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IIROC Backgrounder: Enhanced Market Surveillance System – Nasdaq SMARTS

What is SMARTS?

SMARTS is Nasdaq’s state-of-the-art surveillance technology. IIROC uses this leading-edge system to monitor trading activity on Canadian debt and equity markets. The use of SMARTS ensures that IIROC will continue to keep pace with the transformation and innovation associated with trading activity in the Canadian debt and equity markets. IIROC directly manages and maintains the SMARTS system, which monitors up to one billion transactions daily in real-time and supports cross-asset surveillance and investigations. Using SMARTS, IIROC’s market surveillance team can now more quickly detect trading anomalies across multiple products, individual traders and firms, and identify and respond to emerging trends in an efficient manner.

IIROC’s surveillance role

Under Recognition Orders issued by the Canadian Securities Administrators (CSA) and by agreement with the marketplaces, IIROC monitors all equity and debt market activity to ensure trading is carried out in accordance with Universal Market Integrity Rules (UMIR) and other IIROC rules. Regulatory oversight is centralized in IIROC, which monitors all trading activity at Canada’s five stock exchanges and eight Alternative Trading Systems (ATS) and all debt trading carried out by its member firms and individual traders.

Evolution of trading

Trading has evolved rapidly over recent years both globally and in Canada. New marketplaces, new participants, and new technologies and tools aimed at modernizing investing and trading mean that IIROC, like other regulators, must continue to keep pace. We have also continued to see a dramatic growth in the speed and volume of trading, as well as the emergence of other innovations such as crypto-assets. Even more explosive is the growth in “messages”, which include quotes, orders and cancellations in addition to trades themselves.

To meet increasingly fast-paced, technology-driven demands, it is important for IIROC to provide efficient and up-to-the-minute oversight. For example, in fiscal 2018/19, a volume of 268 billion in total shares were traded. IIROC monitored more than 489 million trades – up from 446 million trades in fiscal 2017/18. Ten years ago, this number was 262 million. Also last year, IIROC coordinated 1,634 trading halts and 46 cease trade orders.

In response to these levels of growth, the new SMARTS system was developed as an industry-leading platform with rich features and functionally, providing IIROC a highly customized, world-class, real-time surveillance system with the flexibility to meet current and also future needs. With an eye to the future, scalability provides a capacity for as much as double today’s peak message volumes. IIROC’s efficiency is significantly enhanced with a direct link to a new single case management system used across all departments, providing a streamlined, seamless approach not only to market surveillance but to collaboration with IIROC’s Enforcement team – if and when a potentially manipulative or abusive trading activity is identified by Surveillance and must be referred to Enforcement.

The role of alerts in surveillance

IIROC's team uses alerts designed by SMARTS, modified for the Canadian markets, and also designs its own alerts integrated into the SMARTS platform to monitor trading for unusual activity. When triggered, the alerts point to trading patterns that staff can initially analyze and further investigate, if necessary. Alerts can be set using algorithms to identify unusual patterns in prices or volumes, as well as to flag indications of possible rule infractions. SMARTS was designed to improve former surveillance alerts and allows IIROC analysts to design new kinds of alerts, including those with the ability to track trading activity across multiple marketplaces in a single window.

SMARTS features enhance IIROC surveillance

SMARTS:

- **provides cross-asset capabilities** allowing IIROC to monitor activity across equity and debt markets, and any future assets, to assist us in detecting abusive trading practices in related assets.
- **integrates data**, making metrics accessible to IIROC's data scientists for foundational use in future IIROC projects centering on artificial intelligence and alert development.
- **modules provide IIROC with new data visualization tools** that take multiple sources of data and distill them into a single snapshot, giving IIROC an immediate and clear picture of the activity so that they can quickly assess next steps.
- **generates an expanded suite of alert algorithms** for use and collaboration among other jurisdictions.
- **expands into new products** for surveillance – such as crypto-assets, if required.
- **allows IIROC to simultaneously monitor multiple markets** by consolidating different market regulatory data feeds, giving IIROC a single window on all trading activity.
- **avoids the need for costly and time-intensive upgrades.** Regulators need to be able to rely on a surveillance technology that is scalable and adaptable in a cost-effective manner.
- **adds more monitoring capacity.** SMARTS will process up to one billion messages per day at peak traffic. It is easily scalable to meet the anticipated growth in the volume of messages and trades.
- **gives IIROC the ability to institute cross-market alerts** to more easily monitor trading activity on all marketplaces in a particular security or by an individual market participant.
- **enables IIROC to more easily identify potential violations** such as “trade-throughs”.
- **provides the potential for cross-product monitoring** of other securities related to particular stocks. This allows IIROC to more effectively monitor trading in a single window of related securities, such as a company's stock, its corporate bonds and its equity options.
- **accepts feeds in standardized formats**, providing consistency and making compliance easier and more cost-effective for the exchanges and ATSS.
- **allows for artificial intelligence** that is more analytical and predictive.

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