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

January 16, 2024

To: OPRA Multicast Subscribers

Subject: Expansion of OPRA Data Dissemination from a 48-Line to a 96-Line Multicast Network: **Industry Test #9 with Revised Symbol Distribution - <mark>Saturday, January 20, 2024 - Final Reminder</mark>**

What's New:

<u>As previously announced,</u> 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 <u>96-line multicast data distribution</u> network will take place at start of day, **<mark>Monday, February 5, 2024.</mark>**

Revised 96-Line Symbol Distribution:

<mark>**The final symbol routing distribution has been revised based upon recent traffic patterns, and are available as <u>CSV</u> and <u>Excel</u> files.**</mark>

Test Schedule:

Final Industry Tests *(with the revised symbol distribution schema):*

- **Saturday, January 20, 2024 - Functional and Capacity Tests**
    – **Functional Test Time: 9:30 AM to 10:30 AM, ET**
    – **Capacity Test Time: 11:15 AM to 1:45 PM, ET**

<mark>**The Confidence Test will take place on Saturday, February 3, 2024.**</mark>

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

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 schema 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 <u>here</u>.

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 96-Line Industry Test and Capacity Test
Test Date & Time: Jan 20, 2024, 9:00 AM to 1:45 PM ET (Approximate)

		Hourly Test Script			
#	Time	Test Category	Action By	Test Description	Expected Results
			Both Primary and Disaster Recovery Data Center with 96-Line Traffic Distribution		
1	1:30:00 AM	SOD	OPRA	OPRA Production and DR sites 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 Output Multicast lines	Start-of-Day messages published over the 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
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 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			
		Capacity Test for the 96-Line Traffic Distribution over the Output Multicast Network			
6	11:15:00 AM	SOD	OPRA	OPRA on the Output Multicast addresses for Realtime and Retransmission lines on the new 96-line Traffic Distribution	
				OPRA to trigger Start-of-Day message on the 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	