

# IIROC NOTICE

## **Rules Notice Guidance Note**

UMIR

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## **SPECIFIC QUESTIONS RELATED TO SUPERVISION OF ALGORITHMIC TRADING**

### **Summary**

This Rules Notice provides guidance on specific questions relating to the supervisory requirements under the Universal Market Integrity Rules (“UMIR”) of a Participant with respect to the use of an algorithmic trading system.

### **Background**

The Investment Industry Regulatory Organization of Canada (“IIROC”) has previously set out guidance on the supervisory requirements under UMIR for a Participant that uses or allows its clients to use an algorithmic trading system to enter orders on a marketplace through the trading system of the Participant.<sup>1</sup> Among other things, guidance was provided on:

- supervisory policies and procedures that a Participant is expected to have in place when using an algorithmic trading system, including provision for appropriate safeguards that are reasonably designed to prevent the entry of orders and execution of trades that are “unreasonable”;

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<sup>1</sup> Reference should be made to Market Integrity Notice 2008-003 – *Guidance – Supervision of Algorithmic Trading* (January 18, 2008).



- a Participant’s obligation to ensure that an algorithmic trading system has been tested prior to being “engaged”, including the ability of the Participant to immediately disengage the operation of the algorithmic trading system should the need arise; and
- a Participant’s supervisory requirements with respect to trading by a Dealer-Sponsored Access client (“DSA Client”) that uses an algorithmic trading system.

This Rules Notice addresses specific questions related to the supervision of algorithmic trading systems and supplements the guidance provided in the above referenced Market Integrity Notice.

### **Questions and Answers**

The following is a list of the most frequently asked questions regarding the supervisory requirements of a Participant with respect to the use of an algorithmic trading system and IIROC’s response to each:

***1. Is the obligation to supervise orders entered on a marketplace by means of an algorithmic trading system a new requirement?***

No. Under Part 1 of Policy 7.1 of UMIR a Participant has an obligation to supervise orders which are entered on a marketplace:

- by traders employed by the Participant;
- by an employee of the Participant through an order routing system;
- directly by a client and routed to a marketplace through a trading system of a Participant; or
- by any other means.

In the view of IIROC, the source of the order or the means by which an order is entered on a marketplace does not relieve a Participant of responsibility for the supervision of such orders. Given the heightened risks to both market integrity and the financial position of the Participant posed by the use of an algorithmic trading system (namely, the ability to enter a high volume of orders on one or more marketplaces in a short period of time), IIROC expects that a Participant that uses or allows its clients to use an algorithmic trading system will have supervisory policies and procedures that are adequate to prevent and detect violations of UMIR and applicable securities requirements.

***2. What testing is a Participant expected to conduct of an algorithmic trading system prior to its use by the Participant?***



IIROC expects that a Participant will ensure that each algorithmic trading system that will be used by the Participant to route orders to a marketplace has been adequately tested prior to the algorithmic trading system being “engaged”.

IIROC expects that a Participant will, at a minimum, ensure that each algorithmic trading system has:

- been tested under various market conditions to identify problematic outcomes related to the operation of the algorithmic trading system;
- built-in features or functionality that prevent (or provide a real-time alerts when) certain pre-programmed order or trade parameters from being exceeded (i.e. certain volume, order or price limits); and
- an “override” functionality which either automatically “disengages” the operation of the algorithmic trading system or permits the Participant to do so remotely.

In the view of IIROC, the Participant retains this testing obligation even in circumstances when the algorithmic trading system is provided by a third party service provider. While IIROC expects that a Participant, consistent with prudent business practices, will conduct appropriate due diligence with respect to the testing of all aspects of the operation of the algorithmic trading system prior to its use by the Participant, IIROC recognizes that, testing of certain aspects of an algorithmic trading system by a Participant may not be feasible or practical, particularly in the case of a algorithmic trading system provided by a third party service provider.

IIROC is of the view that, if a Participant chooses to use an algorithmic trading system provided by a third party service provider, the Participant may rely on representations from the service provider as part of its due diligence into the operation of the algorithmic trading system. For greater certainty, IIROC is of the view that a Participant’s reliance on representations from the service provider is limited to those aspects of the algorithmic trading system that the Participant cannot reasonably test independently. For example, if a Participant’s testing regime would impinge on proprietary aspects of the algorithmic trading system, the Participant may rely on representations from the system provider for those aspects of the trading system that the Participant is unable to test independently.

