

## Appendix 1: Functional Overview



### 1.1 Notable functional differences between the current Alpha platform and Alpha on TMX Quantum:

| Product/Feature Category      | Current Alpha Product/Feature  | Alpha on TMX Quantum Product/Feature  |
|-------------------------------|--|---|
| Order Entry Protocols         | Alpha FIX<br>EMAPI   | TSX- FIX 4.2<br>TSX STAMP   |
| Data Feeds                    | Alpha Top of Book Feed<br>Alpha Top Five Feed<br>Alpha Price Depth Feed<br>Alpha Full Book Feed<br>Alpha Private Order Book Flow   | Alpha Broadcast Feed<br>Alpha Level 1 Feed<br>Alpha Level 2 Feed<br>Alpha Quantum Level 1 Feed<br>Alpha Quantum Level 2 Feed<br>Alpha Reconciliation Feed   |
| Market Sessions               | Opening session  | The Opening session will employ the same rules and features that are available in the TSX/TSX Venture Market on Open  |
| Volatility control mechanisms | <p><b>Price Bands</b><br/>Price bands set limits where if a tradable order would trade through the price band, the order will trade up to the price band parameter and the remaining balance will be cancelled.</p>  | <p><b>Bid Ask Tick Limits</b><br/>Limits applied to market and better priced limit orders which restrict how many price ticks past the bid/offer an order can trade.</p> <p><b>Freeze Limits</b><br/>Freeze limits are established by applying a pre-determined price deviation against the most recent reference price (primarily the marketplace's last sale price). If executing an order will cause the price of the security to exceed the freeze limit there will be a temporary suspension of trading on the security.</p> |
| Self Trade Management         | <p><b>Self Trade Management</b><br/>A designation that suppresses trades which occur in the continuous trading session from the public feed, and prevents trades between two Dark orders in the IntraSpread™ facility, where orders on both sides of the trade are from the same Member and contain the same “self trade key” set by the Member.</p> | <p><b>Self Trade Management</b><br/>A designation that suppresses trades which occur in the continuous trading session from the public feed, and prevents trades between two Dark orders in the IntraSpread™ facility, where orders on both sides of the trade are from the same Member and contain the same “self trade key” set by the Member.</p> <p><b>Self Trade Prevention</b><br/>An optional feature that prevents two orders from the same broker from executing against each other based on</p>                         |

| Product/Feature Category | Current Alpha Product/Feature   | Alpha on TMX Quantum Product/Feature   |
|--------------------------|---|--|
|                          |   | unique trading keys defined by the broker. An active order is rejected instead of trading against a resting order from the same broker with the same unique trading key.   |
| Specialty Priced crosses | Basis Cross<br>VWAP Cross<br>Contingent Cross   | Basis Cross<br>VWAP Cross<br>Contingent Cross<br>Special Trading Session Cross   |
| Cancel on disconnect     | An optional feature whereby when a user is logged out from the trading system orders marked as cancel on disconnect managed through this session will be cancelled. | An optional gateway session feature that will restrict order entry capability of specified session bundles and attempt to cancel all entered outstanding open orders per session upon involuntary loss of connectivity between TMX and the client. |
| Drop Copy                | Alpha FIX Drop Copy service includes Execution Reports for all orders and trades.   | Drop copy service is an optional gateway session feature that provides a duplicate copy of all execution messages (fill reports and fill renounces only) associated with a specific client order entry session.                                    |
| Market Making            | Lead Market Makers<br>Market Makers<br>Odd Lot Dealers  | Odd Lot Dealers  |
| Broker Reports           | Open Orders Report<br>Daily Trades Report   | New Open Orders Report by Broker<br>New Open Orders Report by UserID<br>Removed Orders Report by Broker<br>Removed Orders Report by UserID<br>Diary List By Price Report<br>Diary List By Time Report  |

## 1.2 Current features to be discontinued with Alpha on TMX Quantum:

Based on historic demand and current use the following features will be retired from the Alpha Exchange

| Product Category | Feature   |
|------------------|---|
| Market Sessions  | Market on Close   |
| Order Durations  | Good-till-Time  |
| Order Types      | Inside Match order<br>Price improvement Iceberg<br>Limit on Open<br>Market on Open<br>Market on Close<br>Route at Close |

