

## Advisory Notice

Clearing House

TO: Clearing Member Firms,  
Chief Financial Officers,  
Back Office Managers

FROM: Clearing House Department

DATE: February 17, 2004

ADVISORY #: 04-20

SUBJECT: **Implementation of Many-to-One and Many-to-Many Matching for Pit SLEDs**

As previously announced in Advisory 04-15 (Feb. 9), the initial deployment of SLEDs (Single-Line Entry of Differential Spreads) functionality for pit trades makes use of one-to-one trade matching only.

For example, if the buy side submits a SLED for a quantity of 50, and the sell side submits two SLEDs, one for 30 and a second for 20, these will not match.

In this case, if a firm discovers that one of its pit SLEDs trades is not matching because the other side has submitted the trade in two or more pieces, the firm must break up its single SLED trade into separate pieces, so as to match with the individual SLEDs trades submitted by the other side.

**We plan to deploy enhancements shortly to the trade match process for pit SLEDs so that this special handling by firm back-office staff will no longer be necessary. The tentative launch date for this enhancement is Friday, March 5<sup>th</sup>. With this enhancement, SLEDs will match, like ordinary pit trades, as long as the total quantity matches on both sides.**

This advisory provides important details about how this enhanced match process for pit SLEDs will work. It will explain:

- How the special match process will do many-to-one matches, many-to-many matches, and partial quantity matches
- How this process will run initially only at end-of-day and will not perform any automated opposite-firm corrections
- How it will be implemented as a series of one-to-one partial-quantity matches, where the trade with the larger quantity will be broken up into a new trade (which will then match with the trade on the other side), and the original trade (which will have its trade quantity reduced to the remaining unmatched amount)
- How this process will generate all normal SLEDs trade confirmation messages, which will be routed to firms using existing SLEDs message routing rules, and which will be tagged with a special code so that firms will be able to identify these messages as ones which have been generated by the special end-of-day match process

- Why we believe that there will be no impact to firm's bookkeeping systems, and how we will support optional testing so that firms can verify this.

Firms may wish to consult Advisory CCL 70, originally published December 12, 2003 and revised on December 23rd, which provides the details of clearing and bookkeeping processing for SLEDs, and is available at: <http://www.cme.com/files/CCL70a.pdf>.

A separate advisory will be published shortly with the testing schedule and implementation date.

### **The special match process**

**At end-of-day, SLEDs will match many-to-one, many-to-many, and on partial quantities:**

**Initially, this enhancement for SLEDs trade matching will be deployed only at end-of-day.** It will provide trade matching for SLEDs for cases such as:

**Many-to-one:** the total trade quantity on one side, matches the quantity of one trade on the other. For example:

on the buy side:  
buy 45  
on the sell side:  
buy 10  
buy 20  
buy 15

**Many-to-many:** the total trade quantity on one side, matches the total trade quantity on the other. For example:

on the buy side:  
buy 3  
buy 3  
buy 4  
on the sell side  
sell 5  
sell 5

**Partial-quantity ("equals-cleared") matching:** where quantities do not match. The trade with the smaller quantity will match with that many of the trade with the larger quantity. The remaining quantity on the larger trade remains unmatched. For example:

on the buy side:  
buy 8  
on the sell side:  
sell 5

The sell-side will match completely. On the buy side, 5 will match, leaving 3 unmatched.

**No automatic opposite-firm corrections:** initially, this special end-of-day match process for pit SLEDs will not perform automatic corrections of opposite-firm errors.

**An example of how it works:**

Suppose we have one trade on the buy side, matching with two trades on the sell side:

On the buy side:  
Trade 1: buy 50  
On the sell side:  
Trade 2: sell 30  
Trade 3: sell 20

Step 1: create a new buy trade to match one of the sell trades, and reduce the trade quantity on the original buy trade. So we now have:

On the buy side:  
Trade 4: buy 30 (new trade has been created)  
Trade 1: buy 20 (reduced from 50)  
On the sell side:  
Trade 2: sell 30  
Trade 3: sell 20

Step 2: the new buy trade matches with the sell trade. We now have:

Trade 4: buy 30 --- matched with Trade 2: sell 30

Remaining unmatched:  
On the buy side:  
Trade 1: buy 20  
On the sell side:  
Trade 3: sell 20

Step 3: the remaining two trades match. We now have:

Trade 4: buy 30 --- matched with Trade 2: sell 30  
Trade 1: buy 20 -- matched with Trade 3: sell 20

Generically, we are accomplishing many-to-one matching and many-to-many matching with a series of one-to-one partial-quantity matches. The process can be summarized as follows:

**Take two trades which would otherwise match except that the quantities are unequal.**

**Take the trade with the larger quantity:**

**Create a new trade with quantity equal to the quantity of the trade on the other side.**

**Reduce the quantity on the original trade to be equal to the remaining quantity.**

**The new trade, and the trade on the other side, now match.**

This process of **one-to-one partial-quantity matches** repeats to allow any combination of many-to-one and many-to-many matching to occur.

