High Speed Vendor Feed

SOLA® HSVF UDP Multicast Specifications Guide for MX

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Document History

VERSION	DATE	CHANGE DESCRIPTION
1.0	2014-05-01	Initial document
1.1	2014-08-19	Section 6, Tick Table has been modified and re-worked. Field Name ’Stamp Time’ has been changed to ’Timestamp’ in messages ’C’, ’CB, ’CF’, ’CS’, ’I’, ’IB’, ’IF’, ’IS’. Definition of Timestamp for messages; ’C’, ’CB, ’CF’, and ’CS’ is ’Time of the transaction’ Definition of Timestamp for messages; ’I’, ’IB, ’IF’, and ’IS’ is ’Time of the cancellation transaction’
1.2	2015-02-04	Section 3.2.19, modified Message Type FB
1.3	2015-04-02	Modification to Section 2.6, Retransmission, first note Sections 3.2.38, 3.2.39, 3.2.40, 3.2.41: Modification of Data type for Bid/Ask Size fields
1.4	2015-08-17	Modification to Section 2.6, TCP Retransmission Capability, third note Section 3.2.2, Message Type LI, remove D3 protocol, add D4 protocol Section 3.2.14, add Message Type CW Section 3.2.19, add Message Type DW Section 3.2.24, add Message Type FW Section 3.2.31, add Message Type HW Section 3.2.36, add Message Type IW Section 3.2.48, add Message Type NW Section 3.2.53, add Message Type QW Section 3.2, add Market Side to Message Type D tables Section 5.8, add Protocol Version table Section 5.9, add Frequency Codes table Section 6.1, add Swap Future tick increment Section 8.3, delete Market Feed Indicators table Section 5.10, add Market Feed Indicators table Section 5.10 add S - Swap to Market Feed Indicators table
1.5	2016-08-01	Correction to Message Type IW (Market Price Indicator) General editing
1.6	2017-07-05	HSVF Improvement: D5 Protocol Section 3.4.1 to 3.4.5: Updates to messages C/CB/CF/CS/CW Section 3.5.2 to 3.5.5: Updates to messages DB/DF/DW

VERSION	DATE	CHANGE DESCRIPTION
		Section 3.6.2 to 3.6.5: Updates to messages FB/FF/FW Section 3.7.2 to 3.7.5: Updates to messages HB/HF/HW Section 3.8.1 to 3.8.5: Updates to messages I/IB/IF/IS/IW Section 3.9.1 to 3.9.6: Updates to messages J/JB/JF/JS/JW Section 3.10.1 to 3.10.5: Updates to message N/NB/NF/NS/NW Section 3.12.5: New message Tick Table TT Section 3.12.8: New message Timebeat Z Grouped field descriptions contained in these sections (4.1, 4.2, 5.1 to 5.10, 6) under new Section 4- Fields Description Section 4.4 (formerly 5.3): Price Indicator updated Section 4.9 (formerly 5.8): D5 added Section 5 (formerly Section 7): J/JB/NS examples updated
	2017-08-14	Section 3.4.2: Correction to CB message Section 3.4.5: Correction to CW message Section 3.7.1: Correction to H message Section 3.9.6: Correction to JW message
1.7	2017-09-15	Section 3.4.1 to 3.4.3: Modifications to C, CB, CF message Section 3.4.9: Modification to JF Section 3.10.1, 3.10.2: N, NB messages updated Section 3.12.1 to 3.12.5: E, EB, EF, ES, EW messages added Section 4.13: Tick Table updated Appendix A: Tick Table added
1.8	2017-09-26	Section 3.12.5: Message Tick Table TT updated Remove Appendix A
	2017-10-16	Section 3.4.3: CF message updated (add paragraph) Section 3.9.6: JW message updated (symbol includes Tenor, Fixed Rate, Fixed Rate Fraction Indicator) Section 3.10.1 to 3.10.5 : N, NB, NF, NS, NW messages updated (Price format, U value description) Section 4.4: Price Indicator Markers updated (Q, V description) Section 4.12: Update to table heading Section 5.2: Update to Example 2
1.9	2017-12-20	Moved Section 3.13 Instrument Schedule messages to 3.6 Added Section 3.13: Trade Correction Messages X, XB, XF, XS, XW
	2018-06-05	Section 4.4 Added Price Indicator Marker value G
	2018-07-13	Section 3.11.2 Message Type NB: Updates to length of fields Underlying Symbol and Delivery Year

VERSION	DATE	CHANGE DESCRIPTION
1.10	2018-09-11	Section 2.2 HSVF Feed Schedule of a Typical Day updated for extended trading hours
1.11	2019-01-23	Section 3.11.2 Message Type NB: Underlying Symbol field length updated to 3 bytes and Delivery Year field length updated to 1 byte (Roll back to Version 1.9) Update to Note 1, p 64

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Section 1 Introduction

The Montréal Exchange (MX)-High Speed Vendor Feed (HSVF) User Datagram Protocol (UDP) Multicast was developed by the Information Technology (IT) division of the Montréal Exchange Inc. (MX), a member of the TMX Group Inc.

The HSVF UDP Multicast is comprised of Trades, Quotes, Market Depth, Strategies, Bulletins, Summaries and other Statistics. Information is provided on all Bourse de Montréal Inc. listings.

The UDP provides to the HSVF Participant a faster dissemination flow of messages. HSVF Participants are to use UDP lines to obtain the Market Dissemination flow from HSVF Repeaters; each UDP line contains a specific Market, a specific Market Depth, and a specific protocol version.

1.1 Objective

The main objective of the Specifications Guide is to provide information to HSVF Participant in the functional design of their application intended to receive the HSVF feed.

1.2 Scope

This Specifications Guide defines the communications interface and message formats for the high speed transmission which broadcasts real-time trading and statistical information from Bourse de Montréal Inc.

1.3 Products Information

Detailed and up-to-date information regarding MX products is available on the MX Website at http://www.m-x.ca/ accueil_en.php under **MX Products**.

For detailed information regarding expiry cycles, refer to http://www.m-x.ca/f_publications_en/cycles_opt_en.pdf.

1.4 Technical Support

Telephone: 514-871-2424
Toll free: 1-877-588-8489

E-mail: samsupport@tmx.com or mxconnect@tmx.com

Section 2 Trading Overview

All messages which comprise the MX-HSVF are transmitted to the user on a dedicated line. Each message type is fixed in format. Re-transmission of any data is available on the transmission line.

2.1 Interface

Bourse de Montréal broadcasts the HSVF feed using both the UDP and TCP/IP broadcast interface as follows:

- Real-time Market Dissemination Flow is broadcasted according to a defined timeline using the UDP interface to allow Participants to connect.
- The TCP interface retransmission can be used by Participants to perform queries of missing messages of the UDP Feed.

2.2 HSVF Feed Schedule of a Typical Day

During a typical day, all messages that comprise the MX-HSVF are transmitted following the schedule illustrated below. Participants can connect at **Start of Connection** time (see Table 1:), which is when the broadcast starts, as the tick table and the dictionary are sent. Until the opening of the market, information regarding the instrument keys, summaries, quote/market depth is broadcasted. At the opening of the market, the trades and trade cancellations resulting from the market activities are transmitted. The connection ends at **End of Connection** time (see Table 1:) after the market closure.

