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Date: June 9, 2003
To: CBOE Members and Member Firms
From: Trading Operations
Re: CBOEdirect Hybrid (HyTS) Trading System Frequently Asked Questions

Information Circular IC03-66

1. What is hybrid?
Hybrid is the CBOE's new trading system that combines the benefits of open outcry and screen-based trading. Market makers will be able to stream quotes in to the Hybrid system. Market makers will also continue to make markets in open outcry in response to quote requests from floor brokers who will still be able to walk orders into the trading crowd.
2. How can market makers stream quotes?
Market makers will be able to stream quotes through autoquoting software that is connected to CBOEdirect through an API (FIX 4.2 or CMi). Autoquoting software can be provided either by a firm or by a third-party provider such as Actant, Risc, Brisk or Microhedge.
3. Are market makers required to be present in the trading crowd to stream quotes?
Yes. Market makers must be standing in the trading crowd to stream quotes. Market makers standing in the crowd are known as "In-Crowd Members" (ICM).
4. Can market makers participate in hybrid without streaming quotes?
Yes. Market makers can choose to trade in open outcry only or elect to send one-sided quotes (in the form of orders) to the book to either take a book or to rest an order. If a market maker trades less than 20% of his contract volume electronically, that volume will not count towards his in-person requirement. Furthermore, if a market maker who does not stream quotes trades more than 20% of his volume in that class electronically (through the use of orders in the book), the market maker will incur a continuous quoting obligation in a percentage of the series in the class. The quoting obligation is set forth in CBOE Rule 8.7(d).
5. Will market maker quotes trade against other market makers quotes?
When Market maker's quotes lock, they will not immediately trade against each other. This is referred to as the "quote lock." When a market maker's quote touches another market maker's quote, CBOE will disseminate a locked market. For example if the current quote is 1.00 – 1.20 and a market maker sends a quote of 1.20 – 1.40, CBOE will publish a new quote of 1.20 – 1.20. Initially, this market will be disseminated for a period of 10 seconds. When the time period expires, the two quotes will trade in full if they are still locked. During the time that the locked market is disseminated, customers and non-MM broker-dealers will be able to trade at the disseminated quote.

6. What if a market maker sends a market that crosses the existing market?
If a market maker posts a quote that crosses the existing market, the system will widen the incoming quote so that the market becomes locked. For example if the current quote is 1.00 – 1.20 and the incoming quote is 1.25 – 1.45, the system will widen the incoming market to 1.20 – 1.45 and disseminate the locked market of 1.20 – 1.20. After the second market quote has been changed (i.e., widened) so that it is locked, the “quote lock” processing described in the previous question will be used.
7. How will a market maker know if his quote is locked with another market maker?
When CBOE receives the quote that causes the lock it will publish the locked quote through the APIs. When an autoquoting system receives the locked quote it should know that it is part of that locked market. If the quote remains locked for a period of time (1 second) all of the market makers that are part of the lock will receive a second message through the API indicating the IDs of the market makers that are locked. At that time either of the market makers can invoke firm quote (currently 1 contract) in open outcry.
8. How will orders from in-crowd members be treated?
Orders from ICMs will be treated exactly as quotes from ICMs. This includes the quote lock described above and quote trigger described below. ICM orders will never route to PAR, they will route directly to the book.
9. How will incoming marketable orders be treated?
Incoming marketable orders from customers (origin code “C”) and non-market maker broker-dealers (origin codes “B” and “F”) will automatically execute against the disseminated market as long as CBOE is the NBBO. Orders from market makers (CBOE market makers outside the crowd - origin “M”, market makers at other exchanges - origin “N” and underlying stock specialists – origin “Y”) will not be automatically executed but will be routed to BART.
10. What will happen if CBOE is not the NBBO?
When CBOE is not the NBBO incoming orders will be routed to PAR. There is no automatic step-up in the hybrid system. After the order is routed to PAR, the crowd can step-up, the PAR broker can send a linkage order or the PAR broker can choose to trade with orders and/or quotes in the book using the trade with book button on PAR.
11. How will incoming non-marketable orders be treated?
Incoming orders from origins “C”, “F” and “B” will be booked immediately if they do not affect the quote. If these orders do affect the quote they will be routed to PAR where the Limit Order Display Rules apply. All incoming orders from origins “M”, “N” and “Y” will be routed to BART, where they can be routed to a mobile PAR for floor broker representation. M, N, Y orders will not be routed to the crowd PAR.
12. When there is more than one market maker quoting at a given price, how is an incoming order electronic order allocated to the market makers at that price?
Incoming orders are allocated using UMA (Ultimate Matching Algorithm). UMA gives equal weight to presence in the crowd as well as size posted. Specifically, UMA is the average of A, an equal percentage based on the number of participants, and B, each participant’s size as a percentage of total size (pro-rata).

