

March 2019

Best Execution and Order Handling Disclosure

Virtu ITG Canada Corp¹. (“Virtu” or “the Firm”) is committed to providing its clients with Best Execution² and with transparency surrounding its routing methodology. This document provides relevant information on how Virtu ensures best execution for its customers.

Virtu performs ongoing research on liquidity, market structure, order flow, vendors, marketplaces, and overall latency to identify where there may be adverse selection or competitive advantages. Ultimately, these factors ensure that clients are achieving Best Execution. Virtu’s trade execution products, including the Virtu Algorithms suite and Smart Order Router (“SOR”), are designed to help clients achieve the best possible trading outcome for their chosen strategy, while maintaining compliance with applicable regulatory requirements.

In addition to its execution products, Virtu operates both a High-Touch Trading Desk and a separate Electronic Coverage desk, to provide its clients with ongoing support and trading expertise. The High-Touch Trading Desk consists of experienced and knowledgeable portfolio and single stock equity traders, who are available to manually handle and execute client orders. The Electronic Coverage Desk is available for monitoring and managing clients’ algorithm orders, and can provide clients with insight on how to best leverage Virtu’s technology.

CANADA’S EQUITY MARKETS

The Canadian equities marketplace landscape has several Exchanges and Alternative Trading Systems (“ATS”). Investment dealers, like Virtu, who execute trades in Canada are subject to National Instrument 23-101 *Trading Rules* (“NI 23-101”) and the Order Protection Rule (“OPR”). The Canadian Securities Administrators (“CSA”) introduced OPR in November 2009 through amendments to both NI 23-101 and National Instrument 21-101 *Marketplace Operations*.

Under OPR, dealers such as Virtu are required to fill all better-priced orders on protected marketplaces before other orders at inferior prices, regardless of the marketplace on which the order is entered. Virtu achieves this with its SOR. In April 2016, the CSA published amendments³ to the OPR section of NI 23-101 to now include a market share threshold⁴ for a marketplace to be considered “protected” under OPR. The initial implementation of this market share requirement went into effect on October 1, 2016. The status of each marketplace is reviewed, and changed if applicable, on an annual basis effective April 1. In addition, orders displayed on marketplaces that do not offer “automated trading functionality”⁵ are not considered to be “protected.”

¹ Virtu ITG Canada Corp. is an Investment Dealer registered with the securities regulatory authorities in Alberta, British Columbia, Manitoba, New Brunswick, Nova Scotia, Ontario, Quebec and Saskatchewan, and is a Dealer Member of the Investment Industry Regulatory Organization of Canada (“IIROC”).

² IIROC Dealer Member Rule 3300 defines “best execution” as obtaining the most advantageous execution terms reasonably available under the circumstances. National Instrument 23-101 *Trading Rules*, Part 4(2) requires that “a dealer and an adviser must make reasonable efforts to achieve best execution where acting for a client.”

³ Prior to the amendments published in April 2016, all marketplaces in Canada, except for “dark pools” or venues that do not display orders, were considered “protected” under OPR.

⁴ The market share threshold is set at 2.5 percent of market share of the adjusted volume and value traded (equally weighted) over a one-year period.

⁵ Under NI 23-101, “automated trading functionality” generally means the ability of a marketplace to handle orders with immediate-or-cancel terms, and to immediately and automatically display information that updates the displayed orders on the marketplace to reflect any change to their material terms. Marketplaces which have a “speed bump” would not be considered to have automated trading functionality.



Canadian Marketplaces – Status under OPR

	OPR Status	Reason for Status
CSE	Protected	Meets market share threshold.
Nasdaq CXC	Protected	Meets market share threshold.
Nasdaq CX2	Protected	Meets market share threshold.
Omega ATS	Protected	Meets market share threshold.
TSX	Protected	Meets market share threshold.
TSXV	Protected	Meets market share threshold.
Aequitas Lit Book*	Protected for Aequitas-listed securities only	Exchange protected for its listed securities
	Unprotected for securities other than Aequitas-listed securities	Does not meet market share threshold.
Lynx ATS	Unprotected	Does not meet market share threshold.
Aequitas NEO Book	Unprotected	Does not provide automated trading functionality.
TSX Alpha	Unprotected	Does not provide automated trading functionality.
ICX	Unprotected	Does not display orders.
Liquidnet	Unprotected	Does not display orders.
MATCHNow	Unprotected	Does not display orders.
Nasdaq CXD	Unprotected	Does not display orders.