Table 1: HSVF schedule: information broadcasted at each trading phase

TRADING PHASES/ INFORMATION BROADCASTED		OTHER MESSAGES	INSTRUMENT KEYS	SUMMARY	QUOTE/MARKET DEPTH	TRADE/TRADE CANCELLATION
START OF CONNECTION	1:15 a.m. See Note 1	X				
TICK TABLE/DICTIONARY/ INITIALIZATION	1:30 a.m. See Note 1	X	X	X	X	X
PRE-OPENING	See Note 2	X	X	X	X	
OPENED	See Note 2	X	X	X	X	X
SURVEILLANCE INTERVENTION	See Note 2	X	X	X	X	X
END OF DAY	See Note 2	X	X	X	X	X
END OF CONNECTION	6:00 p.m.	X				

Note 1. Timing of this phase with the implementation of extended trading hours in October 2018 is changed to:

- Start of Connection: 12:55 a.m.
- Tick Table/Dictionary/Intialization: 1:00 a.m.

Although the **extended trading hours** have no impact on options on equity, under the new schedule of operations of HSVF, **options on equity** and **all their related strategies** will equally be disseminated at **1:00 a.m**. If participants connect to HSVF after 1:00 a.m, they must ask for a **Retransmit**.

For more information, refer to Technical Notice 18-010.

Note 2. Timing of these phases is defined by the group schedule.

Schedule for GTE Test Environment

The schedule for the GTE test environment, which provides HSVF multicast feeds for testing purposes is as follows:

- Start of day at 1:00 a.m.
- Dictionary transmission at 1:05 a.m.
- End of day at 11:15 p.m.

2.3 Transmission Format

A UDP packet can contain multiple HSVF messages. The UDP packet is built as follows:

UDP Packet			
HSVF Message 1	HSVF Message 2	....	HSVF Message N

A packet can have a maximum of 1000 characters.

Each message is framed by an STX and an ETX character. The format used is:

HSVF Message			
STX	Message Header	Message Body	ETX

STX and ETX indicate the beginning and the end of the record being transmitted.

2.4 Data Format

Each message consists of a standard message header followed by the message body, which varies in format according to the message type.

Table 2: Message Header

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Sequence Number	9	N	Each message is assigned a sequence number starting at ’000000001’ every day and incremented by 1 for each message sent. **Note:** Message sequencing is per Line. There is no validation of message sequence for incoming messages. The sequence numbers will range from 000000001 to 999999999 (decimal, ASCII). Retransmitted messages will contain the original sequence numbers.
Message Type	2	X	Identifies the type of message being sent. Format is left-aligned, right ’blank’ filled (if necessary).

2.5 TCP Retransmission Capability

ACTION	PARTICULARS
Normal Connection (Start of Day @ 1:30:01a.m. EST)	1. Participant connects to specified port. 2. Participant sends LI (Login) message type. ex. 000000001LI[User][Pwd][Timestamp][Protocol] 3. If Login is rejected, Exchange sends ER Message to Participant. 4. If Login is accepted, Exchange sends KI (Login Acknowledgement) message to Participant. **Note:** For details on protocol versions, refer to 4.9, Protocol Version.

ACTION	PARTICULARS
Retransmission (From a specific Sequence number of a specific interval of messages)	1. Participant sends RT message type. ex. 000013262RT**000013247***000013259* 2. If Request Transmission accepted, an RB (Retransmission Begin) message is sent to Participant. 3. Exchange sends all messages with sequence number greater than '000013247' up to and including '000013259' for the line. 4. An RE (Retransmission End) message is sent to Participant **Note:** If the **Exchange sequence** is lower than the **Start sequence number,** the transmission request is rejected (ER message). **Note:** If the Start sequence is higher than the End sequence, the transmission request is rejected (ER message).
Disconnection	1. Participant sends LO (Logout) message type. ex. 000000001LO. 2. If Logout is rejected, Exchange sends ER Message to Participant. 3. If Logout is accepted, Exchange sends KO (Logout Acknowledgement) message to Participant.

Section 3 Messages

3.1 Message Types

This section includes a list of all message types grouped within categories.

Note: HSVF users must have the ability to skip and ignore any message that is not defined below. MX may introduce new message types to support extended functions in the future. Because new message types may be defined in future versions of the protocol, anyone using this version of the HSVF protocol must be able to avoid impact of undefined new messages types they may receive.

SECTION 3.3, TCP (RETRANSMISSION) MESSAGES	
LI	Login
LO	Logout
KI	Login Acknowledgement
KO	Logout Acknowledgement
ER	Error Message
RT	Retransmission Request
RB	Retransmission Begin
RE	Retransmission End
SECTION 3.4, TRADE MESSAGES	
C	Option Trade
CB	Future Options Trade
CF	Future Trade
CS	Strategy Trade
CW	Swap Future Trade

Section 3.5, Request for Quote (RFQ) Messages	
D	Option Request for Quote
DB	Future Option Request for Quote
DF	Future Request for Quote
DS	Strategy Request for Quote
DW	Swap Future Request for Quote
Section 3.6, Instrument Schedule Notice	
E	Instrument Schedule Notice Option
EB	Instrument Schedule Notice Futures Option
EF	Instrument Schedule Notice Future
ES	Instrument Schedule Notice Strategy
EW	Instrument Schedule Notice Swap Future
Section 3.7, Quote Messages	
F	Option Quote
FB	Future Options Quote
FF	Future Quote
FS	Strategy Quote
FW	Swap Future Quote
Section 3.8, Market Depth Messages	
H	Option Market Depth
HB	Future Options Market Depth
HF	Future Market Depth

HS	Strategy Market Depth
HW	Swap Future Market Depth
SECTION 3.9, TRADE CANCELLATION MESSAGES	
I	Option Trade Cancellation
IB	Future Options Trade Cancellation
IS	Strategy Trade Cancellation
IF	Future Trade Cancellation
IW	Swap Future Trade Cancellation
SECTION 3.10, INSTRUMENT KEYS MESSAGES	
J	Options Instrument Keys
JE	Underlying Instrument keys
JB	Future Options Instrument Keys
JF	Future Instrument Keys
JS	Strategy Instrument Keys
JW	Swap Future Instrument Keys
SECTION 3.11, SUMMARY MESSAGES	
N	Option Summary
NB	Future Options Summary
NF	Future Summary
NS	Strategy Summary
NW	Swap Future Summary

Summary messages will be sent:

- At the beginning of the day to define the instruments traded on that day
- After a trade cancellation (Open/High/Low/Last)
- At the end of the day with relevant data such as the Open/High/Low/Last/Volume
- During the day if a new instrument is added

SECTION 3.12, BEGINNING OF SUMMARY MESSAGES	
Q	Beginning of Option Summary
QB	Beginning of Future Options Summary
QF	Beginning of Futures Summary
QS	Beginning of Strategy Summary
QW	Beginning of Swap Future Summary
SECTION 3.13, TRADE CORRECTION MESSAGES	
X	Option Trade Correction
XB	Future Options Trade Correction
XF	Futures Trade Correction
XS	Strategy Trade Correction
XW	Swap Future Trade Correction
SECTION 3.14, OTHER MESSAGES	
GR	Group Status
GS	Group Status (Strategies)
L	Bulletins
S	End of Sales
TT	Tick Table
U	End of Transmission

V	Circuit Assurance ("Heartbeat")
Z	Timebeat

3.2 Conventions

In the following tables, the **L** column represents the length in bytes of the described field, and the **T** column ('Data Type') will be represented by the following characters (**A** = Alphabetic, **N** = Numeric, **X** = Alphanumeric).

