Recommendations for the consumption of information on Market Data through Multicast

Aim

Provide suggestions and recommendations to clients of the Mexican Stock Exchange concerning How to use the protocol defined for the consumption of information of Market Data via Multicast.

Introduction

The purpose of this document is only to mention some key points that must be taken into account by customers who consume the information of Market Data via Multicast.
It is not rigorous to carried out as they are describing, each client can have a different alternative, so they are only suggestions or recommendations for end Market Data user.

Real-time Information Considerations in

The information sent in real-time is distributed through two channels in which are transmitting identical information, one of them known as Feed A and the other as Feed B.

C1.- If not receive some package on either channel, you need to check on the other if the package arrived; avoid asking for retransmission immediately.

C2.- It suggested to take one of the two channels as the central, although you should always be listening to the two channels. The recommendation, take Feed A as the primary, and if not receive any package, refer to Feed B.

C3.- Either Multicast FEED (FEED A and FEED B) sent information every 5 seconds, and they have a mechanism that sent a Heartbeat message If there are no messages to spread at that time. This mechanism helps to identify if there is an issue to receipt information.

C4.- The shipment in real-time and also through the mechanisms of recovery is through packages, and each one of them can contain multiple messages. The header indicates how many messages contain each of these packages. The number of messages is dynamic, not fixed.

C5.- The encoding used for the ISO 8859-1 alpha fields is left-justified and filled with spaces to the right. The entire fields are ordered under the big-endian system and with a sign.

Recovery Services

C6.- To connect to the recovery services, either to the relay or the Snapshot, there are two available IPs for the subscription. Customers will need to carry out their requests in any of the two IPs, and if one of them does not respond, they must wait 5 seconds before trying to connect to the other IP address.

C7.- By security, the IPs of customers on which they intend to request retransmissions or Snapshot must have previously registered, and the IP's registry done with a day in advance.

C8.- Request for retransmissions only in the case that you no find the sequence on either FEED and if your lost is below to 19,9999 registers.

C9.- To avoid more retransmissions or that you stop to operate when you request retransmission, do not let to consume in real-time.

C10.- Use the Snapshot only as a last chance when you have an extraordinary problem.

Full-depth

For channels where the full depth information is disseminated, it is the responsibility of the consumer to keep building the trading floor as you receive notifications of high, low, and change of the positions.
The formats in which you can make your trading floor of Bid-Ask Postures are the following:

- A: Alta de Orden / Order Addition
- F: Modificación de Orden / Order Change
- C: Ejecución de Ordenes / Execution of Orders
- D: Cancelación de Ordenes / Orders Cancellation

C11.- For market price positions, they will send with a value of zero for the price.

C12.- In the positions which entered with a hidden volume, it will not forward the volume that keeps the positions covered, only the one that is available be available for display.

C13.- The message Execution of Orders indicates that there has been a trade and must restart volume to the position, whether it is entirely closed or only a bias.

C14.- When there is no more volume for order, the remaining amount will be negative because there were executions or decreases in volume, you must remove the trading floor. However, it could be re-activated the same number for that same instrument, derived from the positions that held a hidden volume.

Then it is shown, the way to process Multicast messages and examples of how to set up the order book and trades.

To have more detail about every message and its structure, please consult this link:
http://tecnologia.bmv.com.mx:8080/especificacion/

Message A: Order Addition

When there is a new order of sell or buy, received a message type A.

Structure:

[Msg:A|InstrumentNumber|Date|OrderID|Direction|Volume|Price|Participant]

Case 1. Receive a new order of buy for the instrument X*.

[Msg:A|362458|1588960815000|2|BUY|1234|999800000000|MULVA   ]

This information feeds the book of buys as follow:

		VENTA/SELL					COMPRA/BUY					HECHOS/TRADES						
INST		PRICE	VOL.	PARTY	DATE	ID	PRICE	VOL.	PARTY	DATE	ID	TIME	SELLER	BUYER	VOL	PRICE	TOTAL	TradeID
X *		9,998.00	1,234	MULVA	08/05/2020	2												

Message F – Order change

When there is a change in the order either for increases the volume or change the price, will receive a message F.

Structure:

[Msg:F|InstrumentNumber|OriginalDate|OriginalOrderID|newDate|newOrderID|Direction|Volume|Price]

Case 2. Modifying the order in Case 1 and adding 500 units to the volume (1,234 + 500).

