

QView Latency Optics Enhancement – Key Messages and Background 5.7.13

Key Messages:

- **Transparency** – Customers will have further transparency into the NASDAQ OMX Data Center and the latency of full round trip of orders travelling through our infrastructure.
- **Diagnostics** – Allows various market participants to reduce troubleshooting times with data at their fingertips, namely with on-demand packet captures (PCAPs).
 - i.e. – Banks can utilize user entitlements for prop desk vs. agency desk segregation.
 - Multiple measurement categories.
 - Order to Acknowledgement – time it takes for a customer's acknowledgement to be received back from the matching engine.
 - Order to Book – time it takes for a customer's order to be displayed on the data feed (TotalView ITCH multicast feed).
 - Cancel to Out – time it takes for the cancel acknowledgement to be received by the customer.
 - Provides average latency for peers with comparable handoff speeds.
- **Economies of Scale** – The web-based software tool is yet another Access Services offering that provides economies of scale to all market participants, offering a cost-effective solution.
 - TEASER: Ongoing enhancement to provide further granularity and additional value, such as Order Detail, which will include queue depth at the OUCH server; custom alerting, and historical reports (via Report Center).

Background:

- Session Detail
 - Multiple views for overall session latency
 - Session latency data ranges from full day views down to 1-second granularity.
 - Interactive graphs and customizable timeframes.
- On-Demand PCAPs
 - Historical packet capture files (PCAPs) for a specific session
 - Historical PCAPs are available up to a 60-second time interval, and typically goes back up to 11 days, depending on volumes.
- Percentile Charts
 - Percentile charts for each category of measurement.
 - Provides a holistic view of the day's trading, along with comparable peer latency