- Whenever a field is indicated as being blank, it contains the ASCII space character (hex 20).
- **Alphabetic fields – A**: letters (A to Z) left justified, blank filled unless stated otherwise.
- N**umeric fields – N**: numbers (0 to 9), right justified, zero filled with a possibility to see a '.' (ASCII character hex 2).
- **Alphanumeric fields – X**: all characters possible (numbers, letters, others), right justified, zero filled, with the exception of the following fields, which are left justified, and blank filled:
    - o Instrument External Code
    - o Root Symbol (Options related messages)
    - o Symbol (Strategy related messages)
- The 'Filler' field can have any format [numeric, alphanumeric, ASCII space character (hex 20)].

3.3 TCP (Retransmission) Messages

3.3.1 Message Type LI – Login (51 Bytes)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11	X	Refer to Message Header
User[1]	16	X	Participant logging in
Pwd[2]	16	X	Participant password
Timestamp	6	N	Time submitted

[1]Future Use

[2]Future Use

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Protocol	2	X	Value(s) supported: D4, D5 Refer to Protocol Version

3.3.2 Message Type LO – Logout (11 Bytes)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11	X	Refer to Message Header

3.3.3 Message Type KI – Login Acknowledgement (11 Bytes)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11	X	Refer to Message Header

3.3.4 Message Type KO– Logout Acknowledgement (11 Bytes)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11	X	Refer to Message Header

3.3.5 Message Type RT– Retransmission Request (31 Bytes)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11	X	Refer to Message Header
Line	2	X	Specific address and port on which market is disseminated based on a list of CPUs and Market Depth Setting Refer to Line Definitions
Start	9	N	Starting message number
End	9	N	Ending message number

3.3.6 Message Type RB – Retransmission Begin (11 Bytes)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11	X	Refer to Message Header

3.3.7 Message Type RE – Retransmission End (11 Bytes)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11	X	Refer to Message Header

3.3.8 Message Type ER – Error Message (95 Bytes)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11	X	Refer to Message Header
ErrorCode	4	N	Error Code Refer to Error Definitions
ErrorMsg	80	X	Error Message Refer to Error Definitions

3.4 Trade Messages

3.4.1 Message Type C – Option Trade (87 Bytes)

<table>
<tr><th colspan="2">FIELD NAME</th><th>L</th><th>T</th><th>DEFINITION / VALIDATION RULES</th></tr>
<tr><td colspan="2">Message Header</td><td>11</td><td></td><td>Refer to Message Header</td></tr>
<tr><td colspan="2">Exchange I.D.</td><td>1</td><td>A</td><td>Exchange on which the trade occurred
Q = Montreal</td></tr>
<tr><td rowspan="4">Symbol</td><td>Root Symbol</td><td>6</td><td>X</td><td>Option base symbol
(symbol of the underlying)</td></tr>
<tr><td>Expiry Month</td><td>1</td><td>A</td><td>Expiry month code of the option
Refer to Month Codes</td></tr>
<tr><td>Filler</td><td>1</td><td>A</td><td>Filler</td></tr>
<tr><td>Strike Price</td><td>7</td><td>N</td><td>Strike price of the option in full</td></tr>
</table>

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
	Strike Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
	Expiry Year	2	N	Last two digits of the option expiry year
	Expiry Day	2	N	Expiry day of the option
Volume		8	N	Number of contracts for the trade Refer to Indicator Code
Trade Price		6	N	Price at which the transaction took place
Trade Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Net Change Sign +/-		1	A	For the net change field
Net Change		6	N	Net change = last trade price - previous close
Net Change Fraction Indicator		1	X	Fraction indicator for the net change price Refer to Fraction Indicator Code
Filler		6	N	Filler
Timestamp		9	N	Time of transaction HHMMSSmmm
Open Interest		7	N	This field contains the outstanding number of contracts in the series Updated on a trade by trade basis Refer to Indicator Code
Filler		1	X	Filler
Price Indicator Marker		1	A	Identifies the type of transaction Refer to Price Indicator Markers
Trade Number		8	X	Unique Trade Number for this instrument

3.4.2 Message Type CB – Future Options Trade (88 Bytes)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11		Refer to Message Header
Exchange I.D.	1	A	Exchange on which the trade occurred, "Q" for Montreal

Field Name		L	T	Definition / Validation Rules
Symbol	Root Symbol	6	A	Option symbol
	Contract Month Code	1	A	Option month code Refer to Month Codes
	Expiry Year	2	N	Last two digits of the option expiry year
	Expiry Day	2	N	Option expiry day
	Call / Put Code	1	A	C = Call P = Put
	Strike Price	7	N	Strike price in full
	Strike Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Volume		8	N	Total number of contracts traded Refer to Indicator Code
Trade Price		6	N	Price at which the transaction took place
Trade Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Price Indicator Marker		1	A	Identifies the type of transaction Refer to Price Indicator Markers
Net Change Sign +/-		1	A	For net change field (sign)
Net Change		6	N	Net change = last trade price - previous settlement price
Net Change Fraction Indicator		1	A	Fraction indicator for the net change Refer to Fraction Indicator Code
Filler		6	N	Filler
Timestamp		9	N	Time of transaction HHMMSSmmm
Open Interest		7	N	Outstanding number of contracts in the series as of previous day Refer to Indicator Code
Filler		2	X	Filler
Trade Number		8	X	Unique Trade Number for this instrument

At approximately 3:45 p.m. EST, closing settlement prices are determined and transmitted for all OGB (options on the 10-Year Canadian Government Bond Futures) and OBX (options on the 3-Month Canadian Bankers' Acceptance Futures). At this point most fields for each series will be blank/zero filled except for the Price field, which will contain the closing settlement price.

3.4.3 Message Type CF – Futures Trade (70 Bytes)

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
Message Header		11		Refer to Message Header
Exchange I. D.		1	A	Exchange on which the trade occurred Q = Montreal
Symbol	Root Symbol	6	A	Futures series symbol
	Delivery Month	1	A	Delivery month for the contract Refer to Month Codes
	Delivery Year	2	N	Two last digits of the delivery year of the future series
	Delivery Day	2	N	Delivery day of the future series
Volume		8	N	Total number of contracts traded Refer to Indicator Code
Trade Price		6	N	Price at which the transaction took place
Trade Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Net Change Sign +/-		1	X	For net change field (sign)
Net Change		6	N	Net change = last trade price - previous settlement price
Net Change Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Filler		6	N	Filler
Timestamp		9	N	Time of transaction HHMMSSmmm
Price Indicator Marker		1	X	Identifies the type of transaction Refer to Price Indicator Markers
Trade Number		8	X	Unique Trade Number for this instrument

At approximately 3:45 p.m. EST, closing settlement prices are determined and transmitted for all CGB (10-Year Canadian Government Bond Futures) and BAX (3-Month Canadian Bankers' Acceptance Futures) products. At this point, most fields for each series will be blank/zero filled except for the Price field, which will contain the closing settlement price.