This table shows each Canadian marketplace's status under OPR effective April 1, 2018 through March 31, 2019. Any changes to the OPR status of Canadian marketplaces are announced by IIROC on an annual basis.

* Aequitas Lit Book will be a protected marketplace effective April 1, 2019.

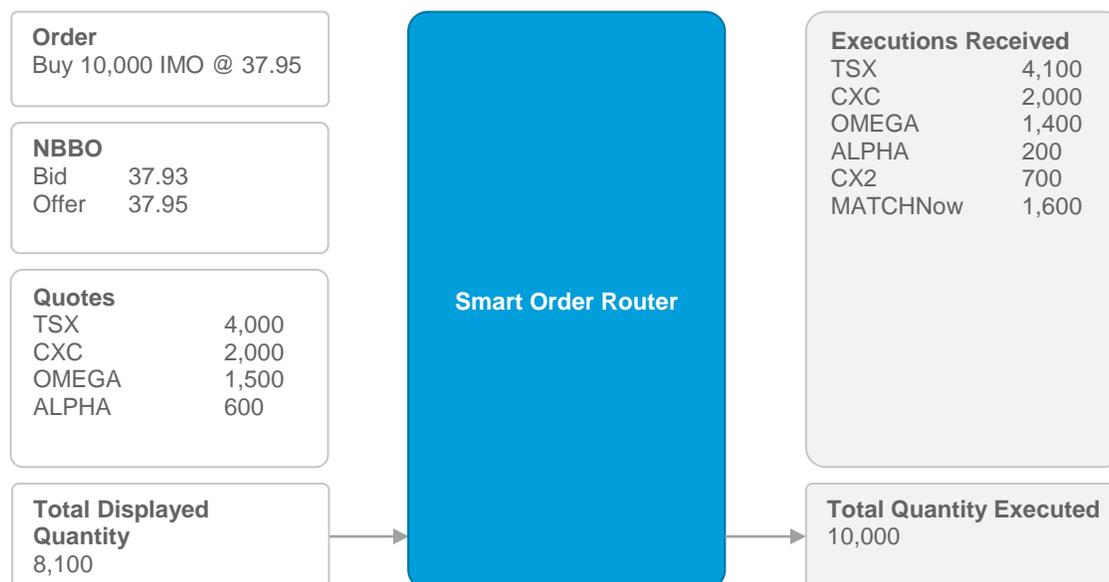
SMART ORDER ROUTER

Virtu's SOR uses advanced routing and order handling logic to target multiple quotes across marketplaces, adjusting trading based on market conditions. The SOR sprays orders to multiple destinations to minimize gaming, and exhausts all displayed volumes at the best available price, on both protected and unprotected venues, before moving to the next price level. Orders that are rejected by a



marketplace, but are immediately tradeable, are routed by the SOR to the venue with the next best available price.

SOR Routing Process



Example of a hypothetical order routed through SOR.

Market orders or immediately tradeable limit orders routed to the SOR outside of core trading hours are handled as follows:

- Pre-Open Session – Orders are queued for the opening auction, unless specifically directed by the client to a destination that will trade the orders in the pre-open as markets open and become available.
- Post-Market / Extended Trading Session – Orders received after market close to trade in the post-market trading session are routed to the marketplaces that offer extending trading. On the TSX, trades are executed at the closing price determined at 4pm. Other marketplaces will trade based on dynamic bids and offers.

The SOR's default settings are based on ongoing research, testing and market structure expertise; however, these settings can be customized by Virtu upon client request, providing that it complies with regulatory requirements.

ROUTING METHODOLOGY

Virtu provides its clients with self-directed access to the Canadian marketplaces via its SOR and suite of Algorithms. Traders on Virtu's Trading Desks, both High-Touch and Electronic Coverage, also leverage the same execution products, which are designed to consider the following material routing factors:



- Best available price,
- Likelihood of available liquidity based on order size,
- Speed and certainty of execution,
- Reliability of quotes,
- Market impact,
- Marketplace features⁶, and
- Opportunity cost.