[Msg:F|362458|1588960815000|2|1588960870000|3|Venta|**1734**|999800000000]

		VENTA/SELL					COMPRA/BUY					HECHOS/TRADES						
INST		PRICE	VOL.	PARTY	DATE	ID	PRICE	VOL.	PARTY	DATE	ID	TIME	SELLER	BUYER	VOL	PRICE	TOTAL	TradeID
X *		9,998.00	1,734	MULVA	08/05/2020	3												

Note: The order ID changes from "2" by the new one "3".

Case 3. Modifying the order of Case 2 subtracting 100 units to the volume.

[Msg:F|362458|1588960870000|3|1588960930000|3|Venta|1634|999800000000]

		VENTA/SELL					COMPRA/BUY					HECHOS/TRADES						
INST		PRICE	VOL.	PARTY	DATE	ID	PRICE	VOL.	PARTY	DATE	ID	TIME	SELLER	BUYER	VOL	PRICE	TOTAL	TradeID
X *		9,998.00	1,634	MULVA	08/05/2020	3												

Note: There is no change in the OrderID when the modification decreases the volume.

Case 3.1 Modifying the order in Case 3, and updating the volume to 1734 units again.
[Msg:F|362458|1588960870000|2|1588960930000|3|Venta|1734|999800000000]

INST	VENTA/SELL					COMPRA/BUY					HECHOS/TRADES						
	PRICE	VOL.	PARTY	DATE	ID	PRICE	VOL.	PARTY	DATE	ID	TIME	SELLER	BUYER	VOL	PRICE	TOTAL	TradeID
X *	9,998.00	1,734	MULVA	08/05/2020	3												

Note: The original OrderID, no longer exists (2), therefore, the modification applies over the new OrderID, keeping the same folio.

Message C – Execution of Orders

The C message is sending when there is an execution in the BMV's electronic system. For every trade, there are two messages, one for the buy participant and another for sell participant.
The system only sends this message for the execution of orders in the main book or cash "CO".
Structure:
[Msg:C|InstrumentNumber|Date|OrderID|Volume|TradeID|ExecutionPrice]
Case 4. New buy order consume the volume of the sell order in Case 3.
[Msg:C|362458|1588961072|3|1634|8|999800000000] – Message for Buy participant.
[Msg:C|362458|1588960930|5|1634|3|999800000000] – Message for Sell participant.
Entered a new buy order

INST	VENTA/SELL					COMPRA/BUY					HECHOS/TRADES						
	PRICE	VOL.	PARTY	DATE	ID	PRICE	VOL.	PARTY	DATE	ID	TIME	SELLER	BUYER	VOL	PRICE	TOTAL	TradeID
X *	9,998.00	1,634	MULVA	08/05/2020	3	9,998.00	1,834	GBM	08/05/2020	8							

Note: If the volume of the Buy/Sell order exceeds the one with it concretes the trade, the remaining volume is canceled by trading rule, and the trade concreted with the volume available.
Trade is concreted, and the Buy/Sell books are cleaned.

INST	VENTA/SELL					COMPRA/BUY					HECHOS/TRADES						
	PRICE	VOL.	PARTY	DATE	ID	PRICE	VOL.	PARTY	DATE	ID	TIME	SELLER	BUYER	VOL	PRICE	TOTAL	TradeID
X *											13:04	MULVA	GBM	1,634	9,998.00	16,336,732	1

Message D – Order Cancellation

Structure:

[Msg:D|InstrumentNumber|Date|OrderID]

Case 5. Receive a cancellation message for an existing buy order.

[Msg:D|362458|1588963390000|12]

INST	VENTA/SELL					COMPRA/BUY					HECHOS/TRADES						
	PRICE	VOL.	PARTY	DATE	ID	PRICE	VOL.	PARTY	DATE	ID	TIME	SELLER	BUYER	VOL	PRICE	TOTAL	TradeID
X *						9,980.00	200	GBM	08/05/2020	12	13:04	MULVA	GBM	1,634	9,998.00	16,336,732	1

The folio 12 is deleted from the buy book

INST	VENTA/SELL					COMPRA/BUY					HECHOS/TRADES						
	PRICE	VOL.	PARTY	DATE	ID	PRICE	VOL.	PARTY	DATE	ID	TIME	SELLER	BUYER	VOL	PRICE	TOTAL	TradeID
X *											13:04	MULVA	GBM	1,634	9,998.00	16,336,732	1