



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

November 17, 2022

To: OPRA Multicast Subscribers

Subject: Expansion of OPRA Data Dissemination from a 48-Line to a 96-Line Multicast Network –
Postponement to Q3, 2023

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. Bandwidth requirements are provided below.

Changes Being Made:

In addition to expanding data dissemination from a 48-line to a 96-line multicast data distribution network, the OPRA symbol routing schema is changing.

When it is Changing:

Activation of data dissemination on the 96-line multicast data distribution network **is postponed until Q3, 2023**. Further detailed information (e.g., new activation date; revised specifications; specific industry test and test playback dissemination dates; FAQ's; final routing distribution) **will be provided at a later date**.

Current 48-Line Network:

- OPRA output traffic is distributed over 48 output lines
- Each line has data for Options series within an alpha range for the underlying symbol, Odd or Even Expiration Month, and Puts or Calls
- As the volume of data and burstiness varies often, it is challenging to evenly distribute the load across all lines
- Periodically, alpha ranges for the lines are changed to better distribute the traffic

New 96-Line Network (New Symbol Routing Schema):

- OPRA output traffic will be distributed over 96 output lines
- The alpha range and Odd or Even Expiration Month restriction will remain, but Odd or Even Expiration Day will be added to the distribution
- Data for the combination of '**Underlying Symbol + Odd or Even Expiration Month + Odd or Even Expiration Day + Puts or Calls**', within the allowed alpha range, will be published on a particular line
- A new distribution example for testing is in the Appendix of this notice, and available as an Excel file on the [OPRA web site](#) under "Specifications".
- Load balancing will be more frequent and coordinated with Data Subscribers.

Bandwidth Requirements:

The bandwidth requirements for the OPRA 96-line multicast data distribution network are as follows:

- **48-Line Actual Peaks and 96-Line Projected Peaks upon Activation:**

48-Line Actual Peaks			
	Million Msg / Sec	Million Pkt / Sec	Gbit/sec
1-ms	81.3	7.2	20.8
10-ms	70.1	6.7	18.3
100-ms	62.1	6.4	15.9

96-Line Projected Peaks Upon Activation			
	Million Msg / Sec	Million Pkt / Sec	Gbit/sec
1-ms	116.3	16.9	37.3
10-ms	100.2	14.8	32.3
100-ms	88.2	14.5	28.4

- **Data Subscribers who receive OPRA should contact their connectivity service providers for bandwidth considerations.**

General Testing Information:

- Four industry tests and the final Confidence Test will take place on designated Saturdays.
- Capacity testing will be available after select industry tests (dates to be determined).
- Test replay dissemination with the new 96-line distribution will be available every weeknight over Playback Test IP's.
- Testing in the Certification (Cert) environment utilizing new symbol routing schema and test symbol distribution will be available.
- Multicast Lines 49-96 have been publishing Line Integrity messages since July 26, 2021, in preparation for the expansion of data dissemination to 96 lines. OPRA multicast addressing can be found in Appendix D [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.

Technical Inquiries

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

Appendix: Example OPRA 96-Line Distribution (for weeknight test replay purposes only)