3.4.4 Message Type CS – Strategy Trade (90 Bytes)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11		Refer to Message Header
Exchange I. D.	1	A	Exchange on which the trade occurred Q = Montreal
Symbol	30	X	Identifies the strategy The legs (underlying) are defined in message type NS Alphanumeric with ".","+","-"
Volume	8	N	Total number of contracts traded Refer to Indicator Code
Trade Price Sign +/-	1	X	For Trade Price field (sign)
Trade Price	6	N	Price at which the transaction took place
Trade Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Net Change Sign +/-	1	X	For net change field
Net Change	6	N	Net change = last trade price - previous close
Net Change Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Filler	6	N	Filler
Timestamp	9	N	Time of transaction HHMMSSmmm
Price Indicator Marker	1	X	Identifies type of transaction Refer to Price Indicator Markers
Trade Number	8	X	Unique Trade Number for this instrument

3.4.5 Message Type CW – Swap Future Trade (72 Bytes)

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
Message Header		11		Refer to Message Header
Exchange I. D.		1	A	Exchange on which the quote occurred Q = Montreal
Symbol	Root Symbol	6	X	Swap future base symbol
	Expiry Month	1	A	Expiry month code of the swap future Refer to Month Codes
	Expiry Year	2	N	Last two digits of the expiry year of the swap future
	Expiry Day	2	N	Expiry day of the swap future
	Tenor	2	N	The tenor of the swap future
	Fixed Rate	5	N	The swap fixed rate
	Fixed Rate Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Trade Volume		8	N	Total number of contracts traded Refer to Indicator Code
Trade Price		6	N	Price at which the transaction took place
Trade Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Net Change Sign +/-		1	X	For net change field
Net Change		6	N	Net change = last trade price - previous settlement price
Net Change Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Timestamp		9	N	Time of transaction HHMMSSmmm
Price Indicator Marker		1	X	Identifies type of transaction Refer to Price Indicator Markers
Trade Number		8	X	Unique Trade Number for this instrument

3.5 Request for Quote (RFQ) Messages

3.5.1 Message Type D – Option Request for Quote (RFQ) (41 Bytes)

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
Message Header		11		Refer to Message Header
Exchange I. D.		1	A	Exchange on which the quote occurred Q = Montreal
Symbol	Root Symbol	6	X	Option base symbol
	Expiry Month	1	A	Expiry month code of the option Refer to Month Codes
	Filler	1	A	Filler
	Strike Price	7	N	Strike price in full
	Strike Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
	Expiry Year	2	N	Last two digits of the option expiry year
	Expiry Day	2	N	Expiry day of the option
Requested Size		8	X	Size of the market requested Refer to Indicator Code
Requested Market Side		1	X	Requested quote side: B = Buy S = Sell 2 = Both

3.5.2 Message Type DB – Future Options Request for Quote (RFQ) (41 Bytes)

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
Message Header		11		Refer to Message Header
Exchange I. D.		1	A	Exchange on which the quote occurred Q = Montreal
Symbole	Root Symbol	6	A	Option symbol
	Contract Month Code	1	A	Option month code Refer to Month Codes
	Expiry Year	2	N	Last two digits of the option expiry year
	Expiry Day	2	N	Expiry day of the option
	Call/Put Code	1	A	C = Call P = Put
	Strike Price	7	N	Strike price in full
	Strike Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions. Refer to Fraction Indicator Code
Requested Size		8	X	Size of the market requested Refer to Indicator Code
Requested Market Side		1	X	Requested quote side: B = Buy S = Sell 2 = Both

3.5.3 Message Type DF – Futures Request for Quote (RFQ) (32 Bytes)

Field Name		L	T	Definition / Validation Rules
Message Header		11		Refer to Message Header
Exchange I.D.		1	A	Exchange on which the quote occurred Q = Montreal
Symbole	Root Symbol	6	A	Symbol for the Future series
	Delivery Month	1	A	Delivery month for the contract Refer to Month Codes
	Delivery Year	2	N	Last two digits of the delivery year of the contract
	Delivery Day	2	N	Delivery day of the contract
Requested Size		8	X	Size of the market requested Refer to Indicator Code
Requested Market Side		1	X	Requested quote side: B = Buy S = Sell 2 = Both

3.5.4 Message Type DS – Strategy Request for Quote (RFQ) (51 Bytes)

Field Name	L	T	Definition / Validation Rules
Message Header	11		Refer to Message Header
Exchange I.D.	1	A	Exchange on which the quote occurred Q = Montreal
Symbol	30	X	Symbol for the Future series Identifies the strategy The legs (underlying) are defined in message type NS Alphanumeric with ".","+","-"
Requested Size	8	X	Size of the market requested Refer to Indicator Code
Requested Market Side	1	X	Requested quote side: B = Buy S = Sell 2 = Both

3.5.5 Message Type DW – Swap Future Request for Quote (RFQ) (40 Bytes)

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
Message Header		11		Refer to Message Header
Exchange I.D.		1	A	Exchange on which the quote occurred Q = Montreal
Symbol	Root Symbol	6	X	Swap future base symbol
	Expiry Month	1	A	Expiry month code of the swap future Refer to Month Codes
	Expiry Year	2	N	Two last digits of the expiry year of the swap future
	Expiry Day	2	N	Expiry day of the swap future
	Tenor	2	N	The tenor of the swap future
	Fixed Rate	5	N	The swap fixed rate
	Fixed Rate Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Requested Size		8	X	Size of the market requested Refer to Indicator Code
Requested Market Side		1	X	Requested quote side: B = Buy S = Sell 2 = Both

3.6 Instrument Schedule Notice Messages

The E, EB, EF, ES, EW messages indicate the opening hour for their respective instrument.

3.6.1 Message E – Instrument Schedule Notice Option (39 Bytes)

<table>
<tr><th colspan="2">FIELD NAME</th><th>L</th><th>T</th><th>DEFINITION / VALIDATION RULES</th></tr>
<tr><td colspan="2">Message Header</td><td>11</td><td></td><td>Refer to Message Header</td></tr>
<tr><td colspan="2">Exchange I.D.</td><td>1</td><td>A</td><td>Exchange on which the quote occurred
Q = Montreal</td></tr>
<tr><td rowspan="7">Symbol</td><td>Root Symbol</td><td>6</td><td>X</td><td>Option base symbol (symbol of the underlying)</td></tr>
<tr><td>Expiry Month</td><td>1</td><td>A</td><td>Expiry month of the option.</td></tr>
<tr><td>Filler</td><td>1</td><td>A</td><td>Filler</td></tr>
<tr><td>Strike Price</td><td>7</td><td>X</td><td>Strike Price of the option in full. Refer to Price and Fraction Indicator Code</td></tr>
<tr><td>Strike Price Fraction Indicator</td><td>1</td><td>X</td><td>Defines number of decimal places or fraction positions. Refer to Indicator Code</td></tr>
<tr><td>Expiry Year</td><td>2</td><td>N</td><td>Last two digits of the expiry year</td></tr>
<tr><td>Expiry Day</td><td>2</td><td>N</td><td>Expiry day of the option</td></tr>
<tr><td colspan="2">Series Status</td><td>1</td><td>A</td><td>Series status of the trading instrument
Refer to Status Markers</td></tr>
<tr><td colspan="2">Scheduled Status Change Time</td><td>6</td><td>N</td><td>Time at which the status change is scheduled
HHMMSS</td></tr>
</table>

3.6.2 Message EB – Instrument Schedule Notice Futures Option (39 Bytes)

Field Name		L	T	Definition / Validation Rules
Message Header		11		Refer to Message Header
Exchange I.D.		1	A	Exchange on which the quote occurred Q = Montreal
Symbol	Root Symbol	6	A	Option symbol
	Contract Month Code	1	A	Option month code Refer to Month Codes
	Expiry Year	2	N	Last two digits of the option expiry year
	Expiry Day	2	N	Expiry day of the option
	Call/Put Code	1	S	C = Call P = Put
	Strike Price	7	N	Strike price in full
	Strike Price Fraction Indicator	1	X	Defines the number of decimal places or fraction positions Refer to Fraction Indicator Code
Series Status		1	A	Series status of the trading instrument Refer to Status Markers
Scheduled Status Change Time		6	N	Time at which the status change is scheduled HHMMSS