Virtu monitors SOR performance on an ongoing basis, noting any potential trade throughs, where the execution price of a trade occurs outside the best bid or offer available (protected and unprotected) at the time of execution.

The Firm's Best Execution Committee reviews SOR performance on a quarterly basis. The review includes speed of execution, latency, price improvement opportunities, active and passive fill rates, mean reversion and overall fill rates for protected and unprotected marketplaces, including those in which Virtu has ownership interests.

EVALUATION OF MARKETPLACES

Virtu is required under OPR to connect to all "protected" marketplaces. However, Virtu connects to and considers quotes from all Canadian marketplaces (both protected and unprotected) when routing client orders to provide its clients with additional sources of liquidity and ensure it meets its Best Execution obligations. In cases where the same quote is available on more than one marketplace, Virtu's SOR targets the quote on the venue that is higher on Virtu's Standard Routing Table.

Marketplaces are placed in preferential order on the Standard Routing Table based on an evaluation of the available Canadian marketplaces, which takes into consideration the following factors:

- Likelihood of available liquidity, based on historical order and trade data;
- Each marketplace's status under OPR (protected or unprotected);
- Speed of execution, including whether a marketplace employs a speed bump;
- Certainty of execution;
- Reliability of quotes; and
- Overall cost of the transaction.

Virtu regularly reviews all marketplaces to seek out optimal trading outcomes for its clients. When a Canadian marketplace announces a change⁷, Virtu assesses the impact to determine whether a change to the Standard Routing Table is required.

To optimize liquidity and overall execution prices for its clients, Virtu reviews both protected and unprotected markets. Based on historical trading data and marketplace behaviour, Virtu may route to unprotected marketplaces if displayed volumes are insufficient to complete the order, and if the unprotected venue has demonstrated sufficient liquidity for comparable orders.

⁶ Consideration of marketplace features includes, at a minimum, consideration of the following: opening and closing times, opening mechanisms, the order types accepted, whether the marketplace is protected or unprotected, and the treatment of marketplace trading fees and/or rebates.

⁷ IIROC Rules Notice 17-0138 notes that the launch of a new marketplace or a significant change to trading functionality offered by an existing marketplace would constitute a material change.



New Venues

As the above evaluations can be challenging to determine for new marketplaces and/or liquidity sources, Virtu will connect to and consider a new venue in its routing on the launch date, with the following caveats:

- A new displayed venue is given the lowest possible routing preference.
- A new unprotected venue that does not display orders is introduced selectively to the Virtu High-Touch Trading Desk prior to being incorporated in client routing.
- Virtu will not post on a new venue until it has demonstrated technical stability.

This practice is consistent with Virtu's aim to provide Best Execution to its clients and to manage risk.

Principal Marketplace

The "Principal Marketplace" for all securities listed on the Toronto Stock Exchange, TSX Venture Exchange, Canadian Securities Exchange or Aequitas NEO Exchange will be the exchange on which the security is listed, regardless of other marketplaces that allow trading of these securities.

Routing Conditions

All orders will be routed to either the Principal Marketplace or alternative marketplaces as follows, unless specific instructions are received from the customer to handle otherwise:

- Orders received prior to 9:30 a.m. and intended to trade at the opening price of the security are queued for the auction at the opening of the Principal Marketplace that day.
- Orders received after 4:00 p.m. are queued and will be routed to the best marketplace(s) at the opening of the Principal Marketplace on the following business day.
- Orders received between 9:30 a.m. and 4:00 p.m. will be routed to the marketplace(s) that provide(s) the best opportunity for Virtu's client to obtain Best Execution at the time of entry.
- Changes to an outstanding order, or portion of an outstanding order, will be handled in the same way as a new order received and will be treated according to the routing conditions listed above.

Changes to the Virtu Standard Routing Table

Virtu connects to and considers quotes from all Canadian marketplaces; however, on occasion, technical difficulties may require the Firm to disconnect from one or more marketplaces to ensure market integrity and that client orders are not impacted. Virtu will temporarily remove a marketplace from its Standard Routing Table when the Firm experiences technical difficulties affecting trading or quotes, either internally (if the issue exists with Virtu), through an external vendor, or with any marketplace. Virtu monitors for such issues on an ongoing basis; it is critical to Virtu that client orders are only routed to destinations that will provide proper executions.

