

Information Memo



11 Wall Street
New York, NY 10005

Trading Technology

February 2, 2009
(Technical Update to
January 20th, 2009 information memo)

TO: All NYSE and NYSE Alternext US Members, Member Organizations and Vendors
Interfacing with the Common Customer GatewaySM (CCG)

SUBJECT: Decommission of SuperDot[®]: Migration to New Database (SDBKSM)
for NYSE and NYSE Alternext US securities

Route To: **Technology and Operations Officers**

As previously announced in the January 20, 2009 Information Memo titled “New Database (SDBKSM) Stock Migration and Continuation of Reduced Latency to NYSE and NYSE Alternext US”, member firms were informed that the NYSE completed the migration to the new Common Customer GatewaySM order entry system and will begin to implement Phase II of our systems upgrades.

This technical notice provides the details for the functional enhancements being introduced as part of the stock migration to the new SDBKSM Database. Current NYSE and NYSE Alternext US Equities Trading functionality remains, unless explicitly stated otherwise.

In addition, a SDBK FAQ has been included for your reference at end of this notification.

The following enhancements/modifications may require system changes for your firm:

1. Enhanced Cancel Processing

Currently, when a targeted order is fully executed while a Cancel Replace message is in route between SuperDot and DBK, the firm receives a “Delete” message, not a “Replaced” message.

- a. SDBK will not send “Delete” messages on the replacement orders to the firms.
- b. Once the Cancel Replace message has been fully processed, SDBK will now generate:
 - i. a “Replaced” message with an updated leaves quantity in Tag 151; or
 - ii. a “Cxl Reject” message if the target order is fully executed, reducing replacement order to zero.

Currently, the “Replaced” messages generated from the SuperDot database for non-migrated stocks do not provide all of the replacement order information.

- a. SDBK will provide all the replacement order information on “Replaced” messages (Msg Type “8”) in response to Cancel Replace (Msg Type “G”).
- b. The “Replaced” message will contain <Tag 37> - OrderId with the value received in <Tag 11> - ClOrderId from the Cancel Replace message (Msg Type “G”).

Currently, when Partial Cancels or Cancel Replace messages have not been fully processed by SuperDot, subsequent cancellation messages are processed in the order received.

- a. SDBK will reject subsequent cancellation messages when there is an existing cancellation message that has not been fully processed.

Currently, when a firm uses Cancel Replace messages to reduce order quantity, the customer loses standing in Display Book.

- a. SDBK will support a Partial Cancel message using the Order Cancel Request (Msg Type “F”) with the following additional FIX tags and will maintain a customer’s standing in Display Book.
 - i. <Tag 9429> - CMSLeavesQty, representing the newly desired executable quantity
 - ii. <Tag 9428> - CxlQty
- b. SDBK will provide all the original order information on “Replaced” messages (Msg Type “8”) in response to Partial Cancel message with an updated leaves quantity in Tag 151.
- c. The “Replaced” message will contain <Tag 37> - OrderId with the value received in <Tag 37> - OrderId from the Order Cancel Request message (Msg Type “F”).
- d. SDBK will not support the Order Cancel Replace (Msg Type “G”) when the replacement quantity is less than the original order quantity.

2. New Partial Round Lot (PRL) processing

Currently, the odd lot portion of a PRL order is executed with the last round lot execution at that price.

- a. The new SDBK system will split the odd lot portion of a PRL from the round lot portion and execute the odd lot subject to odd lot pricing rules. You will no longer receive a PRL execution. Instead, you will receive an execution report for round lots and the odd lot portion separately.
- b. The odd lot portion of the PRL order will receive a separate report with its own billing indicator. It may not receive the same execution price as the last round lot execution.
 - i. The following tag will be populated with a “3” (Blended) on odd lot portion of PRL executions or a “7” (Closing/Blended) on MOC/LOC odd lot portion of PRL executions:
 1. <Tag 9578> - BillingIndicator

3. Algo Routing/Default Routing will not be supported

Currently, firms that subscribe to the Algo Routing service have quantity and price ranges used by the SuperDot system that allows SuperDot to determine whether orders should be routed to floor brokers or to DMMs.

- a. Algo/Default routing will not be supported for stocks migrated to SDBK.
- b. Firms must provide the target Booth Agency or Badge ID in the following tag for an order to be routed to a Booth Agency or e-Broker.
 - i. <Tag 143> - TargetLocationID, representing Booth Agency or Badge ID
 - ii. <Tag 57> - TargetSubID, must also be populated with the value “4”

The following optional services and informational updates should be considered for your firm:

4. New "Done for Day" message service:

Currently, the Designated Market Maker (DMM) has the capability to manually generate "Nothing Done" messages.

