

# ALPHA-X AND ALPHA DRK TECHNICAL CHANGES OVERVIEW



# Overview

TMX Equities Trading is introducing a new market with two new order books: Alpha-X™ and Alpha DRK™. The goal of the new order books is to provide a democratized trading environment, with a focus on innovation and execution quality. Innovative new order types, together with an order processing delay, are expected to afford the natural investor a high-quality trading experience, with protections against adverse selection. Highlights of the market are as follows:

- **Alpha-X order book:** This is a visible/lit order book and will have all of the same order types and trading functionalities available on the Alpha exchange today. In addition, the Alpha-X book will also have the new Smart Limit™ order type available.
- **Alpha DRK order book:** This is a dark order book with a comprehensive suite of pegged (Primary, Market, Minimum Price Improvement, Midpoint) market and limit order types. In addition, the Alpha DRK book will also have the new Smart Peg™ order type available.
- **Smart Limit order:** The Smart Limit order is a new visible order type, to be available only on Alpha-X, whose booked price is influenced by the TMX Quote Decay Signal™. If the TMX QDST™ is "OFF" at time of entry, a Smart Limit order books at its limit price. When the TMX QDS turns "ON", resting Smart Limit orders are automatically repriced one tick less aggressive than the ABB/ABO.
- **Smart Peg™ order:** Smart Peg orders are a new dark order type that will rest with the booked price at the near-side ABBO. The calculated discretionary price for a Buy-side Smart Peg will be the Min(Midpoint, Contra-side DRK order at Lowest price <= Midpoint), a sell-side is the inverse, Max(Midpoint, Contra-side DRK order at Highest price >= Midpoint). When trading at the discretionary price, Smart Peg orders will allocate behind all other dark orders of the same-side at the lowest priority. The order type provides participants the ability to achieve a more desirable execution price for providing liquidity to the marketplace and with price improvement to the contra-side order.
- **Static Order Processing Delay:** All orders on Alpha-X and Alpha DRK are subject to a 3 millisecond Static Order processing delay. This can be bypassed by marking an order as post-only with the required minimum order size.

These changes are currently available for testing in **GTE** and will be effective in **Production on Monday, October 23, 2023**.

Specifications are available through the

[TMX WEBSTORE](#)

For more information, please visit

[ALPHA-X / ALPHA DRK](#)

## Market Sessions for Alpha-X and Alpha DRK

TIME (ET)	SESSION	BEHAVIOR
7.00 A.M - 8.00 A.M	Pre-Open	New orders and order modification requests are not allowed. Cancels are permitted.
8.00 A.M - 5.00 P.M	Continuous Trading	All order types are accepted.
5.00 P.M - 5.30 P.M	Extended Hours Cancel	Market Operations can cancel order/trades or add trades.

# Alpha-X and Alpha DRK Features

FEATURE	DESCRIPTION
<b>Order Books</b>	<ul style="list-style-type: none"><li>• Visible Order Book</li><li>• Dark Order Book</li></ul>
<b>Order Durations</b>	<ul style="list-style-type: none"><li>• Day</li><li>• Good Till Canceled</li><li>• Good Till Date</li><li>• Immediate or Cancel</li><li>• Fill or Kill</li></ul>
<b>Order Sides</b>	<ul style="list-style-type: none"><li>• Buy</li><li>• Sell</li><li>• Sell Short</li><li>• Cross - only available on Alpha-X</li></ul>
<b>Order Types</b>	<ul style="list-style-type: none"><li>• Market</li><li>• Limit (including Smart Limit)</li><li>• On Stop</li><li>• Pegged (Primary, Market, Minimum Price Improvement, Midpoint and Smart Peg) - only available on Alpha DRK</li></ul>
<b>Order Attributes</b>	<ul style="list-style-type: none"><li>• Anonymous</li><li>• Bypass Marker</li><li>• Iceberg</li><li>• Broker Preferencing</li><li>• Post Only</li><li>• MinQty</li><li>• Minimum Interaction Size (MIS)</li><li>• Pegged Offsets</li></ul>
<b>Self Trade Prevention</b>	<ul style="list-style-type: none"><li>• Cancel Newest</li><li>• Cancel Oldest</li><li>• Decrement and Cancel</li><li>• Trade and Suppress</li><li>• XM (No Trade) - applicable to all dark order on Alpha DRK</li></ul>
<b>Order Protection Rule (OPR)</b>	<ul style="list-style-type: none"><li>• Directed Action Order (DAO)</li><li>• OPR cancel</li><li>• OPR reprice</li></ul>

