

Technical Notice**11-017**

TO: MX Participants, Vendors and ISVs

FROM: Participant Connectivity Coordinator

SUBJECT: Launch of Risk Management Tools & A4 Protocol Version Requirements

DATE: August 18, 2011

The purpose of this announcement is to inform all clients that the Montréal Exchange Inc. (MX) is implementing a series of risk controls in effort to meet risk management Industry standards. As we embrace high-speed trading and new technology to meet diverse needs of our global trading community, this initiative will strengthen our marketplace by increasing the ability of our participants and their customers to manage risk exposure more effectively.

With the MX risk controls, trading firms and software vendors can integrate in real time participant's order acknowledgments, executions and quoting (optional) activity into their trading and risk management systems.

The MX is targeting organizations risk officers and Information Technology personnel interested in the functional design for each risk tool being offered. This notice is a supporting document to the risk tool interface technical specifications. When read with the technical specifications, these documents will provide MX participants all the details required to develop the new functions and access the Drop Copy service.

Here are the service and functions that are being offered to clients.

- **Drop Copy**
- **User Global Cancel**
- **While Connected**

The following attached specifications are recommended for review to get a complete reference on the Drop Copy service that is being offered.

- **Drop Copy SAIL Specifications Guide & Business Design Guide**

This notice summarizes the changes but does not take the place of the Montréal Exchange published specifications for each of its services. Please consult the latest versions of the SAIL, FIX, and STAMP, specifications for full requirements and details. The following MX specifications are recommended for review to get a complete reference on each of the mentioned risk tools being offered.

- **DROP Copy Certification Test Cases**
- **SAIL Specification Guide and SAIL Certification Test Cases**
- **FIX Specification Guide and FIX Certification Test Cases**
- **STAMP Certification Test Cases**

Updated SAIL, FIX and STAMP Specifications and certification test cases will be available at a later date.

Risk Tool Overview

- **MX Drop Copy**

The MX SAIL Drop Copy feed will be a new connection per Participant to receive a copy of all order and quote (optional) activity acknowledgments and trade notifications messages, regardless of order entry protocol initially used by the participant. Participants are required to develop the SAIL messages to access the drop-copy feed via the SAIL Drop-Copy Front End. Participants will connect to a separate Port to receive order and/or quote activity acknowledgments and trade notifications. (See section 10 and 11 for Port information.)

No customization is available at the MX side for filtering messages on attributes of order and quote acknowledgments as well as trade notifications. All data will be disseminated and clients wishing to filter the incoming messages must do so within their internal systems. The only permissible incoming message that will be accepted is the new GZ- *UserGlobalCancellation* message. Details regarding the GZ message are mentioned below under the Global Cancel Section.

Drop Copy service will be offered as part of the **A4** Protocol version. Please refer to the attached technical MX SAIL DROP Copy Specifications for additional details.

It is the participant's responsibility to ensure that their telecom bandwidth will be able to support their additional flow of information created by their Drop copy connection. Please refer to Drop Copy Bandwidth Requirements in section 1.1.1.

The Drop Copy service is not available in the FIX and STAMP protocol.

- **User Global Cancel**

With this release the User Global Cancel (*UserGlobalCancellation*) will allow a Participant to send a new **SAIL "GZ"** message request to cancel all existing orders and/or quotes on a separate channel based on the following criteria:

- Firm : Cancels all orders/quotes for the Firm ID of the Participant
- Trader: Cancels all orders/quotes for a specific Trader ID of the firm of the Participant
- Instrument Group: Cancel all orders/quotes for all instruments of a specified group
- Instrument: Cancel all orders/quotes for a specific Instrument of a specific group
- Account Type : Cancels all orders/quotes for a list of Account Types (one or many)
- Cancellation Type: All, Orders or Quotes Only, Market Orders only or Stop Orders only

There is no equivalent SAIL GZ message available in the FIX or STAMP protocol. This function is offered as part of the **A4** Protocol version only.

Once the *UserGlobalCancellation* message has been processed by the system, a cancellation notice is sent to participants who entered orders/quotes cancelled by the message. This notice is sent for any impacted order entered through SAIL, FIX or STAMP or any impacted quote entered through the SAIL protocol.

