/10/2021	.0008%	.0088%	.0087%	.4282%	.4281%	.0175%	.0165%	.8178%	.8167%	.7918%	.1199%	.5244%	.3057%

Phase 2c Updates

2c Statistics & Observations
March 1, 2021–March 12, 2021

Item	Statistic
Total Unique Firms in Industry Test	562
Representative Order Linkage Rate	99.82%
Fulfillment Order Linkage Rate	92.79%
Allocation Events Rejection Rate	8.74%
Top Allocation Events Rejection Errors	Missing or Invalid *DVPCustodianID* Missing or Invalid *firmDesignatedID* Missing or Invalid *side* Missing or Invalid *symbol*

Phase 2c Cutover Update

▸ FINRA CAT will support the Phase 2c cutover by providing certain 2a/2b linkage error feedback staged for 2c schema format submission.

▸ Given that data integrity errors can include malformed messages, FINRA CAT is not planning to provide the same support for data integrity error feedback.

Linkage Error Transition Support

➤ Beginning with Linkage feedback for April 23, 2021, CAT will return errors in the Phase 2c format:

- For errors returned in CSV format, new fields will be represented with a delimiter; no values will be populated in those fields
- For errors returned in JSON format
  - New required non-Boolean field (TIF code on MEOJ event), will be added with a "dummy" value populated
  - New required Boolean fields will not be added since the spec interprets a Boolean that is not present as false
  - New conditional fields will not be added
- Corrections submissions must be populated as per the Tech Specs or the events will be rejected

Submission Date	Submission Format	Feedback Processing Date							
		4/20	4/21	4/22	4/23	4/26	4/27	4/28	4/29
4/20	2a/2b	1	2	3	4				
4/21	2a/2b		1	2	3	4			
4/22	2a/2b			1	2	3	4		
4/23	2a/2b				1	2	3	4	
4/26	2c					1	2	3	4
4/27	2c						1	2	3
4/28	2c							1	2
4/29	2c								1

Transition Support for Changes to Existing Phase 2a/2b Events

Event Type Code	Change Description	Seq# and Field Name	CSV Feedback	JSON Feedback
MEOJ	New **required** field added	31. timeInForce	Delimiter added	Field added with dummy value populated
MEOA	New **required** field added	44. solicitationFlag	Delimiter added	Boolean field not added
MEQR	New **required** field added	24. unpricedInd	Delimiter added	Boolean field not added
MEOT	New conditional field added	32. quotingIDQS	Delimiter added	Conditional field not added
	New conditional field added	33. clearingFirm	Delimiter added	Conditional field not added
	New conditional field added	34. counterparty	Delimiter added	Conditional field not added
MENO	New **required** field added to *reserved for future* use position	16. solicitationFlag	n/a; position already present	Boolean field not added
	New conditional field added to *reserved for future* use position	17. RFQID	n/a; position already present	Conditional field not added
MEOR	Updated from optional to **required**	29. routeRejectedFlag	n/a; position already present	Boolean field not added
MENQ	Updated from optional to **required**	24. mpStatusCode	n/a; position already present	Boolean field not added
	Updated from optional to **required**	25. quoteRejectedFlag	n/a; position already present	Boolean field not added
	New **required** field added	26. unpricedInd	Delimiter added	Boolean field not added

CAT will format events so that they can be ingested by firms who have transitioned to the Phase 2c format.
Firms must update the corrections with values in accordance with the Phase 2c requirements.

Phase 2c Cutover Resources

▸ More detailed information about the Phase 2c Cutover can be found in the following Industry Webinars:
  ◦ Phase 2c Cutover- Part 2 and Weekly Industry Testing Checkpoint Call (1/19/2021)
  ◦ Phase 2c Cutover and November 2020 Technical Specifications Overview (11/17/2020)

Open Issues (2a/2b)

FINRA CAT File Submission and Data Integrity (2a/2b) Open Issues List – As of 3/16/2021

#	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	2Q 2021	2Q 2021	Statistics
2	Open	N/A	FINRA CAT is incorrectly accepting invalid name/value in timeInForce of GTD/DAY	Code Release	Medium	2c only: 1/25/2021	2c only: 4/26/2021	Ingestion Feedback & Statistics
3	Open	N/A	FINRA CAT did not recognize the early close and improperly marked as late, events that occurred between 1:15 and 4:15 pm ET and were reported by 8 am ET on the next CAT Trading Day. Impact is limited to two days - 11/27/2020 & 12/24/2020.	Code Release	Low	2021	2021	Statistics
4	Open	N/A	The below values are not yet implemented: • handlingInstructions values 'TTF', 'TTO', and 'TTS'.	Code Release	Medium	2a/2b: 1/25/2021 2c: 1/25/2021	2a/2b: 2/14/2021 2c: 4/26/2021	Ingestion

FINRA CAT Linkage (2a/2b)
Open Issues List – As of 3/16/2021

#	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	2021	2021	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 two days - 11/27/2020 & 12/24/2020.	Code Release	Low	2021	2021	Interfirm Exchange Trade Linker Feedback