3.6.3 Message EF – Instrument Schedule Notice Future (30 Bytes)

Field Name		L	T	Definition / Validation Rules
Message Header		11		Refer to Message Header
Exchange I.D.		1	A	Exchange on which the quote occurred Q = Montreal
Symbol	Root Symbol	6	A	Symbol for the Future Series
	Delivery Month	1	A	Delivery month for the underlying futures contract Refer to Month Codes
	Delivery Year	2	N	Two last digits of the delivery year
	Delivery Day	2	N	Delivery day
Series Status		1	A	Series status of the trading instrument Refer to Status Markers
Scheduled Status Change Time		6	N	Time at which the status change is scheduled HHMMSS

3.6.4 Message ES – Instrument Schedule Notice Strategy (49 Bytes)

Field Name	L	T	Definition / Validation Rules
Message Header	11		Refer to Message Header
Exchange I.D.	1	A	Exchange on which the quote occurred Q = Montreal
Strategy Symbol	30	X	Identification of the strategy The legs (underlying) are defined in message type NS
Series Status	1	A	Series status of the trading instrument Refer to Status Markers
Scheduled Status Change Time	6	N	Time at which the status change is scheduled HHMMSS

3.6.5 Message EW – Instrument Schedule Notice Swap Future (38 Bytes)

Field Name		L	T	Definition / Validation Rules
Message Header		11		Refer to Message Header
Exchange I.D.		1	A	Exchange on which the quote occurred Q = Montreal
Symbol	Root Symbol	6	A	Swap future base symbol
	Expiry Month	1	A	Expiry month code of the swap future Refer to Month Codes
	Expiry Year	2	N	Two last digits of the expiry year of the swap future
	Expiry Day	2	N	Expiry day of the swap future
	Tenor	2	N	The Tenor of the swap future
	Fixed Rate	5	N	The swap fixed rate
	Fixed Rate Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Series Status		1	A	Series status of the trading instrument Refer to Status Markers
Scheduled Status Change Time		6	N	Time at which the status change is scheduled HHMMSS

3.7 Quote Messages

3.7.1 Message Type F – Option Quote (58 Bytes)

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
Message Header		11		Refer to Message Header
Exchange I. D.		1	A	Exchange on which the quote occurred Q = Montreal
Symbol	Root Symbol	6	X	Option base symbol
	Expiry Month	1	A	Expiry month code of the option Refer to Month Codes
	Filler	1	A	Filler
	Strike Price	7	N	Strike price in full
	Strike Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
	Expiry Year	2	N	Last two digits of the option expiry year
	Expiry Day	2	N	Expiry day of the option
Bid Price		6	X	Bid price for the option series
Bid Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Bid Size		5	X	Number of option contracts represented by the Bid Price If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code
Ask Price		6	X	Ask price for the option series
Ask Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Ask Size		5	X	Number of option contracts represented by the Ask Price If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code
Filler		1	X	Filler

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
Instrument Status Marker		1	A	Indicates instrument status Refer to Status Markers

3.7.2 Message Type FB – Future Options Quote (58 Bytes)

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
Message Header		11		Refer to Message Header
Exchange I. D.		1	A	Exchange on which the quote occurred Q = Montreal
Symbol	Root Symbol	6	A	Option symbol
	Contract Month Code	1	A	Option month code Refer to Month Codes
	Expiry Year	2	N	Last two digits of the option expiry year
	Expiry Day	2	N	Expiry day
	Call/Put Code	1	A	C = Call P = Put
	Strike Price	7	N	Strike price in full
	Strike Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Bid Price		6	X	Bid price for the series
Bid Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Bid Size		5	X	Total number of contracts being bid at this price If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code
Ask Price		6	X	Ask price for the series
Ask Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Ask Size	5	X	Total number of contracts being offered at this price If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code
Instrument Status Marker	1	A	Indicates instrument status Refer to Status Markers
Filler	1	X	Filler

3.7.3 Message Type FF – Futures Quote (48 Bytes)

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
Message Header		11		Refer to Message Header
Exchange I.D.		1	A	Exchange on which the quote occurred Q = Montreal
Symbol	Root Symbol	6	A	Symbol for the Future series
	Delivery Month	1	A	Delivery month for the contract Refer to Month Codes
	Delivery Year	2	N	Two last digits of the delivery year of the contract
	Delivery Day	2	N	Delivery day of the contract
Bid Price		6	X	Bid price for the future contract
Bid Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Bid Size		5	X	Number of futures contracts represented by the Bid Price If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code
Ask Price		6	X	Ask Price for the future contract
Ask Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Ask Size	5	X	The number of futures contracts represented by the Ask Price If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code
Instrument Status Marker	1	A	Indicates instrument status Refer to Status Markers

3.7.4 Message Type FS – Strategy Quote (69 Bytes)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11		Refer to Message Header
Exchange I.D.	1	A	Exchange on which the quote occurred Q = Montreal
Symbol	30	X	Identification of the strategy The legs (underlying) are defined in message type NS Alphanumeric with ".","+","-"
Bid Price Sign +/-	1	X	For Bid Price field
Bid Price	6	X	Bid Price for the future contract
Bid Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Bid Size	5	X	Number of futures contracts represented by the Bid Price If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code
Ask Price sign +/-	1	X	For Ask Price field
Ask Price	6	X	Ask price for the future contract
Ask Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions. Refer to Fraction Indicator Code
Ask Size	5	X	The number of futures contracts represented by the Ask Price If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Instrument Status Marker	1	X	Indicates instrument status Refer to Status Markers

3.7.5 Message Type FW – Swap Future Quote (56 Bytes)

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
Message Header		11		Refer to Message Header
Exchange I.D.		1	A	Exchange on which the quote occurred Q = Montreal
Symbol	Root Symbol	6	X	Swap future base symbol
	Expiry Month	1	A	Expiry month code of the swap future Refer to Month Codes
	Expiry Year	2	N	Two last digits of the expiry year of the swap future
	Expiry Day	2	N	Expiry day of the swap future
	Tenor	2	N	The tenor of the swap future
	Fixed Rate	5	N	The swap fixed rate
	Fixed Rate Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Bid Price		6	X	Bid price for the future contract
Bid Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Bid Size		5	X	Number of futures contracts represented by the Bid Price If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code
Ask Price		6	X	Ask price for the future contract
Ask Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions. Refer to Fraction Indicator Code

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Ask Size	5	X	The number of futures contracts represented by the Ask Price If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code
Instrument Status Marker	1	X	Indicates instrument status Refer to Status Markers

3.8 Market Depth Messages

3.8.1 Message Type H – Option Market Depth (Min 63 Bytes / Max 179 Bytes)

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
Message Header		11		Refer to Message Header
Exchange I.D.		1	A	Exchange on which the quote occurred Q = Montreal
Symbol	Root Symbol	6	X	Option base symbol
	Expiry Month	1	A	Expiry month code of the option Refer to Month Codes
	Filler	1	A	Filler
	Strike Price	7	N	Strike price in full
	Strike Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
	Expiry Year	2	N	Last two digits of the option expiry year
	Expiry Day	2	N	Expiry day of the option
Instrument Status Marker		1	A	Instrument status Refer to Status Markers
Number of Level		1	N	Number of level for the trading instrument 1 to 5