- a. The new SDBK system will no longer support "Nothing Done" messages.
- b. The "Done for Day" service is an optional service that will return outs for all "Day" orders sent to the DMMs that are not executed. This service will require activation. We will provide contact information in the next notice.
- c. The new SDBK system will automatically generate "Done for Day" messages against open "Day" orders when the stock has a closing sale or at 4:30 pm if there is no closing sale for a particular stock.
 - ii. The following tags will be populated with the value "3", representing Done for Day:
 1. <Tag 39> - OrdStatus
 2. <Tag 150> - ExecType
- d. The "Done for Day" service will not initially be supported for open "Day" orders sent to BBSS or e-Broker; however plans are in progress for supporting this service in the future for NYSE Broker systems.

5. Increased Order Quantity to Display Book (NY Matching Engine):

Currently, the maximum quantity per order that can be routed to the Display Book is 3 million shares.

For stocks migrated to SDBK, the maximum quantity per order will increase to 6.5 million shares; however, the size for auto-execution will remain at 1 million shares.

6. Enhanced Acknowledgement processing

Currently, SuperDot generates acknowledgement messages to the customer.

- a. For each security migrated to SDBK, the acknowledgement messages will not be generated by SuperDot or SDBK, but will now be generated by the Display Book stock process, which acknowledges that the order is in the order book. This will provide the customer with a better sense that the order is actually on the Display Book.

7. New Expanded Account <Tag 1>

The current size supported by this tag is not sufficient for firms to provide their customer's account information.

- a. The new SDBK system will support up to 32 characters in <Tag 1> - Account field. This will be available once ALL stocks have migrated to the new SDBK database.
- b. SDBK will return the information provided in this tag on all responses to firms via CCG.
- c. The expanded <Tag 1> - Account field will not initially be supported for orders sent to BBSS or e-Broker; however plans are in progress for supporting it in the future.

8. Crossing Session I replaced by NYSE MatchPointSM

Currently, One-sided and Two-sided Crossing Session I orders are processed by SuperDot via CCG.

- a. Crossing Session I will not be supported by SDBK. NYSE MatchPoint will support Crossing Session I type orders. If you are not already directly connected to MatchPoint, please access the following link to find out more information about this product. <http://www.nyse.com/matchpoint>
- b. The GTX time-in force will continue to be accepted by CCG and SDBK; however, GTX orders will be treated the same as GTC orders, and will not be considered eligible for MatchPoint. GTX orders will be eliminated at a future date.

9. New “Cancel on Disconnect” Service

Currently, when there is a CCG FIX session disconnect resulting from a connectivity issue, firms lose the ability to manage their orders directly.

- a. The new SDBK system will support a “Cancel on Disconnect” service.
- b. The “Cancel on Disconnect” service is an optional service that will return orders once the firm regains connectivity for all “Day” orders and current day “GTC/GTX” orders sent to the DMMs. This service will be available once ALL stocks have migrated to the new SDBK database. This service will require activation. We will provide contact information in the next notice.

During the migration period, a firm that loses connectivity may contact our Connectivity Helpdesk at 1-888-689-7739 and have their orders canceled for stocks that have migrated to SDBK, similarly to how they handle SuperDot orders upon disconnect.

- c. If a firm loses its CCG connection, CCG will initiate an Order Cancel request on behalf of the firm, for ALL open “Day” orders and current day “GTC/GTX” orders. Once the firm regains connectivity, it will receive UROUTs on canceled orders.
 - i. The following tags will be populated with the value “4”, representing Canceled:
 1. <Tag 39> - OrdStatus
 2. <Tag 150> - ExecType
- d. The service will not be supported for orders sent by a firm to BBSS or e-Broker.

10. New “Bulk Cancel” Service

Currently, firms do not have the capability to electronically request a bulk cancellation of orders.

- a. The new SDBK system will support a “Bulk Cancel” service.
- b. The “Bulk Cancel” service is an optional service that will return outs for all orders sent to the DMMs, based on the firm’s selection criteria. This service will be available once ALL stocks have migrated to the new SDBK database. This service will require activation. We will provide contact information in the next notice.

During the migration period, a firm may contact our Connectivity Helpdesk at 1-888-689-7739 and have orders canceled for stocks that have migrated to SDBK, as they do today for SuperDot orders.