## 1.3 Summary of Order Entry and Data Feed Specification Changes

The table below summarizes the notable order entry and broadcast data feed specification changes associated with the Alpha Integration. (Please reference the release notes for each specification for a complete list of changes to the protocols)

| Feature                       | Description   | FIX OE  | STAMP OE  | Broadcast Feed  |
|-------------------------------|---|---|---|---|
| Alpha destination instruction | Indicates the order must be routed to Alpha Exchange  | 100ExDestination = XATS   | 607 ExDestination = XATS  | 607 ExDestination = XATS  |
| SDL order                     | An IOC order that trades with eligible IntraSpread Dark and CLOB orders depending on the match attribute.     | 7731SeekDarkLiquidity<br>1 = Trade with dark and lit volume<br>2 = Trade with price improving dark orders*<br>3 = Trade with dark only* | 613 SeekDarkLiquidity<br>1 = Trade with dark and lit volume<br>2 = Trade with price improving dark orders*<br>3 = Trade with dark only* | 613 SeekDarkLiquidity<br>1 = Trade with dark and lit volume<br>2 = Trade with price improving dark orders*<br>3 = Trade with dark only* |
| Midpoint Dark order           | An IntraSpread dark order that will only execute at the midpoint of the NBBO within the IntraSpread facility. | 7726TSXUndisplayed =Y<br>7723 TSXPegtype = M<br>40 Ordertype = P  | 604 Undisplayed =Y<br>597 PegType = M   | 604 Undisplayed =Y<br>597 PegType = M   |
| Touch Dark order              | An IntraSpread Dark order that is pegged to the same side of the NBBO (Buy pegged to the bid, Sell            | 7726TSXUndisplayed =Y<br>7723 TSXPegtype = R<br>40 Ordertype = P  | 604 Undisplayed =Y<br>597 PegType = R   | 604 Undisplayed =Y<br>597 PegType = R   |

| Feature                     | Description   | FIX OE   | STAMP OE   | Broadcast Feed   |
|-----------------------------|---|--|--|--|
|                             | pegged to the offer)  |  |  |  |
| Comp attribute              | Dark order attribute, stands for contra order matching preference, indicating the types of orders it may trade against.   | 7730 TSXCOMP<br>1 = SDL (default)<br>2 = Dark<br>3 - All   | 612 Comp<br>1 = SDL (default)<br>2 = Dark<br>3 - All   | 612 Comp<br>1 = SDL (default)<br>2 = Dark<br>3 - All   |
| Minimum Quantity            | Prevents aggregate fills smaller than the minimum quantity specified until the order's volume has been depleted to the point that the remaining volume is less than the minimum quantity. | 110 MinQty   | 598 MinQty   | 598 MinQty   |
| IsDark                      | Indicates the trade executed within the IntraSpread facility (OSC required indicator).  | Not applicable   | Not applicable   | 617 IsDark=Y   |
| Good for Day order duration | Order is valid to execute up to the end of the Post Open session.   | 59 TimeinForce = P   | 39 Orderduration= GFD  | 39 Orderduration= GFD  |
| Matching Priority           | Indicates the type of priority used to match the order in a trade.  | 7732 TSXMatchingPriority =1<br>Match was due to Broker Preferencing  | 615 MatchingPriority = 1<br>Indicates match was due to Broker Preferencing   | 615 MatchingPriority = 1<br>Indicates match was due to Broker Preferencing   |
| Self Trade Management       | An instruction to permit trades with an order from the same firm based on a matching TSXNoTradeKey and suppress the execution from the public feed.                                       | 7713 TSXNoTradeFeat<br>1st char "E" = Execute match<br>2nd char "M" = Prevent trade at TSXNoTradeKey level.<br><br>7714 TSXNoTradeKey<br><br>7733 TSXSelfTrade = Y | 586 NoTradeFeat<br>1st char "E" = Execute match<br>2nd char "M" = Prevent trade at TSXNoTradeKey level.<br><br>587 NoTradeKey<br><br>614 SelfTrade = Y | 586 NoTradeFeat<br>1st char "E" = Execute match<br>2nd char "M" = Prevent trade at TSXNoTradeKey level.<br><br>587 NoTradeKey<br><br>614 SelfTrade = Y |

\* Feature is subject to regulatory approval