See section 2 for the supported new and modified acknowledgments on the SAIL, FIX and STAMP Protocol following a SAIL *UserGlobalCancellation* message.

- **While Connected**

With this release, the day orders with **WhileConnected** functionality are day orders that are valid for a day and are purged from the system in case of disconnection of the participant. The day orders with **WhileConnected** functionality will be available to improve participant order management in case of disconnection with the Exchange.

Orders sent to the MX Trading Engine with this new type will remain active in the trading book until one of the following events occurs:

- The normal trading day ends.
- The logical or physical SAIL or FIX connection used to enter the order ends following an unsolicited disconnection.
- The logical or physical SAIL, FIX or STAMP connection used to enter the order ends following a solicited disconnection (logout request).
- The SAIL, FIX or STAMP front-end used to process the order loses its connection to the MX Trading Engine.

Participant notification: When an order with *WhileConnected* functionality is eliminated from the MX order book the participant will receive, on reconnection on the same trading day, a cancel (unsolicited) elimination message in their respective protocol indicating the order is no longer active. This function is offered as part of the A4 Protocol version only.

Risk Function Technical Details

1. Drop Copy Functionality

1.1. Drop Copy New Order & Quote Outbound Messages

The next table lists messages received on the Drop Copy SAIL FE.

Protocol	Drop Copy Message Types	Description	Drop Copy Order Channel	Drop Copy Orders and Quote Channel	Reference
SAIL	KE: Order Acknowledgment (Extended version)	This message is used to acknowledge an order entered in the system	X	X	Drop Copy Specifications & Business Design Guide v.1.0
	KM: Order Modification Acknowledgment (Extended version)	This message is used to acknowledge a modification of a previously booked order	X	X	
	KZ: Order Cancellation Acknowledgment (Extended version)	This message is used to acknowledge the cancellation of a previously booked order.	X	X	
	NZ: Order Cancellation Notice (Extended version)	This unsolicited message is used when an order is cancelled by the MX Monitoring Department, by the system or by a Global Cancellation. It provides information on the cancelled Order.	X	X	
	NT: Execution Notice (Extended version)	This message is an execution notice for a trade.	X	X	
	NL: Leg Execution Notice (Extended version)	This message reports the execution notice for a leg of a strategy trade.	X	X	
	NX: Execution Cancellation Notice (Extended version)	This message is an execution cancellation notice.	X	X	
	NY: Leg Execution Cancellation Notice (Extended version)	This message reports the execution cancellation notice for a leg of the strategy trade.	X	X	
	NP: Cancellation Of All Quotes Notice	This message is sent when either a Global Cancellation message (GC) or a UserGlobalCancellation (GZ) for Quotes is received.		X	
	KG: Global Cancellation Confirmation	This message is the acknowledgement of a Global Cancellation (GC) message.		X	

	JP: BulkQuote Acknowledgment	This new message acknowledges the receipt of a Bulk Quote message.		X	
	NE: Excluded Instrument Notice	This new message informs the Participant of the list of excluded instruments from the next SAIL KG or SAIL NP message.		X	See below Section 2.4

1.1.1. Drop Copy Bandwidth Requirements

For MX participants receiving Drop Copy, clients will need to calculate their order and/or quote sizing information so that they can insure they have sufficient bandwidth to receive the Drop Copy without impacting their other traffic. For estimation purposes, participants should refer to the below metrics:

Bandwidth Required	
Orders	800 bits per second per order
Quotes	2500 bits per second per 10 quotes

For participants that plan to receive both order and quote acknowledgements will need to aggregate their requirements for each.

2. User Global Cancel - Functionality

2.1. New GZ SAIL Message - UserGlobalCancellation

This new SAIL message is sent to cancel orders and/or quotes in the trading system. The following below table displays the format, length, and description for each field type.