IIROC expects that a Participant, as part of its supervisory policies and procedures, will maintain a written record with sufficient details to demonstrate the testing of the algorithmic trading system undertaken by the Participant, including details of the testing conducted by the algorithmic trading system provider. **Notwithstanding that a Participant may rely on representations from the provider of the algorithmic trading system for certain aspects of the testing of the trading system, the Participant continues to be responsible for any offending order**



**entered on or trade executed on a marketplace resulting from the improper operation of the algorithmic trading system.**

**3. *What testing is a Participant expected to conduct with respect to the use of an algorithmic trading system by a DSA client of the Participant?***

Under Part 1 of Policy 7.1 of UMIR, a Participant has an obligation to supervise orders which are entered on a marketplace directly by a client and routed to a marketplace through a trading system of a Participant. As part of its supervisory obligation, a Participant must be aware of the origin of orders entered by a DSA client, including whether orders may be generated by an algorithmic trading system.

In the view of IIROC, a Participant, as part of its initial “screening” of a DSA client, must ensure that any algorithmic trading system that will be used by the DSA client is adequately tested and includes appropriate safeguards in place to prevent the entry of offending orders on a marketplace. IIROC is also of the view that, as part of the Participant’s on-going supervisory obligations, the Participant is required to make regular inquiries to ensure that any modification to a previously “approved” algorithmic trading system in use by a DSA client continues to maintain appropriate safeguards.

While IIROC expects that a Participant, consistent with prudent business practices, will undertake appropriate due diligence with respect to all aspects of an algorithmic trading system used by its DSA clients, IIROC recognizes that testing certain aspects of a DSA client’s algorithmic trading system, particularly those related to proprietary trading models used by the DSA client, may not be feasible or practical. IIROC expects that at a minimum, a Participant’s testing of any algorithmic trading system used by a DSA client will include verification that the algorithmic trading system has:

- been tested under various market conditions to identify problematic outcomes related to the operation of the algorithmic trading system;
- built-in features or functionality that prevent (or provide a real-time alerts when) certain pre-programmed order or trade parameters from being exceeded (i.e. certain volume, order or price limits); and
- an “override” functionality which either automatically “disengages” the operation of the algorithmic trading system or permits the Participant to do so remotely.

**Notwithstanding that a Participant may rely on representations from the DSA client or the provider of the algorithmic trading system used by the DSA client, the Participant continues to be responsible for any offending order entered on or trade executed on a marketplace resulting from the improper operation of the algorithmic trading system.**



**4. Under what circumstances will IIROC vary or cancel orders entered or trades executed on a marketplace by a “runaway” algorithmic trading system?**

In the ordinary course, IIROC will only intervene to cancel or vary an order or trade resulting from a “runaway” algorithmic trading system if, in the opinion of an IIROC Market Integrity Official, the order or trade has impacted the fair and orderly operation of the market or otherwise represents a risk to market integrity. The determination of what constitutes an “impact on a fair and orderly market” or “risk to market integrity” is a fact-specific analysis driven by numerous competing factors. IIROC retains absolute discretion as to the determination of when, and under what circumstances, IIROC will intervene to cancel or vary an order or trade (or series of orders and/or trades).

If a Participant has allowed a high volume of orders to be entered on a marketplace by a “runaway” algorithmic trading system (by the Participant’s or DSA client’s algorithmic trading system), the Participant will be fully exposed to the risks associated with the execution of the orders unless the trades are varied or cancelled by IIROC. A Participant who uses or allows its clients to use an algorithmic trading system to enter orders on a marketplace should not rely on IIROC to intervene in the case of a “runaway” algorithmic trading system. The Participant should have adequate guidelines for, and means of, disengaging an algorithmic trading system.

**5. Once a Participant has disengaged a “runaway” algorithmic trading system, is there a minimum period of time during which the algorithmic trading system must remain disengaged?**

No. Once a Participant has disengaged the operation of an algorithmic trading system, including algorithmic trading system used by a DSA client, there is no required minimum period of time during which the algorithmic trading system must remain “off-line”. IIROC expects that a Participant, consistent with its supervisory obligations, will take appropriate steps to ensure that the issues that gave rise to decision to “disengage” the algorithmic trading system have been resolved to the satisfaction of the Participant and that appropriate safeguards are in place to prevent the entry of “unreasonable” orders on a marketplace.

**6. Is a Participant expected to access the “code” or other proprietary aspects of an algorithmic trading system supplied by a third party provider or used by a DSA client?**

The obligation that a Participant test an algorithmic trading system used by the Participant or its DSA clients does not require that the Participant access the “code” or other proprietary aspects of the algorithmic trading system and the Participant may rely on representations by the DSA client or the provider of the algorithmic trading system.

Notwithstanding a Participant’s reliance on representations by a DSA client or the provider of an algorithmic trading system, a Participant continues to be responsible for



all orders entered on a marketplace by a “runaway” algorithmic trading system. This includes instances in which the cause of the malfunction which gave rise to the “runaway” algorithmic trading system was attributed to an aspect of the algorithmic trading system’s operation that was not “accessible” to the Participant for testing.