

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

July 11, 2023

To: OPRA Multicast Subscribers

Subject: Expansion of OPRA Data Dissemination from a 48-Line to a 96-Line Multicast

Network: Industry Test #4 - Saturday, July 15, 2023 - 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.

Changes Being Made:

As part of expanding data dissemination from a 48-line to a 96-line multicast data distribution network, and to help facilitate capacity upgrades to the ICE Global Network (IGN), new subnets, rendezvous points, source addresses, and multicast addresses are being introduced (including Global Trading Hours (GTH)). Note that these changes apply to customer connections via both IGN and the NMS Network in Mahwah.

The changes are being made in two phases:

- **Phase 1**: migration of the current 48-line symbol distribution schema to new network subnets, rendezvous points, source addresses, and multicast addresses
- Phase 2: migration of the new symbol distribution schema over 96 lines

When it is Changing:

Activation of the new network subnets, rendezvous points, source addresses, and multicast addresses were completed on Monday, July 10, 2023.

Activation of data dissemination on the <u>96-line multicast data distribution</u> network is scheduled to take place at start of day, **Monday**, **October 9**, **2023**.

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

Testing Opportunities:

- Cert System Functional Testing: New symbol routing test schema

Began: Monday, April 3, 2023Ends: Friday, October 6, 2023

Industry Test #4: Saturday July 15, 2023, 9:00AM-1:45PM, ET

- OPRA
 - a) OPRA Secondary Data Center on new network addresses preparation to go live
 - b) OPRA 96-Line Industry Test Session 1 (9:00-10:30AM): OPRA Primary and Secondary Data Centers with new 96-line symbol distribution schema
 - c) OPRA Restart (10:30-11:30AM)
 - d) OPRA 96-Line Industry Test Session 2 (11:15AM-1:45PM): Capacity testing
- The test plan can be located on page 3

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 test should register at CTA-OPRA-Support@siac.com.

Technical Inquiries

- NMS Product Management Support Email: <u>CTA-OPRA-Support@siac.com</u>
- NMS Production Management Support Line: 212-656-8177, Option 2 (Monday through Friday, 9:00 AM-5:00 PM ET)

OPRA Migration to new network subnets, rendezvous points, source addresses, and multicast addresses						
Test Date & Time: July 15, 2023, 9:00 AM to 2:00 PM ET (Approximate)						
	Time	Total Code and a	Action By	Hourly Test Script Test Description	Expected Results	
#	Time	Test Category		ata Center on NEW Output Multicast Network with 96-Line Traffic Distributi		
1	1:30:00 AM	SOD		OPRA Production site on the New Output Multicast addresses for Realtime and Retransmission lines, on 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	
				Participants to establish connectivity for OPRA Input lines	Participants establish connections	
2	1:30:00 -9:30:00 AM	Participant Connectivity/Input	Participants	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 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 - 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		