- c. When fully rolled out firms will be capable of sending a “Bulk Cancel” message, using an Order Cancel Request (Msg Type “F”) with Tag 37 – OrderId set to “-999”.
 - i. The following tags will also be available for filtering the types of orders targeted for cancellation:
 1. Tag 49 – SenderCompId, populated with “#NYnn”, where “nn” represents connection Id.
 2. Tag 115 – OnBehalfOfCompId
 3. Tag 55 – Stock Symbol
 4. Tag 54 – Side
 5. Tag 59 – Time-in Force
 6. Tag 40 – OrderType
- d. The firm will receive UROUTs for their canceled orders.
 - i. The following tags will be populated with the value “4”, representing Canceled:
 1. <Tag 39> - OrdStatus
 2. <Tag 150> - ExecType
- e. The service will not be supported for orders sent to BBSS or e-Broker.

11. Additional SuperDot functionality that will be retired with the introduction of the new SDBK database:

- a. Cash, Next Day and Seller’s Option settlement types;
- b. Price Filter functionality;
- c. Ex-clearing house trades;
- d. Price is Correct, Stop Stock and TLTC admin responses.

If you have any business questions relating to the New SDBK Database stock migration, please contact your NYSE Relationship Manager or Robert Airo at (212) 656-5663.

A future notification will outline the migration schedule and test facilities for member firms. In advance, we will begin production of this new service in a “beta-production” mode. Specific dates will be announced soon.

For customer support regarding FIX connectivity and technical questions, please contact our Connectivity Helpdesk at 1-888-689-7739 or send an email to connectivity@nyx.com – please place “SDBK” in the subject line.

Reference Materials:

- “New Database (SDBK) Stock Migration and Continuation of Reduced Latency to NYSE and NYSE Alternext US”, dated January 20th 2009.
<http://www.nyse.com/pdfs/012009TradingTechInfoMemo-SDBK.pdf>
- NYSE MatchPointSM - information about this product can be accessed via the following link:
<http://www.nyse.com/matchpoint>

Member Firm Customer Service
SDBKSM FAQ

The purpose of the following pages is to highlight certain frequently asked questions and to provide additional guidance on SDBK stock migration.

Q1: What is SDBK?

A1: SDBK is the Super Display Book application and the new database for NYSE and NYSE Alternext US equities traffic sent to the Display Book, the matching engine for NYSE and NYSE Alternext, replacing the current SuperDot system. Our initial implementation of SDBK will provide significant improvements in performance and functionality replacing the existing SuperDot database. SDBK leverages NYSE ARCA's binary API and shared memory technology for increased throughput, reduced latency and reduced complexity of impact of any failovers.

Q2: I see SDBK will be implemented on a stock by stock basis. Where can I find out more about the stock migration plan? How long do you expect the stock migration to SDBK to take?

A2: The details and schedules for the stock migration will be communicated in future notices accessible via the following link on NYSE Trader page.
http://traderupdates.nyse.com/?sa_campaign=/internal_ads/callouts/traderupdates

Q3: What will the differences be between migrated stocks and non-migrated stocks?

A3: The technical differences being introduced for the SDBK migrated stocks are detailed within this notice. For stocks that have migrated, firms need to know that certain processing will be slightly different.

Q4: You spoke about latency improvements but you haven't given me any details. What can I expect?

A4: With the implementation of the CCG system in Phase I, customers experienced a 40% reduction in latency when accessing the NYSE and NYSE Alternext US cash equity markets from approximately 110 milliseconds to an average of 65 milliseconds to reach our matching engine. Although full testing is not complete, we expect latency to be below 10 ms.

Q5: Where are my orders acknowledged from currently? Where will they be acknowledged from once SDBK is rolled out?

A5: Currently, SuperDot generates acknowledgement messages to the customer. When SDBK is rolled out, the acknowledgement will be generated by the Display Book stock process, which will provide the customer with a better sense that their order is actually accepted by the Display Book.

Q6: What will happen to my open GTC/GTX orders in SuperDot?

A6: All open GTC/GTX orders in the migrated stock will be transferred to the new SDBK on the evening prior to the stock trading on the following day. Corporate Actions will be applied, if applicable. GTX open orders will be treated the same as GTC orders and will not be considered eligible for NYSE MatchPointSM.

In the event of a fallback to SuperDot, all existing orders routed to SDBK, including GTC orders, will be canceled. Every effort will be made to return UROUT's (cancellations) for these orders. If fallback happens during the day, new orders for the particular stock will not be accepted for a period of time, expected to be less than 2 minutes, until the fallback process to SuperDot is completed. Orders, including new GTC orders, will then be accepted and routed to SuperDot. Any system issues will be communicated via NYSE Trader Update.

Q7: What will happen to Crossing Session I?