13. Do customers retain priority?
Yes. Customer orders resting in the book will retain priority over all other market participants as they do today.
14. Will orders from other market participants (besides customers) be accepted in the book?
Yes. Orders from non-market maker broker-dealers (origins "B" and "F") will be accepted in the book. Initially, orders from origins "M", "N", and "Y" will not be book eligible and will have to be represented by floor brokers.
15. How will broker-dealer orders participate in UMA?
When there are broker-dealer orders on the book, all of the broker-dealer orders will be counted as one market participant. For example if there are 3 ICMs and 3 broker-dealers in the book, there will be a total of 4 market participants (3 ICMs and 1 for all broker-dealer orders). The allocation to the broker dealers will then be shared among the 3 broker dealer orders using UMA again.
16. How do market makers buy the book?
Since there will no longer be any manual interaction with the book, market makers must send one- or two-sided quotes to trade with the book.
17. Does the first ICM to take the book get the whole book?
No. There is a new process called quote trigger, which allows all ICMs who attempt to buy the book within a very short time period (currently 5 seconds) to share the book order. The book order will be allocated to ICMs using UMA.
18. Will ICMs receive notification when a quote trigger occurs?
No. Crowd members will not receive a notification when the quote trigger occurs.
19. Will DPMs receive a participation right?
Yes. DPMs will get their participation right prior to UMA allocation to the remaining participants. A DPM will receive his allocation after all customer orders at the price are filled. DPMs will receive 50% of the order if there is only one other participant at the price, 40% of the order if there are two other participants at the price and 30% if there are three (or more) other participants at the price. If the remaining UMA participants cannot fill the remainder of the order, the DPM will receive an additional amount to fill the order.
20. Will market makers retain split-price priority for trades executed electronically?
No. Incoming orders will execute automatically at the top-of-the-market. If the order is still marketable and CBOE is still the NBBO the order will automatically execute at the next price. There is currently no quote re-generation or ability to "ladder" quotes. This will be available in a later version of Hybrid.
21. How will complex orders trade in hybrid?
Complex orders will route to PAR or BART for representation in the crowd as they do today.

22. Which products will be on hybrid?
CBOE will begin hybrid trading in equity options. As conditions warrant hybrid may be introduced in index products.
23. Will ROS be available for the open?
No. The new hybrid opening system (HOS) will be used. HOS utilizes an algorithm to create an opening price based on all market maker and DPM quotes as well as the orders in the book. HOS will open each series at the price where the most volume can be traded. When the opening print on the stock is received, the class begins opening rotation and a 15-second timer is started. After the 15-second timer expires, series will begin opening randomly over the next 15 seconds.
24. How will market makers know what the opening price will be?
The pre-open quotes and the Expected Opening Price (EOP) and Expected Opening Size (EOS) will be disseminated through the APIs and will be shown on RCNs prior to the open. The EOP and EOS will be disseminated every 3 seconds during the opening rotation period.
25. What will happen on the open if the opening stock information is bad?
The DPMs quote will be required for the series to open. If the DPM's quote is not present, the opening process will be discontinued until the DPM resends his quotes.
26. Will the RCN displays be different than they are currently?
Yes. RCNs will have new information including book information for both customers and non-customers. The disseminated quote and size will be shown. The best non-ICM market and size will be shown and the customer size at the best non-ICM price will be shown. Additionally there will be changes to the display of NBBO information, including showing the difference between the Best-of-the-Rest and the CBOE quote.
27. What systems will no longer be available in hybrid?
RAES, LOU, EBook, Trigger, AutoQuote/Vendor Quote, ROS, VTATs and manual quoting will not be available for hybrid classes.