



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

August 31, 2022

To: OPRA Multicast Subscribers

Subject: General Information Notice: Expansion of OPRA Data Dissemination from a 48-Line to a 96-Line Multicast Network – **Effective March 27, 2023**

What's New:

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:

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 will take place at the start of day **Monday, March 27, 2023.**

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 is distributed over 96 output lines
- The alpha range and Odd or Even Expiration Month restriction remains, but Odd or Even Expiration Day has been 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.

General Testing Information:

- Four industry tests will take place on designated Saturdays in February and March 2023. The final Confidence Test will take place on Saturday, March 25, 2023.
- 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 will NOT be available.
- Multicast Lines 49-96 have been publishing Line Integrity messages since OPRA Pillar went live on July 26, 2021, in preparation for the expansion of data dissemination to 96 lines. OPRA multicast addressing can be found in Appendix D [here](#).

Further Detailed Information:

- Further detailed information (e.g., revised specifications; specific industry test and test playback dissemination dates; FAQ's; bandwidth requirements; final routing distribution) **will be provided at a later date.**

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 | | | | | | | | | 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 | BLX | 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 | | 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 | | 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 | QOQ | X | | | | | | | | QOQ | X | | | | | | | |
| 55 | QOQ | | | | | | | | | QOQ | | | | | | | | |
| 56 | QOQ | | | X | | | | | | QOQ | | | X | | | | | |
| 57 | QOQ | | | | | X | | | | QOQ | | | | X | | | | |
| 58 | QOQ | | | | | | | X | | QOQ | | | | | X | | | |
| 59 | QOQ | | | | | | | | | QOQ | | | | | | X | | |
| 60 | QOQ | | | | | | | X | | QOQ | | | | | | | X | |
| 61 | QOQ | | | | | | | | X | QOQ | | | | | | | | X |
| 62 | QOQA | 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 | | | | | | | X | | 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 | | TLRZ | 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 | | | X | | | | | | TSLA | | | X | | | | | |
| 84 | TSLA | | | X | | | | | | TSLA | | | X | | | | | |
| 85 | TSLA | | | | | X | | | | TSLA | | | | X | | | | |
| 86 | TSLA | | | | | | | X | | 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 | | X | |
| 96 | XRT | | | | | X | | X | | ZZZZZ | X | | X | | X | | X | |