FINRA CAT Linkage (2a/2b)
Open Issues List – As of 3/16/2021

#	Status	Error Code	Summary	Resolution	Priority	Test Environment Targeted Release Date/Workaround	Production Environment Targeted Release Date/Workaround	Area
5	Open	Multiple	FINRA CAT is improperly suppressing <u>interfirm</u> unlinked errors for the equity leg of complex orders. The unlinked error should only be suppressed for the equity leg of complex orders routed to or from an options exchange.	Code Release	Medium	4/26/2021	4/26/2021	Interfirm Linker Feedback
6	Open	396	FINRA CAT is incorrectly generating warning errors on secondary events in instances where the parent DAY order was subsequently modified to a GTC order.	Code Release	Medium	To be scheduled	To be scheduled	Intrafirm Linker Feedback
7	Open	8003 8004 9003 9004	FINRA CAT is incorrectly generating an unlinked error for the first time on T+4 for previously linked events in scenarios when the two events that were initially linked occurred on two separate trade dates. For example, an order routed at 6 pm on one calendar day and is reported as accepted by the receiving firm at 8 am on the next calendar day.	Code Release	Medium	To be scheduled	To be scheduled	Interfirm Linker Feedback

FINRA CAT Linkage (2a/2b)
Open Issues List – As of 3/16/2021

#	Status	Error Code	Summary	Resolution	Priority	Test Environment Targeted Release Date/Workaround	Production Environment Targeted Release Date/Workaround	Area
8	Open	8003 8004 9003 9004	FINRA CAT incorrectly generated route link key duplicate errors on 02/11, 02/16 and 02/23. As a result, 44 Industry Members received a limited number of incorrect interfirm linkage errors.	Code Release	Medium	Not Applicable	Update: Go-forward fix in progress Report Card impact de minimis	Interfirm Linker Feedback
9	NEW-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 exchange reporting modification required. Nine firms impacted.	N/A	Medium	3Q 2021	3Q 2021	Options Exchange Linker Feedback

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

FINRA CAT Open Issues List (2a/2b)– Planned Enhancements

#	Status	Error Code	Summary	Resolution	Priority	Test Environment Targeted Release Date	Production Environment Targeted Release Date	Area
1	Open	2133	For Name/Value Pair Data type fields, providing a value that is not in allowable values list returns error code 2133 (Additional Field) instead of error code 2101 (Missing or Invalid timeInForce).	Code Release	Low	2c only: March 2021	2c only: 4/26/2021	Ingestion Validations
2	Open	2122	Incorrect error code is generated when an array field (e.g., clientDetails) is provided as a Name/Value pair.	Code Release	Low	To be scheduled	To be scheduled	Ingestion Validations
3	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

Open Issues (2c)

FINRA CAT File Submission and Data Integrity (2c) Open Issues List – As of 3/16/2021

#	Status	Error Code	Summary	Resolution	Priority	Test Environment Targeted Release Date	Production Environment Targeted Release Date	Area
1	NEW-Open	2147	Portal is not displaying Error Code 2147 (missing or invalid firmDetails) for an MEOFS event where firmDetails is a required field. Firms are getting accurate ingestion feedback. This Error Code will be added back to the Technical Specifications as well as be displayed on the reporter portal screen as a valid error code.	Code Release	Medium	4/4/2021	Not applicable	Reporter Portal Error Summary Error Search

FINRA CAT Linkage (2c)
Open Issues List – As of 3/16/2021

#	Status	Error Code	Summary	Resolution	Priority	Test Environment Targeted Release Date	Production Environment Targeted Release Date	Area
1	Open	3501	FINRA CAT is incorrectly generating an unlinked error on T+4 on MEAA events when the parent MEPA is reported on a prior date.	Code Release	Medium	Update:3/29/2021	Not Applicable	Linkage Feedback
2	NEW -Open	3601	FINRA CAT is incorrectly generating an out of sequence error on a route event when the eventTimestamp on the MEOR is prior to the eventTimestamp on the parent MEIM.	Code Release	Medium	3/29/2021	Not Applicable	Linkage Feedback
3	NEW -Open	3004 3007	FINRA CAT is incorrectly generating an order key duplicate error when the key is duplicated between a primary MEOM and primary MEIM.	Code Release	Medium	3/29/2021	Not Applicable	Linkage Feedback

General Announcements and Reminders

Announcements

▸ The Phases 2c and 2d Industry Member Technical Specifications and Reporting Scenarios were published on March 5, 2021

▸ The updated Phase 2d Industry Member Schema (v4.0.0 r7) was published on March 8, 2021

Announcements

▸ The February 2021 CAT Industry Member Compliance Report Cards have been published to the CAT Reporter Portal. The Report Cards can be accessed in the CAT Reporter Portal using the navigation tab on the left-hand side.

▸ The Report Card Export function button will be available on March 28, 2021

▸ Upcoming Industry Webinars:
  ◦ Monthly CAT Implementation Update and FINRA (SRO) Status Update on OATS Retirement (March 18, 2021)
  ◦ Industry Member Report Card– Reporting Scenario Examples (March 23, 2021)
  ◦ Phase 2d OTC Link ATS Scenarios Deep Dive (March 24, 2021)

▸ The next Industry Testing Checkpoint Call will be on March 30, 2021

Upcoming Key Dates

Upcoming Key Dates for Phases 2c and 2d

Topic	Event	Date
Industry Call: Industry Testing Checkpoint	Industry Testing Checkpoint Calls – Bi-weekly, on Tuesdays at 4:15 pm (ET)	January 7, 2020 until further notice
Compliance Go-Live	Production Go-Live for Equities 2c reporting requirements	April 26, 2021
Release Availability	Test Environment Opens for Phase 2d reporting requirements	June 28, 2021
Compliance Go-Live	Production Go-Live for Phase 2d reporting requirements	December 13, 2021

The Timeline can be found at https://catnmsplan.com/timeline

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.

FINRA CAT Helpdesk

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