Under the Format column note that:

- A = Alphabetic
- N = Numeric
- X = Alphanumeric

Field Name	Field Type	Format	Length	Description	Required/Optional
SAIL Incoming Message Header (Message type = GZ) Refer to SAIL specifications for definition on the Incoming business messages. * For Firm cancellation of orders/quotes it is required to enter the 4 characters of the Firm ID followed by 4 blanks in the mandatory 8 characters within the Trader ID Field Type. * For Trader cancellation of orders/quotes it is required to enter the mandatory 8 characters of the specific trader within the Trader ID Field Type.					
Group	Group ID	X	2	Instrument group	Optional Can be empty, indicates all orders and/or quotes can be cancelled. If filled, the group must be valid.
Instrument	Instrument ID	X	4	Instrument identifier	Optional Can be empty. If an Instrument is specified, the group has to be specified.
Type of Cancellation	CancellationType	A	1	Type of cancellation. Possible values: ▪ All ('A') ▪ QuotesOnly ('Q') ▪ OrdersOnly ('O') ▪ StopOrdersOnly ('S')	Required Refer to the description

Field Name	Field Type	Format	Length	Description	Required/Optional
				MarketOrdersOnly ('M')	
AccountTypeFilter	AccountTypeList	X	8	Account types for which the type of cancellation applies to: - Client ('1') - Firm ('2') - Pro ('4') - NonClient ('5') - InsiderClient ('I') - InsiderFirm ('N') - InsiderPro ('S') - InsiderNonClient ('R') - ShareholderClient ('H') - ShareholderFirm ('O') - ShareholderPro ('L') - ShareholderNonClient ('D') A combination of these values might be used, without comma. Examples: "24" for both Firm and Pro "12" for both Client and firm	Optional Can be empty. If filled, it indicates the list of account types for which orders/quotes can be cancelled.

2.2.New and modified Acknowledgement messages related to *UserGlobalCancellation*

Below are the supported new and modified acknowledgments on the SAIL, FIX and STAMP Protocol following a SAIL User Global Cancellation message. Participants supporting the SAIL *UserGlobalCancellation* message and submitting orders on FIX or STAMP protocols will be required to contact the Technical Help Desk to have their profile configurations activated. This step is required to receive the new values in the order acknowledgement of their respective FIX or STAMP protocol.

Protocol	Impacted Acknowledgments	Description and Impacted Messages
SAIL	NE - ExcludedInstrumentNotice	New message (refer to 2.3 below) This message is sent by the trading engine to specify instruments which are excluded from the next (KG or NP) message.
	NZ - OrderCancellationNotice	The structure of the NZ and KZ messages are unchanged with new values for Order Status: - CancelledBySupervisor ('G') - CancelPending ('W')
	NP - CancellationOfAllQuotesNotice	Modified Message. The new structure of the NP message is shown in section 2.4. The field Quote Cancel Reason has the following values when a quote is cancelled by a <i>User Global Cancellation</i> (GZ) message - CancelledBySupervisor ('G') - CancelPending ('W') Other possible values of <i>Quote Cancel Reason</i> are shown in section 2.4

FIX	8 - Execution Report	Tag 39 - OrdStatus has the following new values: - CancelledBySupervisor ('S') - Cancel Pending ('6')
STAMP	OrderCancelResp	Field Identifier 16 (ConfirmationType) has the following new value: "Pending"

2.3. Message Format for new NE message - *ExcludedInstrumentNotice*

Field Name	Field Type	Format	Length	Description	Req/Opt
SAIL Incoming Message Header (Message type = NE)					
Group	Group Id	X	2	Instrument group	R
Filler	2 Bytes filler	X	2		R
TraderID	TraderId	X	8	Trader identifier associated to the instrument list.	R
Filler	4 Bytes filler	X	4		R
NbOfInstruments	Nb4	N	4	Number of instruments in the list of the message.	R
Instrument	Instrument Id	X	4	List of excluded instruments from the next SAIL KG or SAIL NP message. The SAIL Instrument ID is used in this array.	R

2.4. Message Format for modified NP message - *CancellationOfAllQuotesNotice*

Field Name	Field Type	Format	Length	Description	Req/Opt
SAIL Incoming Message Header (Message type = NP)					
Group	Group Id	X	2	Instrument group	R
Instrument	Instrument Id	X	2	Instrument identifier	R
TraderID	TraderId	X	8	Trader identifier associated to the instrument list.	R
Quote Cancel Reason	Enum	A	1	Cancel reason for emitting the NP message. Can take the following values: - Cancelled By System ('S') - Cancelled By Market Operations ('M') - Cancelled By Trader ('A') - Eliminated on Disconnection ('I') - Cancelled By Supervisor ('G') - Cancel Pending ('W') - Cancelled By Circuit Breaker ('C')	R