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
Up to 5 times	Level of Market Depth	1	X	Level of market depth 1 to 5 and A (Implied)
	Bid Price	6	X	Bid price for the option series For Implied, it represents the best (1st limit) indicative implied bid price
	Bid Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
	Bid Size	5	X	Number of option contracts represented by the Bid Price For Implied, it represents the indicative quantity at the best (1st limit) implied bid price If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code
	Number of Bid Orders	2	X	Number of bid orders, present at a given moment, in the order book For Implied, it represents the indicative number of implied bid orders making up the implied bid size at that implied bid price If greater than 99-> the 2nd character becomes an exponent. Refer to Indicator Code
	Ask Price	6	X	Ask price for the option series For Implied, it represents the best (1st limit) indicative implied ask price
	Ask Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
	Ask Size	5	X	Number of option contracts represented by the Ask Price For Implied, it represents the indicative quantity at the best (1st limit) implied ask price If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code

	Number of Ask Orders	2	X	Number of Ask Orders, present at a given moment, in the order book For Implied, it represents the indicative number of implied ask orders making up the implied ask size at that implied ask price If greater than 99-> the 2nd character becomes an exponent Refer to Indicator Code

3.8.2 Message Type HB – Future Options Market Depth (Min 63 Bytes / Max 179 Bytes)

Field Name		L	T	Definition / Validation Rules
Message Header		11		Refer to Message Header
Exchange I.D.		1	A	Exchange on which the quote occurred Q = Montreal
Symbol	Root Symbol	6	A	Symbol for the Future series
	Contract Month Code	1	A	Option month code Refer to Month Codes
	Expiry Year	2	N	Last two digits of the option expiry year
	Expiry Day	2	N	Option expiry day
	Call/Put Code	1	A	C = Call P = Put
	Strike Price	7	N	Strike price in full
	Strike Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Instrument Status Marker		1	A	Instrument status Refer to Status Markers
Number of Level		1	N	Number of level for the trading instrument 1 to 5
Up to 5 times	Level of Market Depth	1	X	Level of market depth 1 to 5 and A (Implied)
	Bid Price	6	X	Bid Price for the series. For Implied, it represents the best (1st limit) indicative implied bid price

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
	Bid Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
	Bid Size	5	X	Total number of contracts being bid at this price For Implied, it represents the indicative quantity at the best (1st limit) implied bid price If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code
	Number of Bid Orders	2	X	Number of bid orders, present at a given moment, in the order book For Implied, it represents the indicative number of implied bid orders making up the implied bid size at that implied bid price If greater than 99-> the 2nd character becomes an exponent Refer to Indicator Code
	Ask Price	6	X	Ask price for the series For Implied, it represents the best (1st limit) indicative implied ask price
	Ask Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
	Ask Size	5	X	Total number of contracts being offered at this price For Implied, it represents the indicative quantity at the best (1st limit) implied ask price If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code
	Number of Ask Orders	2	X	Number of Ask Orders, present at a given moment, in the order book For Implied, it represents the indicative number of implied ask orders making up the implied ask size at that implied ask price If greater than 99-> the 2nd character becomes an exponent Refer to Indicator Code

3.8.3 Message Type HF – Futures Market Depth (Min 54 Bytes / Max 170 Bytes)

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
Message Header		11		Refer to Message Header
Exchange I.D.		1	A	Exchange on which the quote occurred Q = Montreal
Symbol	Root Symbol	6	A	Symbol for the Future series
	Delivery Month	1	A	Delivery month for the contract Refer to Month Codes
	Delivery Year	2	N	Last digit of the delivery year of the contract
	Delivery Day	2	N	Delivery day of the contract
Instrument Status Marker		1	A	Instrument status Refer to Status Markers
Number of Level		1	N	Number of level for the trading instrument 1 – 5
Up to 5 times	Level of Market Depth	1	X	Level of market depth 1 – 5 and A (Implied)
	Bid Price	6	X	Bid price for the future contract For Implied, it represents the best (1st limit) indicative implied bid price
	Bid Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions. Refer to Fraction Indicator Code
	Bid Size	5	X	Number of futures contracts represented by the Bid Price For Implied, it represents he indicative quantity at the best (1st limit) implied bid price If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code

Field Name		L	T	Definition / Validation Rules
	Number of Bid Orders	2	X	Number of Bid Orders, present at a given moment, in the order book For Implied, it represents the indicative number of implied bid orders making up the implied bid size at that implied bid price If greater than 99-> the 2nd character becomes an exponent
	Ask Price	6	N	Ask Price for the future contract For Implied, it represents the best (1st limit) indicative implied ask price
	Ask Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
	Ask Size	5	X	The number of futures contracts represented by the Ask Price For Implied, it represents the indicative quantity at the best (1st limit) implied ask price If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code
	Number of Ask Orders	2	X	Number of Ask Orders, present at a given moment in the order book For Implied, it represents the indicative number of implied ask orders making up the implied ask size at that implied ask price If greater than 99-> the 2nd character becomes an exponent Refer to Indicator Code

3.8.4 Message Type HS – Strategy Market Depth (Min 75 Bytes / Max 199 Bytes)

<table>
<tr><th colspan="2">FIELD NAME</th><th>L</th><th>T</th><th>DEFINITION / VALIDATION RULES</th></tr>
<tr><td colspan="2">Message Header</td><td>11</td><td></td><td>Refer to Message Header</td></tr>
<tr><td colspan="2">Exchange I.D.</td><td>1</td><td>A</td><td>Exchange on which the quote occurred
Q = Montreal</td></tr>
<tr><td colspan="2">Symbol</td><td>30</td><td>X</td><td>Identification of the strategy
The legs (underlying) are defined in message type NS
Alphanumeric with ".","+","-"</td></tr>
<tr><td colspan="2">Instrument Status Marker</td><td>1</td><td>A</td><td>Instrument status
Refer to Status Markers</td></tr>
<tr><td colspan="2">Number of Level</td><td>1</td><td>N</td><td>Number of level for the trading instrument
1 – 5</td></tr>
<tr><td rowspan="6">Up to 5 times</td><td>Level of Market Depth</td><td>1</td><td>X</td><td>Level of market depth
1 – 5 and A (Implied)</td></tr>
<tr><td>Bid Price Sign +/-</td><td>1</td><td>X</td><td>For the Bid Price field</td></tr>
<tr><td>Bid Price</td><td>6</td><td>X</td><td>Bid price for the strategy instrument
For Implied, it represents the best (1st limit) indicative implied bid price</td></tr>
<tr><td>Bid Price Fraction Indicator</td><td>1</td><td>X</td><td>Defines number of decimal places or fraction positions
Refer to Fraction Indicator Code</td></tr>
<tr><td>Bid Size</td><td>5</td><td>X</td><td>Number of strategy units represented by the Bid Price
For Implied, it represents the indicative quantity at the best (1st limit) implied bid price
If size is greater than 99999, the 5th character becomes an exponent
Refer to Indicator Code</td></tr>
<tr><td>Number of Bid Orders</td><td>2</td><td>X</td><td>Number of Bid Orders, present at a given moment, in the order book
For Implied, it represents the indicative number of implied bid orders making up the implied bid size at that implied bid price
If greater than 99-> the 2nd character becomes an exponent
Refer to Indicator Code</td></tr>
</table>

