SIAC *Securities Industry Automation Corporation*
11 Wall Street, New York, NY 10005

November 14, 2023

To: OPRA Multicast Subscribers

Subject: Expansion of OPRA Data Dissemination from a 48-Line to a 96-Line Multicast Network: **Industry Test #7 with Revised Symbol Distribution - Saturday, November 18, 2023 - Final Reminder**

What's New:

As previously announced, for optimal symbol balancing and line capacity utilization, OPRA will be expanding data dissemination from a 48-line to a 96-line multicast data distribution network.

Go-Live Date:

The Go-Live date of data dissemination on the 96-line multicast data distribution network will take place at start of day, **Monday, February 5, 2024.**

Revised 96-Line Symbol Distribution

The final symbol routing distribution has been revised based upon recent traffic patterns, and are available as CSV and Excel files.

Additional Industry Tests *(with the revised symbol distribution):*

- **Saturday, December 9, 2023 - Capacity Test only**
- **Saturday, January 20, 2024 - Functional and Capacity Tests**

The Confidence Test will take place on Saturday, February 3, 2024.

For detailed schedule information including additional tests, please consult the OPRA 96-Line Migration FAQ's, here.

Other Testing Opportunities:

– **Cert System Functional Testing:** New symbol routing test schema
    – Began: Monday, April 3, 2023
    – Ends: Friday, February 2, 2024

– Test replay dissemination with the revised 96-line distribution will be available every weeknight over Playback Test IP's (not Production IP's) between **8:00pm and 9:00pm ET** (15-minute period; variable time dependent on completion of afterhours), **began October 23, 2023.**

OPRA subnets, rendezvous points, source addresses, and multicast addresses can be found in the appendices of the Common IP Multicast Distribution specification here.

Data Subscribers who receive OPRA from connectivity service providers other than ICE Global Network (IGN) or the NMS Network must contact their connectivity service providers to coordinate testing.

Test Registration

Each OPRA Data Subscriber participating in the tests should register at CTA-OPRA-Support@siac.com .

Technical Inquiries

NMS Product Management Support Email: CTA-OPRA-Support@siac.com

NMS Production Management Support Line: 212-656-8177, Option 2 (Monday through Friday, 9:00 AM - 5:00 PM)

OPRA Migration to new network subnets, rendezvous points, source addresses, and multicast addresses
Test Date & Time: Nov 18, 2023, 9:00 AM to 1:45 PM ET (Approximate)

#	Time	Test Category	Action By	Test Description	Expected Results
Hourly Test Script					
Both Primary and Disaster Recovery Data Center on NEW Output Multicast Network with 96-Line Traffic Distribution					
1	1:30:00 AM	SOD	OPRA	OPRA Production and DR sites on the New Output Multicast addresses for both Realtime and Retransmission line, using the **96-line Traffic Distribution**. (Refer to Common IP Multicast Distribution Network Specification for network addresses)	
				OPRA to trigger Start-of-Day message on the new Output Multicast lines	Start-of-Day messages published over the new Output Multicast lines followed by the multicast Line Integrity messages every 10 seconds until the participants begin to generate data
2	1:30:00 - 9:30:00 AM	Participant Connectivity/Input	Participants	Participants to establish connectivity for OPRA Input lines	Participants establish connections
				Participants to start submitting Quote and Trade data	Quotes and trades accepted and disseminated across the 96-lines via the new multicast output lines
3	9:30:00 AM	Market Open	OPRA	Market Open	
4	9:30:00 - 10:30:00 AM	Data Verification	Participants	Participants to continue submitting Quote and Trade data	Data Subscribers to verify Data over the new Output Multicast addresses across the 96-lines
5	10:30:00 AM			End of Session (Note - An End-of-Day message will not be triggered by OPRA, but system will be rebooted for next test)	
SYSTEM RESTART - OPRA to run End of Day, reboot and run Start of Day to bring up system in a clean state (*No Network change during this restart*)					
Capacity Test for the 96-Line Traffic Distribution over the NEW Output Multicast Network					
6	11:15:00 AM	SOD	OPRA	OPRA on the New Output Multicast addresses for Realtime and Retransmission lines on the new 96-line Traffic Distribution	
				OPRA to trigger Start-of-Day message on the new Output Multicast lines	
7	11:30:00 AM - 12:30:00 PM	Capacity Test	OPRA	OPRA to simulate data for Capacity Test - 20M msg/sec to 11M msg/sec, each rate maintained for 1 second (total 10 seconds) - Pattern repeated for 60 minutes	
8	12:45:00 PM - 1:45:00 PM	Capacity Test	OPRA	OPRA to simulate data for Capacity Test - Initial Rate = 1M msg/100ms. Rate will be maintained for 4 minutes - Rate will increase by 1M msg/100ms every 4 minutes, with highest rate at 15M msg/100ms - Total duration = ~ 60 Minutes	
9	1:45:00 PM			End of Test	