A7: Crossing Session I will not be supported by SDBK. NYSE MatchPoint will support Crossing Session I type orders. The GTX time-in-force will continue to be accepted by CCG and SDBK; however, GTX orders will be treated the same as GTC orders, and will not be considered eligible for MatchPoint. GTX orders will be eliminated at a future date. If you are not already directly connected to NYSE MatchPoint, please access the following link to find out more information about this product.
<http://www.nyse.com/matchpoint>

Q8: Will the "Done for Day" message be sent automatically or must I subscribe for the service? Will the "Done for Day" message be on session by session or order by order basis?

A8: The "Done for Day" service is an optional service that will return outs for all "Day" orders sent to the DMMs that are not executed when the stock has a closing sale or at 4:30 pm if there is no closing sale for a particular stock.

The "Done for Day" service will not initially be supported for open "Day" orders sent to BBSS or e-Broker; however plans are in progress for supporting this service in the future for NYSE Broker systems. This service will require activation. We will provide contact information in the next notice.

Q9: Will I be able to request “cancel all on disconnect”?

A9: Yes, the “Cancel on Disconnect” service is an optional service that will return orders once the firm regains connectivity for all “Day” orders and current day “GTC/GTX” orders sent to the DMMs. This service will be available once ALL stocks have migrated to the new SDBK database. The service will not be supported for orders sent by a firm to BBSS or e-Broker. We will provide contact information in the next notice.

During the migration period, a firm that loses connectivity may contact our Connectivity Helpdesk at 1-888-689-7739 and have their orders canceled for stocks that have migrated to SDBK, similar to how they handle SuperDot orders upon disconnect.

Q10: Will I be able to bulk cancel my orders?

A10: Yes, the “Bulk Cancel” service is an optional service that will return orders for orders sent directly to the DMMs, based on the firm’s selection criteria. The filtering options are provided in section 10 of this notice. This service will be available once ALL stocks have migrated to the new SDBK database. The service will not be supported for orders sent by a firm to BBSS or e-Broker.

During the migration period, a firm may contact our Connectivity Helpdesk at 1-888-689-7739 and have orders canceled for stocks that have migrated to SDBK, as they do today for SuperDot orders.

Q11: How will PRLs be processed? Will I get one or two execution reports? Will I receive a separate billing indicator for the odd lot portion?

A11: The new SDBK system will split the odd lot portion of a PRL from the round lot portion and execute the odd lot subject to odd lot pricing rules. You will no longer receive a PRL execution. Instead, you will receive an execution report for round lots and the odd lot portion separately. The odd lot execution will receive its own billing indicators. It may not receive the same execution price as the last round lot execution.

Q12: Today, I don’t always receive a “Replaced” or “Cxl Reject” message in response to my cancel replace. Will I receive these messages when SDBK rolls out? Today when I receive a “Replaced” message, it doesn’t return all the replacement order information. Will SDBK return the replacement order information on “Replaced” messages?

A12: Yes, you will always receive a response to a cancel replace message from the new SDBK database. “Replaced” messages from SDBK will provide all the replacement order information. Additional details are provided in section 1 of this notice.

Q13: When I send multiple cancels in a row, what message will I get back if my first cancel is still being processed?

A13: SDBK will reject subsequent cancellation messages when an existing cancellation message has not been fully processed.

Q14: What will happen if I send a cancel/replace to reduce quantity? What message type should I use to reduce quantity?

A14: SDBK will reject cancel replace messages when the replacement quantity is less than the original order quantity. SDBK will support a Partial Cancel message using the Order Cancel Request (Msg Type "F"), which will retain a customer's standing in Display Book. Additional details are provided in section 1 of this notice.

Q15: When I send my customers' account information on orders it is not returned on activities. Will SDBK return this tag? Also, the current size supported is not sufficient. Will SDBK support a larger size?

A15: SDBK will return the customers' account information provided on orders on all activities. SDBK will support up to 32 characters. The expanded account field will not initially be supported for orders sent by firms to BBSS or e-Broker; however, plans are in progress for supporting it in the future. Additional details are provided in section 7 of this notice.

Q16: Will Algo/Default Routing be supported?

A16: No. Algo/Default routing will not be supported for stocks migrated to SDBK. Firms will be required to provide the target Booth Agency or Badge ID to route their orders to Floor Brokers. Additional details are provided in section 3 of this notice.

Q17: Are there any other changes that I need to know about?

A17: Yes, the following functionality will be retired:

- Cash, Next Day and Seller's Option settlement types;
- Price Filter functionality;
- Ex-clearing house trades;
- Price is Correct, Stop Stock and TLTC admin responses.