Field Name		L	T	Definition / Validation Rules
	Ask Price Sign +/-	1	X	For the Ask Price field
	Ask Price	6	X	Ask price for the strategy instrument For Implied, it represents the best (1st limit) indicative implied ask price
	Ask Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
	Ask Size	5	X	The number of strategy units represented by the Ask Price For Implied, it represents the indicative quantity at the best (1st limit) implied ask price If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code
	Number of Ask Orders	2	X	Number of Ask Orders, present at a given moment, in the order book For Implied, it represents the indicative number of implied ask orders making up the implied ask size at that implied ask price If greater than 99-> the 2nd character becomes an exponent Refer to Indicator Code

3.8.5 Message Type HW – Swap Future Market Depth (Min 62 Bytes / Max 178 Bytes)

Field Name		L	T	Definition / Validation Rules
Message Header		11		Refer to Message Header
Exchange I.D.		1	A	Exchange on which the quote occurred Q = Montreal
Symbol	Root Symbol	6	X	Swap future base symbol
	Expiry Month	1	A	Expiry month code of the swap future Refer to Month Codes
	Expiry Year	2	N	Two last digits of the expiry year of the swap future
	Expiry Day	2	N	Expiry day of the swap future
	Tenor	2	N	The tenor of the swap future
	Fixed Rate	5	N	The swap fixed rate
	Fixed Rate Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Instrument Status Marker		1	A	Marker status Refer to Status Markers
Number of Level		1	N	Number of level for the trading instrument 1 - 5
Up to 5 times	Level	1	X	Level of market depth 1 - 5 and A (Implied)
	Bid Price	6	X	Bid price for the swap future For Implied, it represents the best (1st limit) indicative implied bid price
	Bid Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
	Bid Size	5	X	Number of swap futures represented by the Bid Price For Implied, it represents the indicative quantity at the best (1st limit) implied bid price If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code

Field Name		L	T	Definition / Validation Rules
	Number of Bid Orders	2	X	Number of Bid Orders, present at a given moment, in the order book For Implied, it represents the indicative number of implied bid orders making up the implied bid size at that implied bid price If greater than 99-> the 2nd character becomes an exponent Refer to Indicator Code
	Ask Price	6	X	Ask price for the swap future For Implied, it represents the best (1st limit) indicative implied ask price
	Ask Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
	Ask Size	5	X	The number of swap futures represented by the Ask Price For Implied, it represents the indicative quantity at the best (1st limit) implied ask price If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code
	Number of Ask Orders	2	X	Number of Ask Orders, present at a given moment, in the order book For Implied, it represents the indicative number of implied ask orders making up the implied ask size at that implied ask price If greater than 99-> the 2nd character becomes an exponent Refer to Indicator Code

3.9 Trade Cancellation Messages

3.9.1 Message Type I – Option Trade Cancellation (79 Bytes)

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
Message Header		11		Refer to Message Header
Exchange I.D.		1	A	Exchange on which the trade occurred Q = Montreal
Symbol	Root Symbol	6	X	Option base symbol
	Expiry Month	1	A	Expiry month code of the option Refer to Month Codes
	Filler	1	A	Filler
	Strike Price	7	N	This field contains the strike price in full
	Strike Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
	Expiry Year	2	N	Last two digits of the option expiry year
	Expiry Day	2	N	Expiry day of the option
Volume		8	N	Number of contracts being cancelled Refer to Indicator Code
Trade Price		6	N	Price at which the transaction took place
Trade Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Filler		6	N	Filler
Timestamp		9	N	Time of cancellation transaction HHMMSSmmm
Open Interest		7	N	Open long position of the option series, as of the trade Refer to Indicator Code
Filler		1	X	Filler
Price Indicator Marker		1	A	Identifies the type of transaction Refer to Price Indicator Markers
Trade Number		8	X	Unique trade Number for this instrument

A cancellation will reduce the total volume, value and transactions by the amount of the cancelled trade. A cancellation message is followed by an Option Summary message (message type N) which will reflect the corrected market.

3.9.2 Message Type IB – Future Options Trade Cancellation (80 Bytes)

<table>
<tr><th colspan="2">FIELD NAME</th><th>L</th><th>T</th><th>DEFINITION / VALIDATION RULES</th></tr>
<tr><td colspan="2">Message Header</td><td>11</td><td></td><td>Refer to Message Header</td></tr>
<tr><td colspan="2">Exchange I.D.</td><td>1</td><td>A</td><td>Exchange on which the trade occurred
Q = Montreal</td></tr>
<tr><td rowspan="7">Symbol</td><td>Root Symbol</td><td>6</td><td>A</td><td>Option symbol</td></tr>
<tr><td>Contract Month Code</td><td>1</td><td>A</td><td>Option month code
Refer to Month Codes</td></tr>
<tr><td>Expiry Year</td><td>2</td><td>N</td><td>Last two digits of the option expiry year</td></tr>
<tr><td>Expiry Day</td><td>2</td><td>N</td><td>Option expiry day</td></tr>
<tr><td>Call/Put Code</td><td>1</td><td>A</td><td>C = Call
P = Put</td></tr>
<tr><td>Strike Price</td><td>7</td><td>N</td><td>Strike price in full</td></tr>
<tr><td>Strike Price Fraction Indicator</td><td>1</td><td>X</td><td>Defines number of decimal places or fraction positions
Refer to Fraction Indicator Code</td></tr>
<tr><td colspan="2">Volume</td><td>8</td><td>N</td><td>Total number of contracts traded
Refer to Indicator Code</td></tr>
<tr><td colspan="2">Price</td><td>6</td><td>N</td><td>Price at which the transaction took place</td></tr>
<tr><td colspan="2">Price Fraction Indicator</td><td>1</td><td>X</td><td>Defines number of decimal places or fraction positions
Refer to Fraction Indicator Code</td></tr>
<tr><td colspan="2">Price Indicator Marker</td><td>1</td><td>A</td><td>Identifies the type of transaction
Refer to Price Indicator Markers</td></tr>
<tr><td colspan="2">Filler</td><td>6</td><td>X</td><td>Filler</td></tr>
<tr><td colspan="2">Timestamp</td><td>9</td><td>N</td><td>Time of cancellation transaction
HHMMSSmmm</td></tr>
<tr><td colspan="2">Open Interest</td><td>7</td><td>N</td><td>Outstanding number of contracts in the series as of the previous day
Refer to Indicator Code</td></tr>
</table>

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Filler	2	X	Filler
Trade Number	8	X	Unique trade Number for this instrument

A cancellation will reduce the total volume, value and transactions by the amount of the cancelled trade. A cancellation message is followed by a Future Options Summary message (message type NB) which will reflect the corrected market.

3.9.3 Message Type IF – Futures Trade Cancellation (62 Bytes)

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
Message Header		11		Refer to Message Header
Exchange I.D.		1	A	Exchange on which the trade occurred Q = Montreal
Symbol	Root Symbol	6	A	Futures series symbol
	Delivery Month	1	A	Delivery month for the contract Refer to Month Codes
	Delivery Year	2	N	Two last digits of the delivery year of the contract
	Delivery Day	2	N	Delivery day of the contract
Volume		8	N	Number of contracts being cancelled Refer to Indicator Code
Trade Price		6	N	Estimated price at which the transaction took place
Trade Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Filler		6	N	Filler
Timestamp		9	N	Time of cancellation transaction HHMMSSmmm
Price Indicator Marker		1	X	Identifies the type of transaction Refer to Price Indicator Markers
Trade Number		8	X	Unique trade Number for this instrument

A cancellation will reduce the total volume, value and transactions by the amount of the cancelled trade. A cancellation message is followed by a Future Summary message (message type NF) which will reflect the corrected market.