3. While Connected Functionality

3.1. Modified messages related to *WhileConnected*

Protocol	Impacted Message Types	Impacted Tag/Field
SAIL	OE - Order Entry	Field Duration Type has the new value: WhileConnected ('W')
	OM- Order Modification	Field Duration Type has the new value: WhileConnected ('W')
	NZ - Order Cancellation Notice	Field OrderStatus has the new value: Eliminated On Disconnection ('I')

FIX	D - New Order Single	Tag 59 - TimeInForce has the following new value: While Connected ('W')
	G - Order Cancel/Replace	Tag 59 - TimeInForce has the following new value: While Connected ('W')
	8 - Execution Report	Tag 59 - TimeInForce has the following new value: - While Connected ('W') Tag 39 - OrdStatus has the following new values: - Eliminated On Disconnection ('I')
STAMP	NewOrder	Field Identifier 39 (OrderDuration) has the following new value: While Connected ("WC")
	OrderCancelResp	Field Identifier 39 (OrderDuration) has the following new value: - While Connected ("WC") Field Identifier 16 (ConfirmationType) has the following new value: - Pending ("Pending")
	CFO	Field Identifier 39 (OrderDuration) has the following new value: While Connected ("WC")
	CFO-Resp	Field Identifier 39 (OrderDuration) has the following new value: While Connected ("WC")

4. Activating Risk Tools Functionality

SAIL Protocol: The Risk Tools Functionality will be supported in the new SAIL protocol version A4. Clients will need to develop and specify A4 in the **Field Type** in the SAIL TC: **User Connection** message to take advantage of any of the above functions.

FIX Protocol: Activation of While Connected functionality and order acknowledgments (refer to table 2.2 and 3.1) requires FIX participant to contact Technical Help Desk (THD).

STAMP Protocol: Activation of While Connected functionality and order acknowledgments (refer to table 2.2 and 3.1) requires STAMP participant to contact Technical Help Desk (THD).

5. Additional Mandatory and Optional Messages for Protocol Version A4

In addition to the above risk tool requirements, participants will need to support the following mandatory and optional messages on the SAIL, FIX and STAMP order entry gateways. This is required to take advantage of the enhancements made on the A4 Protocol. Please refer to below tables for new values.

Protocol	Impacted Messages	Description and Impacted Messages
SAIL	NZ - Order Cancellation Notice	The structure of the NZ message is unchanged with new values for Order Status: - Eliminated By Market Control ('M') - Eliminated By Circuit Breaker ('C') Please refer to section 2.2 and 3.1 for additional values for Order Status
	NP - Cancellation Of All Quotes Notice	The structure of the NP message has changed. Please refer to Section 2.4

	KE - Order Acknowledgement	The structure of the KE message is unchanged with new values for Order Status: - In the Book As Stop ('S') - Eliminated By Circuit Breaker ('C')
	KM - Order Modification Acknowledgement	The structure of the KM message is unchanged with new values for Order Status: - In the Book As Stop ('S') - Eliminated By Circuit Breaker ('C') Other values are shown in sections 2.2 and 3.1
FIX	8 - Execution Report	Tag 39 - OrdStatus has the following additional new values: - Eliminated By Circuit Breaker ('G') - Eliminated By Market Control ('M') Other values are shown in sections 2.2 and 3.1
	8 - Execution Report	A new Tag 5255 = 'S' (StopPxCondition) will be returned when a Stop Order (Tag 40 = '4' (Stop)) is booked or executed.

5.1. Extended Message Format for modified BD message - Bulk Quote Data

This new extended message contains specific protection data and trader's data valid for further Bulk Quotes. A new BD message replaces previously entered data.