Virtu can remove a marketplace from its Standard Routing Table at any time during normal trading hours, if required to do so. To ensure that clients have access to all available liquidity, Virtu will typically reconnect to a marketplace as soon as the issue is confirmed to be resolved, if doing so will not put clients or Virtu at risk; however, Virtu can remove and reconnect to existing venues intraday, during the pre-open, core trading hours, or during extended trading, in needed. In certain cases, Virtu may elect not to reconnect to an unprotected marketplace should Virtu be unable to validate the stability of the affected marketplace.



Clients will be notified on a best efforts basis of any instance where Virtu, a vendor, or a marketplace are experiencing technical difficulty and whether, as a result, Virtu is removing a marketplace from its routing and quote consideration.

Any permanent changes to the Virtu Standard Routing Table (resulting from a material change, or based on the results of scheduled reviews) are typically implemented after trading has closed for the day, as an overnight process.

Marketplace Fees and Rebates

Virtu may pay marketplace fees or receive marketplace rebates when routing certain orders to certain marketplaces for execution. These fees and rebates are incurred by Virtu when acting as the executing broker, and in some cases, are passed along to clients. Canadian investment dealers utilizing Virtu's routing technology and executing under their own trading number will pay fees or receive rebates. Marketplace fee schedules are disclosed on the websites of each marketplace.

Handling of Inter-listed Securities

Several securities are deemed "inter-listed" because they are listed on both an exchange in Canada and a foreign jurisdiction; predominantly in the United States (U.S.). Virtu only conducts trades of listed or quoted securities outside of Canada if such trades are executed on a Foreign Organized Regulated Market⁸ ("FORM"), as required under UMIR 6.4 subsection (2)(d). This ensures that trades conducted outside of Canada are conducted on a market that provides substantially the same standards as found in Canada for both regulatory monitoring and public data dissemination.

While liquidity and volumes may differ between countries, inter-listed stocks may present Virtu's clients with opportunities to take advantage of additional liquidity in the U.S. Virtu's Best Market Server ("BMS") compares the quotes for an inter-listed security in both the Canadian and U.S. markets, factoring in the foreign exchange rate ("FX rate")⁹, to identify the best available price.

In instances where there is a better price in the U.S. market (after applying the FX rate), BMS routes the order to Virtu Inc.¹⁰ for execution. If there is a better quote in the Canadian market, BMS would target the Canadian quote.

BMS provides clients with Best Execution with minimal additional risk since the U.S. has a well-regulated equities market and there is no substantial increase in settlement risk. To minimize the risk of FX rate fluctuations, BMS applies the FX rate at the time of execution to any trades executed in the U.S.; thus, any FX rate fluctuation risk is borne by Virtu. For several years, BMS has provided clients with increased liquidity and price improvement, and reduced opportunity costs and market impact. BMS is also able to accommodate client requests for a combination of limit and fill preferences or requirements in Canadian or U.S. dollars.

⁸ IROC issued Guidance Note 14-0293 *Guidance on the Definition of "Foreign Organized Regulated Market"* in December 2014 which defines a FORM as a marketplace outside of Canada that is an exchange, alternative trading system or quotation or trade reporting system recognized or registered with a securities regulatory authority that is an ordinary member of the International Organization of Securities Commissions. Additionally, the entry of orders and the execution or reporting of trades must be monitored for compliance with regulatory requirements at the time of entry and execution and the FORM must display and provide timely information to entities disseminating data to market participants of at least the price, volume and security identifier of each trade at the time of execution of that trade on the FORM.

⁹ Virtu acts as principal in any currency conversion transactions and may earn revenue on the spread between the bid and ask prices and the cost of the currency.

¹⁰ Virtu Financial Inc. is an affiliate of Virtu ITG Canada Corp. and a registered broker dealer, member of the Financial Industry Regulatory Authority ("FINRA"). Virtu Financial Inc. is required under the Securities and Exchange Commission rules to ensure that markets to which its sends orders are providing Best Execution. Virtu Financial Inc. is also subject to FINRA Rule 5310 Best Execution and Interpositioning.