<b>Cross Types</b>	<ul style="list-style-type: none"> <li>• Basis</li> <li>• Bypass</li> <li>• Contingent</li> <li>• Internal</li> <li>• VWAP</li> </ul>
<b>Cross Interference</b>	<ul style="list-style-type: none"> <li>• Non Interference Crosses</li> </ul>
<b>Regulatory Markets</b>	<ul style="list-style-type: none"> <li>• SS: Significant Shareholder</li> <li>• IA: Insider Account</li> <li>• SME: Short Marking Exempt</li> </ul>
<b>Order Allocation</b>	<ul style="list-style-type: none"> <li>• Price/Broker/Time</li> </ul>

## Changes by Specification

SPECIFICATION	DESCRIPTION OF CHANGE	IMPACTED SECTIONS
<b>TSX-FIX Specification and Business Design Guide</b>  <b>Order Entry</b>  <b>Version 7.2.0</b>	<ul style="list-style-type: none"> <li>• Changes to extend the Alpha specification to include Alpha-X and Alpha DRK</li> <li>• Addition of new ExDestination (tag 100) value of XATP to route orders to Alpha-X and Alpha DRK</li> <li>• Addition of new ExecInst (tag 18) value of "j" to enter a Smart Limit order. A Post Only Smart Limit order can be entered with combinations "j 9" or "9 j" on the bid side and "j 0" or "0 j" on the offer side.</li> <li>• Addition of new TSXPegType (tag 7723) value of "E" to enter a Smart Peg order</li> <li>• TSXUndisplayed (tag 7726) is mandatory for all orders to Alpha DRK.</li> </ul>	Section 4 Business Content Messages <ul style="list-style-type: none"> <li>• 4.1.1 - Market/Regular Limit/Short Sell orders</li> <li>• 4.1.5 Fill or Kill order</li> <li>• 4.1.6 Immediate or Cancel order and/or ByPass</li> <li>• 4.1.7 On-Stop order</li> <li>• 4.1.10 - Dark orders</li> <li>• 4.1.11 - Seek Dark Liquidity (SDL) order</li> <li>• 4.1.14 - Provide Dark Liquidity (PDL) order</li> <li>• 4.2 Order Cancel Request</li> <li>• 4.4.1 Modify – Market/Regular Limit/Short Sell Orders</li> <li>• 4.4.5 Modify – Regular order to become an Immediate or Cancel order</li> <li>• 4.4.6 Modify – On-Stop Order</li> <li>• 4.4.9 - Modify – Dark orders</li> <li>• 4.4.11 - Modify – Provide Dark Liquidity (PDL) order</li> <li>• 4.5.1 Entering a ByPass Designated Cross/Specialty Cross during Post-Open and Extended session</li> <li>• 4.7.1 - Order – single acknowledgement</li> <li>• 4.7.2 - Execution Report – Pending Replace</li> <li>• 4.7.3 - Execution Report – Replace</li> <li>• 4.7.4 - Execution Report – Pending Cancel</li> <li>• 4.7.5 - Execution Report – Cancelled</li> <li>• 4.7.8 - Execution Report – Partial or Complete Fill</li> <li>• 4.7.9 - Execution Report – Assign Time Priority to an Order</li> </ul> Section 5 Field Definitions

<b>BROADCAST FEED SPECIFICATION</b>  <b>PBF</b>	<ul style="list-style-type: none"> <li>• Changes to extend the Alpha specification to include Alpha-X and Alpha DRK.</li> <li>• Addition of new ExDestination (tag 607) value of XATP to route orders to Alpha-X and Alpha DRK</li> <li>• Addition of new Execlnst (tag 591) value of “j” for a Smart Limit order. A Post Only Smart Limit order can be entered with combinations “j 9” or “9 j” on the bid side and “j 0” or “0 j” on the offer side.</li> <li>• Addition of new TSXPegType (tag 597) value of “E” for a Smart Peg order</li> <li>• NoTradeFeat (tag 586) is set to value “XM” for all orders on Alpha DRK.</li> </ul>	Section 5 Business Content Messages <ul style="list-style-type: none"> <li>• 5.11.2 - Symbol Status Feed Message</li> </ul> Section 7 Field Definitions
<b>VERSION 11.3.0</b>		
<b>QRTMD ALPHA AND ALPHA-X / ALPHA DRK LEVEL 1</b>	<ul style="list-style-type: none"> <li>• Field IsDark will be set to “Y” for Alpha DRK and “N” for Alpha and Alpha-X</li> </ul>	Chapter 3 Business Content Messages <ul style="list-style-type: none"> <li>• 3.1 - Message Type A - Trade</li> <li>• 3.9 - Message Type X - Trade Correction</li> </ul>
<b>PL1</b>		Chapter 7 Field Definitions
<b>VERSION 2.2.0</b>		
<b>QRTMD ALPHA AND ALPHA-X / ALPHA DRK LEVEL 2</b>	<ul style="list-style-type: none"> <li>• Field IsDark will be set to “Y” for Alpha DRK and “N” for Alpha and Alpha-X</li> </ul>	Chapter 7 Field Definitions
<b>PL2</b>		
<b>VERSION 2.1.0</b>		
<b>ALPHA AND ALPHA-X / ALPHA DRK LEVEL 1</b> <b>TMX</b> <b>QUANTUMFEED®</b> <b>BUSINESS MESSAGE SPECIFICATIONS</b>	<ul style="list-style-type: none"> <li>• Field IsDark will be set to “Y” for Alpha DRK and “N” for Alpha and Alpha-X</li> </ul>	Chapter 3 Business Message Formats <ul style="list-style-type: none"> <li>• 3.3 Trade</li> </ul> Chapter 4 Field Definitions
<b>PQL1</b>		
<b>VERSION 2.2.0</b>		