Field Name	Field Type	Format	Length	Description	Req/Opt
SAIL Incoming Message Header (Message type = BD)					
Group	Group Id	X	2	Instrument group	R
Clearing Data	Clearing Data		20	Refer to SAIL Specifications Guide	R
Owner Data	Owner Data		50	Refer to SAIL Specifications Guide	R
Filler	52 bytes filler	X	52		R

6. Timeline

August 19, 2011	MX General Test Environment (GTE) will support the Drop Copy service and 2 new enhancements. Participants and ISVs are asked to test their applications for those who want take advantage of these new functionalities.
August 22, 2011	Contact Mark Bourcier for certification requirements and scheduling.
September 26, 2011	Production Go live for Risk Tools.

7. Risk Tool ID Forms and Fees

Participant who have certified to the Drop Copy Service and User Global Cancel functionality will be required to fill out and submit a Drop Copy and User Global Cancel Request Form. Once the form is submitted and approved by MX, participants will be configured accordingly in production. These forms will be available by contacting the Technical Help Desk (THD). Forms will be made available at a later date which will be communicated.

The SAIL Drop Copy Fee will be waived for clients that use this service for the first (6) months following the launch of Drop Copy Fee scheduled for September 26, 2011. Effective April 2012 a per month fee of \$500.00 CAD for the Drop Copy service will be charged as a separate line item. Further details on the Drop Copy Fee will be communicated at a later date.

Clients that require a connection to each service will be invited to fill in the Drop Copy and/or User Global Cancel Request Form. Please, fill one form per business unit.

No credentials will be provided for requests that do not contain the required signatures. The Technical Help Desk will provide the configured ID credentials to the Participant as well as the message types the customer wishes to receive for the Drop Copy Group.

8. Drop Copy SAIL Specifications Guide & Business Design Guide

The attached document outlines how to connect to the drop copy gateway and provides detailed message types for this functionality. The Drop Copy Specifications Guide is the technical document that describes a subset of the SAIL Protocol and introduces new messages required for the drop copy service

The **SAIL Specifications Guide** describes the message format for constructing and transmitting the new **While Connected Functionality** and/or **User Global Cancellation** message using the native SOLA® Access Information Language will be made available at a later date.

The **FIX & STAMP Specifications Guide** describes the message format for constructing and transmitting the new **While Connected Functionality** will be made available at a later date.

9. Risk Management Certification Requirements

To take advantage of the risk management tools in production clients will be required to perform and pass the necessary certification requirements in the MX GTE. This is compulsory before any subscriber uses any of these tools in production. Subscribers can choose to use an Independent Software Vendor (ISV) that has completed the certification requirements for any of the risk tools.

To obtain the risk tool certification test cases and to schedule a certification date, please contact Mark Bourcier by e-mail at mbourcier@m-x.ca.

10. GTE Test Environment

All risk management functions will be available in the MX GTE on August 19, 2012 to allow developers to test and support any of these new features. This will ensure client readiness before release in production.

Application testing and support is available Mondays through Fridays, from 8:00 am (EST) to 4:30 pm (EST). After-hours testing is available without support on Mondays through Fridays, from 4:30 pm (EST) to 10:30 pm (EST).

MX General Test Environment Service	MX IP Address IP	Port
Drop Copy for Orders only and User Global Cancel	142.201.223.39 142.201.3.69 (VPN)	28122
Drop Copy for Orders/Quotes and User Global Cancel	142.201.223.39 142.201.3.69 (VPN)	28123
User Global Cancel	same as order entry connection	same order entry connection
While Connected	same as order entry connection	same order entry connection

11. Production Environment

All risk management functions will be available in production on **Monday, September 26, 2011**. Please contact the Technical Help Desk at 1-877-588-8489 or by e-mail samsupport@m-x.ca to access any of the production risk tools.

MX Production Service	MX IP Address IP	Port
Drop Copy for Orders only and User Global Cancel	198.235.29.87	28122
Drop Copy for Orders/Quotes and User Global Cancel	198.235.29.87	28123
User Global Cancel	same as order entry connection	same order entry connection
While Connected	same as order entry connection	same order entry connection

Additional details will follow the connectivity Drop Copy, Global Cancel and While Connected process.

Contact Information

For any additional information on this notice or if you require technical support, do not hesitate to contact the Technical Help Desk (THD) at 1-877 588-8489 or by e-mail at: samsupport@m-x.ca.

We thank you for your cooperation.

Participant Connectivity Coordinator