Disclosure of Intermediaries

For orders in securities that are not listed in Canada or orders for inter-listed securities where the better quote is outside the Canadian market, Virtu will route to certain affiliated and non-affiliated intermediaries to facilitate order execution:

- Virtu Affiliates – Virtu provides its clients with access to the global equity markets via a network of affiliated firms, all of which are registered brokerage firms in their local jurisdiction, including Virtu Financial Inc. (United States), Investment Technology Group Limited (Ireland, covering Europe), and Virtu ITG Hong Kong Limited (Hong Kong) and Virtu ITG Australia Limited (Australia) that collectively cover Asia Pacific. In certain markets Virtu may use a local broker to facilitate execution; additional details are available upon request.
- Market Makers - When routing client orders for securities that are not listed in Canada, Virtu's non-Canadian affiliates may send non-Canadian orders directly to market makers if it is reasonable to expect that doing so will provide the most advantageous execution terms to the customer, after considering order and trade information from all appropriate marketplaces. These market makers are registered as broker-dealers in the jurisdictions in which they operate. Typically, orders may be routed to a market maker upon client request or to accommodate a more complex trading strategy involving American Depository Receipts, Exchange-Traded Funds, convertible debentures, warrants, rights or pairs trades.

Virtu considers the following additional factors when routing an order in an inter-listed security to a foreign intermediary for execution:

- Whether the foreign market has historically demonstrated a reasonable likelihood of liquidity for the listed security;
- The extent of trading in the security on the foreign market relative to the volume of trading on Canadian marketplaces;
- The extent of exposure to settlement risk in a foreign jurisdiction; and
- The extent of exposure to fluctuations in foreign currency exchange.

Whether an order was routed to an intermediary, along with the identity of the intermediary, can be provided on a trade-by-trade basis upon request.

Marketplace Disclosure

Orders for Canadian-listed securities may be executed on the listing exchange, an ATS that trades the security, or on a FORM. Trade confirmations will indicate whether some of the order, or the order in its entirety, executed on multiple marketplaces in Canada, the U.S. or both. Additional detail, such as the marketplace of execution for each underlying trade, is available upon request.

Virtu-Related Marketplaces

MATCHNow is operated by TriAct Canada Marketplace LP, a wholly owned subsidiary of Virtu. In addition, Virtu has a minority ownership in Aequitas Innovations Inc., which owns and operates Aequitas NEO Exchange and its NEO and Lit trading books. Virtu also holds a seat on the Board of Directors of Aequitas Innovations Inc.



ORDER HANDLING BY THE HIGH-TOUCH TRADING DESK

Certain types of orders may have specific handling implications. Unless otherwise specified, orders will be handled by Virtu in accordance with the policies set out in this document.

Client instructions and orders should not be sent to Virtu via e-mail. These e-mails may not be received by Virtu due to many factors. Thus, these e-mails are not considered to be received or accepted unless and/or until an agent of Virtu confirms the order.

Virtu cannot execute client order instructions if they would cause Virtu to contravene any regulatory requirements. If the High-Touch Desk receives instructions that may cause Virtu to violate a trading rule or requirement if immediately executed, Virtu reserves the right to reject the order and seek clarification from the client.

Hours of Operation

For Canadian listed equities, a member of the High-Touch Desk will be available to review or handle orders for execution between the hours of 7:00 a.m. and 5:00 p.m. Eastern Time, Monday through Friday, not including Canadian statutory holidays. Staff may be further available for assistance before and after these hours. Orders submitted prior to 7:00 a.m. will be queued for execution at the open, unless otherwise agreed to by Virtu and the client.

RISK CONTROLS

Virtu employs robust policies, procedures and controls to effectively manage its financial, operational, market, regulatory and legal risks. This includes a series of risk checks that are applied to all orders handled and/or executed by Virtu or through its systems.

- **Single Order Value Check** – Intended to operate as a control to limit the entry of an order that may be in error because the order is larger in dollar value or in number of shares than the threshold set for the client and/or is a size that has the potential to disrupt trading in a security. The check is designed to reject any single order that exceeds the defined threshold. All clients adhere to the same constraints.
- **Limit Price Check** – Intended to prevent the submission of an order with a limit price that exceeds an allowed combination of a dollar amount and percentage band away from the aggressive quote of the national best bid and/or offer (“NBBO”). The allowed percentage is 5% for securities greater than \$1.00. This includes stocks in the IROC Single Stock Circuit Breaker (“SSCB”) list. Securities trading under \$1.00 are not subject to the IROC SSCB and are subject to notional dollar value risk checks.