- Field IsDark will be set to “Y” for Alpha DRK and “N” for Alpha and Alpha-X

- 3.3.6 Trade Report
- 3.3.10 Trade Correction

# Highlights of Technical Changes

## 1. Introduction of Smart Limit order

- The Smart Limit order is entered similar to a Limit order with additional ExecInst (tag 18 =j).
- The Smart Limit order can also have a Post only instruction and can be entered using the combinations of “j 9”, “9 j”, “0 j” and “j 0”. Any other combinations including leading or trailing spaces will be rejected.
- When a Smart Limit order is repriced due to the TMX Quote Decay Signal turning ON, a restatement message is sent back to the client with the below tags.
  - ExecInst (tag 18) = “j” (SmartLimit order)
  - ExecType (tag 150) = “D” (Restated)
  - ExecRestatementReason (tag 378) = “3” (Repricing of order)
  - Price (tag 44) has the new booked price
  - Text (tag 58) has a value indicating that the reprice was due to the Quote Decay Signal.
- Displayed and hidden quantity of an Iceberg Smart Limit order will be repriced when the TMX QDS signal turns “ON”.
- Combination of OnStop or Undisplayed with an Smart Limit order will be rejected.
- Smart Limit orders do not retain their time priority when they are repriced as a result of the TMX QDS turning “ON” or “OFF”.
- The TMX QDS operates, and re-pricing only occurs, between 9:30am - 4:00pm ET; outside of this time on Alpha-X/Alpha DRK, a Smart Limit order behaves as a regular limit order. For example a Smart Limit order entered between 8.00am and 9.30am ET on Alpha-X will behave as a regular Limit order even though this is a continuous trading session.

## 2. Introduction of Smart Peg order

- The Smart Peg order is entered using the following combination of tags:
  - Ordtype (FixTag 40) =2 (Limit)
  - Price (FixTag 44) = Limit Price
  - TSXPegType (7723) = E (Smart Peg)
  - TSXUndisplayed(7726) = Y
- Order confirmation back to the user includes these same tags

- Smart Peg orders support the following tags/features:
  - Anonymous
  - Jitney
  - ProgramTrade
  - MIS/MinQty
  - Post-Only
  - Self-Trade Prevention (NoTradeFeat)
  - OPR Reprice/Cancel
- Aggressive Offsets are permitted on Smart Peg orders; Passive Offsets will be rejected

### 3. Dark order types on Alpha DRK

- Supported order types include Dark Market, Dark Limit, Primary Peg, Market Peg, MPI Peg, Midpoint Peg, and Smart Peg
- All Alpha DRK orders must be entered with TSXUndisplayed(7726) = Y

PEG TYPE	DESCRIPTION	OFFSET	FIX OE
<b>Primary</b>	Order is priced at the same side Protected ABBO	Aggressive Only	TSXUndisplayed (7726) = Y  TSXPegtype (7723) = R  PegOffsetValue (211) = value
<b>Midpoint</b>	An order which will only execute at the midpoint of the ABBO	N/A	TSXUndisplayed (7726)=Y  TSXPegType (7723)=M
<b>MPI</b>	Order is priced at one tick more aggressive than the same side Protected ABBO	N/A	TSXUndisplayed (7726) = Y  TSXPegtype (7723) = x
<b>Market</b>	Order is priced one tick inside the opposite side Protected ABBO	Passive Only	TSXUndisplayed (7726) = Y  TSXPegtype (7723) = P  PegOffsetValue (211) = value
<b>Smart</b>	Order is priced at the same side Protected ABBO, and may trade at a discretionary price up to the midpoint of the ABBO, as its limit price permits	Aggressive Only TSX	Undisplayed (7726) = Y  TSXPegtype (7723) = E  PegOffsetValue (211) = value

For more information on these order types, refer to the [Dark Liquidity Guide](#).



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August 2023