Line	Begin	Odd Month Call Odd Day	Odd Month Call Even Day	Even Month Call Odd Day	Even Month Call Even Day	Odd Month Put Odd Day	Odd Month Put Even Day	Even Month Put Odd Day	Even Month Put Even Day	End	Odd Month Call Odd Day	Odd Month Call Even Day	Even Month Call Odd Day	Even Month Call Even Day	Odd Month Put Odd Day	Odd Month Put Even Day	Even Month Put Odd Day	Even Month Put Even Day
1	A	X		X		X		X		ABQZZ	X		X		X		X	
2	ABR	X		X		X		X		AARM	X		X		X		X	
3	AFRM					X		X		AMC	X		X		X		X	
4	AMCA	X		X		X		X		AMZMZ	X		X		X		X	
5	AMZN	X		X						AMZN	X		X					
6	AMZN			X						AMZN			X		X			
7	AMZN					X		X		AMZN					X		X	
8	AMZN								X	AMZN								X
9	AMZNA	X		X		X		X		ARKVZ	X		X		X		X	
10	ARKW	X		X		X		X		AXP	X		X		X		X	
11	AXP					X		X		BABZZ	X		X		X		X	
12	BAC	X		X		X		X		BIAZ	X		X		X		X	
13	BIIB	X		X		X		X		BLDDZ	X		X		X		X	
14	BLDE	X		X		X		X		BWZZZ	X		X		X		X	
15	BX	X		X		X		X		CDXBZ	X		X		X		X	
16	CDXC	X		X		X		X		CLZZZ	X		X		X		X	
17	CM	X		X		X		X		COST	X		X		X		X	
18	COST					X		X		CRWD	X		X		X		X	
19	CRWD					X		X		DABZZ	X		X		X		X	
20	DAC	X		X		X		X		DHR	X		X		X		X	
21	DHR					X		X		DOCTZ	X		X		X		X	
22	DOCU	X		X		X		X		EDISZ	X		X		X		X	
23	EDIT	X		X		X		X		ETSY	X		X		X		X	
24	ETSY					X		X		FB	X		X		X			
25	FB					X		X		FSLR	X		X		X			
26	FSLR					X		X		GGB	X		X		X			
27	GGB					X		X		GOOG	X		X					
28	GOOG			X		X		X		GOOG			X		X		X	
29	GOOG							X		GOOGL	X		X		X			
30	GOOGL					X		X		GS	X		X		X		X	
31	GSA	X		X		X		X		HBBZ	X		X		X		X	
32	HSBC	X		X		X		X		INFXZ	X		X		X		X	
33	INFX	X		X		X		X		IWLZZ	X		X		X		X	
34	IWM	X								IWM	X		X					
35	IWM			X						IWM			X		X			
36	IWM					X				IWM					X		X	
37	IWM							X		IWM							X	
38	IWMA	X		X		X		X		KLDNZ	X		X		X		X	
39	KLDO	X		X		X		X		LESKZ	X		X		X		X	
40	LES	X		X		X		X		LULU	X		X		X			
41	LULU					X		X		MCNZZ	X		X		X		X	
42	MCO	X		X		X		X		MNST	X		X		X			
43	MNST					X		X		MSFSZ	X		X		X		X	
44	MSFT	X		X		X		X		NCLGZ	X		X		X		X	
45	NCLH	X		X		X		X		NDXOZ	X		X		X		X	
46	NDXP	X		X		X		X		NELZZ	X		X		X		X	
47	NEM	X		X		X		X		NKTWZ	X		X		X		X	
48	NKTX	X		X		X		X		NVAVZ	X		X		X		X	
49	NVAX	X		X		X		X		NVDA	X		X		X			
50	NVDA					X		X		OLIZZ	X		X		X		X	
51	OLU	X		X		X		X		PENMZ	X		X		X		X	
52	PENN	X		X		X		X		PROEZ	X		X		X		X	
53	PROF	X		X		X		X		QOPZZ	X		X		X		X	
54	QQQ	X								QQQ	X							
55	QQQ									QQQ								
56	QQQ			X						QQQ			X					
57	QQQ									QQQ								
58	QQQ					X				QQQ					X			
59	QQQ									QQQ						X		
60	QQQ							X		QQQ							X	
61	QQQ								X	QQQ								X
62	QQQA	X		X		X		X		RILXZ	X		X		X		X	
63	RILY	X		X		X		X		RUSZZ	X		X		X		X	
64	RUT	X		X		X		X		SCRZZ	X		X		X		X	
65	SCS	X		X		X		X		SHOP	X		X		X			
66	SHOP					X		X		SMH	X		X		X			
67	SMH					X		X		SPCDZ	X		X		X		X	
68	SPCE	X		X		X		X		SPKVZ	X		X		X		X	
69	SPXW	X		X		X		X		SPKZZ	X		X		X		X	
70	SPY	X								SPY	X							
71	SPY									SPY			X					
72	SPY			X						SPY			X					
73	SPY					X				SPY				X				
74	SPY									SPY					X			
75	SPY							X		SPY						X		
76	SPY								X	SPY							X	
77	SPY								X	SPY								X
78	SPYA	X		X		X		X		TCOMZ	X		X		X		X	
79	TCON	X		X		X		X		TLVRZ	X		X		X		X	
80	TLYS	X		X		X		X		TOZZZ	X		X		X		X	
81	TR	X		X		X		X		TSL	X		X		X		X	
82	TSLA	X								TSLA	X							
83	TSLA									TSLA			X					
84	TSLA			X						TSLA			X					
85	TSLA					X				TSLA				X				
86	TSLA									TSLA					X			
87	TSLA							X		TSLA						X		
88	TSLA								X	TSLA							X	
89	TSLA								X	TSLA								X
90	TSLAA	X		X		X		X		UCO	X		X		X			
91	UCO					X		X		USNZZ	X		X		X		X	
92	USO	X		X		X		X		VXWZZ	X		X		X		X	
93	VXX	X		X		X		X		WOQZZ	X		X		X		X	
94	WOR	X		X		X		X		XLJZZ	X		X		X		X	
95	XLK	X		X		X		X		XRT	X		X		X			
96	XRT					X		X		ZZZZZ	X		X		X		X	