The NBBO can fluctuate significantly during the pre-open and when a security is coming off a trading halt. Thus, prior to the reopening of trading the Limit Price Check band is widened to 18% outside the NBBO.

- **Daily Aggregated Value Check** – Intended to prevent Virtu’s clients from trading above their assigned credit limits by establishing a daily dollar-amount limit, per customer, of the total notional value of all executed and outstanding orders submitted by the customer.

Additional pre-trade risk limits may be applied to a client’s order flow at Virtu’s discretion. For broker dealers, certain risk controls are customizable to accommodate a variety of trading situations. For more information on the risk controls currently in place for your firm, please contact your Virtu representative.



RESTRICTIONS ON SECURITIES TRADED

Virtu has imposed restrictions on certain securities when Virtu is acting as the executing broker. An order may be rejected if the order is for a security that falls under the following categories:

Securities under a Cease Trade Order

A cease trade order (“CTO”) is an order issued by a Canadian provincial or territorial securities regulatory authority or similar regulatory body against a company or an individual. A CTO can be issued for failing to meet disclosure requirements; failure to submit financial filings; or an enforcement action that involves an investigation.

Equity marketplaces in Canada have retained IIROC as their regulation services provider. Under IIROC Rules, if a securities regulator issues a CTO with respect to an issuer whose securities are traded on a marketplace, IIROC imposes a regulatory halt on trading of those securities on all marketplaces for which IIROC acts as the regulatory services provider. Such action is taken regardless of whether the regulator that issued the CTO is the principal regulator of the issuer. Once the halt is imposed by IIROC, no person subject to these rules may trade those securities on any marketplace in Canada, Over-the-Counter, or on a foreign organized regulated market.

Certain Over-the-Counter Securities

Virtu will not accept orders in certain Over-the-Counter Securities (“OTC”) that lack critical information such as sufficient financial filings, or that pose other risks to the Firm or the Firm’s customers or counterparties.

All orders for securities traded on OTC Pink (The Open Market) with the following designations (as applied by OTC Markets Inc.) will be rejected:

- Limited Information – Designed for companies with financial reporting problems, economic distress, or in bankruptcy to make the limited information they have publicly available. This category can also include companies that may not be troubled, but are unwilling to provide disclosure pursuant to the prescribed guidelines of OTC Markets Inc.
- No Information – Indicates companies that are not able or willing to provide disclosure to the public markets - either to a regulator, an exchange or OTC Markets Inc. This category also includes defunct companies that have ceased operations as well as 'dark' companies with questionable management and market disclosure practices.
- Caveat Emptor – This category applies to securities where there is a public interest concern associated with the company, security, or control person which may include but is not limited to a spam campaign, questionable stock promotion, investigation of fraudulent or other criminal activity, regulatory suspensions, or disruptive corporate actions. This category is also referred to as “Buyer Beware.”
- Grey Market – Applied to securities that are not currently traded on the OTCQX, OTCQB or Pink markets. Broker-dealers are not willing or able to publicly quote OTC securities because of a lack of investor interest, company information availability or regulatory compliance.

Effective September 2018, any securities traded on OTC Pink that are categorized as “Current Information” and trade under \$2.00 (based on previous close) will be rejected by Virtu, excluding securities that are listed in Canada, or are ADRs, GDRs or ETFs.



Orders for securities traded on OTC Pink that are categorized as “Current Information” and trade above \$2.00 (based on previous close) will not be rejected. In addition, orders for securities traded on OTCQX and OTCQB will not be rejected.

CONTACTS

If you are unsure about a trade, how to enter an order, or if there are any potential regulatory risks with respect to a trade, the trade should not be entered. Feel free to contact a member of our trading desks:

High-Touch Trading

416-874-0700

can-tradingdeskers@itg.com

Electronic Coverage

416-874-0800

can-coverage@itg.com

Virtu will assist with order entry, and provide guidance on rules and regulations.

Any questions regarding this document or application of a trading rule can be referred to our Chief Compliance Officer, Kuno Tucker, via phone at 416-874-0830 or via e-mail at can-compliance@itg.com.

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