**Trade confirmation messages resulting from the special end-of-day match process:**

Confirmation messages are generated for each of the processes which support the special SLEDs end-of-day matching. Let's go back to our earlier example, where we have one trade on the buy side, matching with two trades on the sell side:

On the buy side:  
Trade 1: buy 50  
On the sell side:  
Trade 2: sell 30  
Trade 3: sell 20

Step 1: create a new buy trade to match one of the sell trades, and reduce the trade quantity on the original buy trade. So we now have:

On the buy side:  
Trade 4: buy 30 (new trade has been created)  
Trade 1: buy 20 (reduced from 50)  
On the sell side:  
Trade 2: sell 30  
Trade 3: sell 20

**A "new trade" confirmation message will be generated for trade 4.**

**A "change" confirmation message will be generated for trade 1, reducing the quantity from 50 to 20.**

Step 2: the new buy trade matches with the sell trade. We now have:

Trade 4: buy 30 --- matched with Trade 2: sell 30

Remaining unmatched:  
On the buy side:  
Trade 1: buy 20  
On the sell side:  
Trade 3: sell 20

**A "match" confirmation will be generated for trade 4 and another one for trade 2.**

Step 3: the remaining two trades match. We now have:

Trade 4: buy 30 --- matched with Trade 2: sell 30  
Trade 1: buy 20 -- matched with Trade 3: sell 20

**"Match" confirmations will be generated for trade 1 and trade 3.**

**Whether firms receive these confirmation messages, which ones they receive, and whether they receive leg-level or SLED-level confirmation messages, will be controlled by the existing message routing rules which firms have defined for pit SLEDs.**

Note, however, that for the purpose these routing rules, these confirmation messages will be assumed to have been generated via a transaction entered via the SLEDs user-interface rather than submitted via message.

If provided in TREX format (as opposed to FIXML), these confirmation messages will be provided with an **M1** block containing a new informational message denoted by message code **M350**, with meaning **Message generated via special end-of-day match process**. The message severity level will be **I**, meaning that this is an informational message. Firms may use the presence of this special message code to identify messages generated via the special end-of-day match process.

### Impact to Firms and Firm Bookkeeping Systems

Other than the new value for the informational message code on the **M1** block, there is no impact to the SLEDs processing or messaging, and firms already handle all of the confirmation message types that will be generated by the special match process. Any impact to firms should also be mitigated by the fact that the process will run initially only at end-of-day.

To illustrate, let's suppose your firm submitted a SLED trade as a buy for 50, and the opposite firm submitted two trades, a sell for 30 and a sell for 20. At approximately 7 pm, when the special end-of-day match process runs, the system would generate the following confirmation messages for your firm:

- A "new trade" confirmation message, for a new trade ID for a quantity of 30
- A "match confirm" message for this new trade, indicating that it matched
- A "change confirm" message **for the original trade ID**, indicating that the trade quantity is reduced from 50 to 20
- A "match confirm" message for the original trade, indicating that the trade quantity of 20 is now matched.

In other words, the messages generated **will be exactly the same** as if, using the Front-End Clearing browser-based user interface, you had entered the new SLED trade yourself for a quantity of 30 and reduced the trade quantity on the original trade to 20.

Since firms already have their routing rules for SLEDs trade messages set up so that they receive all desired SLEDs message types, and since firms are already able to process all SLEDs confirmation message types they are set up to receive, we anticipate that there will be no systems impact.

### How firms will be able to verify that there is no systems impact

In the very near future we will announce a test date and publish a very short test script which will allow firms to verify that there is no impact to their bookkeeping systems. The test script will provide a very small number of SLEDs trades for firms to submit (either via TREX message or via the user interface), which will then generate for the firm all of the different confirmation message types which could result from the special match process.

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