3.9.4 Message Type IS – Strategy Trade Cancellation (82 Bytes)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11		Refer to Message Header
Exchange I.D.	1	A	Exchange on which the trade occurred Q = Montreal
Symbol	30	X	Identification of the strategy The legs (underlying) are defined in message type NS Alphanumeric with ".","+","-"
Volume	8	N	Number of contracts being cancelled Refer to Indicator Code
Trade Price sign +/-	1	X	For the Trade Price field
Trade Price	6	N	Estimated price at which the transaction took place
Trade Price Fraction Indicator	1	X	Defines the number of decimal places or fraction positions Refer to Fraction Indicator Code
Filler	6	N	Filler
Timestamp	9	N	Time of cancellation transaction HHMMSSmmm
Filler	1	X	Filler
Trade Number	8	X	Unique trade Number for this instrument

A cancellation will reduce the total volume, value and transactions by the amount of the cancelled trade. A cancellation message is followed by a Strategy Summary message (message type NS) which will reflect the corrected market.

3.9.5 Message Type IW – Swap Future Trade Cancellation (64 Bytes)

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
Message Header		11		Refer to Message Header
Exchange I.D.		1	A	Exchange on which the trade occurred Q = Montreal
Symbol	Root Symbol	6	X	Swap future base symbol
	Expiry Month	1	A	Expiry month code of the swap future Refer to Month Codes
	Expiry Year	2	N	Two last digits of the expiry year of the swap future
	Expiry Day	2	N	Expiry day of the swap future
	Tenor	2	N	The tenor of the swap future
	Fixed Rate	5	N	The swap fixed rate
	Fixed Rate Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Volume		8	N	Number of contracts being cancelled Refer to Indicator Code
Trade Price		6	N	Estimated price at which the transaction took place
Trade Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Timestamp		9	N	Time of cancellation transaction HHMMSSmmm
Market Price Indicator		1	X	Identifies the type of transaction Refer to Price Indicator Markers
Trade Number		8	X	Unique trade Number for this instrument

A cancellation will reduce the total volume, value and transactions by the amount of the cancelled trade. A cancellation message is followed by a Swap Future Summary message (message type NW), which will reflect the corrected market.

3.10 Instrument Keys Messages

3.10.1 Message Type J – Option Instrument Keys (138 Bytes)

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
Message Header		11		Refer to Message Header
Exchange I.D.		1	A	Exchange on which the trade occurred Q = Montreal
Symbol	Root Symbol	6	X	Option base symbol (symbol of the underlying)
	Expiry Month	1	A	Expiry month code of the option Refer to Month Codes
	Filler	1	A	Filler
	Strike Price	7	N	Strike price of the option in full Refer to Tick Table
	Strike Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
	Expiry Year	2	N	Last two digits of the option expiry year
	Expiry Day	2	N	Expiry day of the option
Strike Price Currency		3	A	Currency used for the Option Strike Price Refer to Currency Codes
Maximum Number of Contracts per Order		6	X	Maximum authorized number of contract per order Refer to Indicator Code
Minimum Number of Contracts per Order		6	X	Minimum authorized number of contract per order Refer to Indicator Code
Maximum Threshold Price		6	X	Maximum threshold price authorized for an option contract Refer to Indicator Code
Maximum Threshold Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Minimum Threshold Price		6	X	Minimum threshold price authorized for an option contract Refer to Indicator Code

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Minimum Threshold Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Tick Increment	6	X	Contains the Tick Table Short Name if available. If so, field starts with TT=. Otherwise, indicates precision with which the price of an order limit can be expressed Refer to Tick Table
Tick Increment Fraction Indicator	1	X	If Tick Increment starts with TT= (Table Name available), Fraction Indicator is blank. Otherwise, defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Option type	1	N	Type of option A = American E = European
Market Flow Indicator	2	X	Defines the type of instruments Refer to Market Feed Indicators
Group Instrument	2	X	Group of the instrument
Instrument	4	X	Instrument
Instrument External Code	30	X	External identifier used by traders when entering an order
Option Marker	2	A	Refer to Options Markers
Underlying Symbol Root	10	X	Symbol root for the underlying security
Contract Size	8	N	Defines the quantity of an underlying per contract
Tick Value	6	N	Exchange premium multiplier for derivatives with a contract size equal to 1. All derivatives with a contract size > 1 will have a tick value defaulted to 1.
Tick Value Fraction Indicator	1	X	Defines number of decimal places or fraction positions
Currency	3	A	Defines the currency of an underlying Refer to Currency Codes
Delivery Type	1	X	Indicates the delivery type of the instrument C = Cash, P = Physical

3.10.2 Message Type JB – Future Options Instrument Keys (125 Bytes)

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
Message Header		11		Refer to Message Header
Exchange I.D.		1	A	Exchange on which the trade occurred Q = Montreal
Symbol	Root Symbol	6	A	Option symbol
	Contract Month Code	1	A	Option month code Refer to Month Codes
	Expiry Year	2	N	Last two digits of the option expiry year
	Expiry Day	2	N	Expiry day of the option
	Call / Put Code	1	A	C = Call P = Put
	Strike Price	7	N	Strike price in full
	Strike Price Fraction Indicator	1	X	Fraction indicator for the strike price Refer to Fraction Indicator Code
Strike Price Currency		3	A	Currency used for the option strike price Refer to Currency Codes
Maximum Number of Contracts per Order		6	X	Maximum authorized number of contract per order Refer to Indicator Code
Minimum Number of Contracts per Order		6	X	Minimum authorized number of contract per order Refer to Indicator Code
Maximum Threshold Price		6	X	Maximum threshold price authorized for an option contract Refer to Indicator Code
Maximum Threshold Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Minimum Threshold Price		6	X	Minimum threshold price authorized for an option contract Refer to Indicator Code
Minimum Threshold Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Tick Increment	6	X	Contains the Tick Table Short Name if available. If so, field starts with TT=. Otherwise, precision with which the price of an order limit can be expressed Refer to Tick Table
Tick Increment Fraction Indicator	1	X	If Tick Increment starts with TT= (Table Name available), Fraction Indicator is blank. Otherwise, defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Market Flow Indicator	2	X	Defines the type of instruments Refer to Market Feed Indicators
Group Instrument	2	X	Group of the instrument
Instrument	4	X	Instrument
Instrument External Code	30	X	External identifier used by traders when entering an order
Contract Size	8	N	Defines the quantity of an underlying per contract
Tick Value	6	N	Exchange premium multiplier for derivatives with a contract size equal to 1. All derivatives with a contract size > 1 will have a tick value defaulted to 1.
Tick Value Fraction Indicator	1	X	Defines number of decimal places or fraction positions
Currency	3	A	Defines the currency of an underlying Refer to Currency Codes
Delivery Type	1	X	Indicates the delivery type of the instrument C = Cash P = Physical

3.10.3 Message Type JE – Underlying Instrument Keys (48 Bytes)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11		Refer to Message Header
Exchange I.D.	1	A	Exchange on which the trade occurred. Q = Montreal
Group Instrument	2	X	Group of the instrument
Instrument	4	X	Instrument
Instrument External Code	30	X	External identifier used by traders when entering an order

Note:

- The 'Underlying Instrument Keys' message will be the first messages sent during the day
- There is no 'Underlying Summary' message attached to the 'Instrument keys' messages

3.10.4 Message Type JF – Futures Instrument Keys (134 Bytes)

<table>
<tr><th colspan="2">FIELD NAME</th><th>L</th><th>T</th><th>DEFINITION / VALIDATION RULES</th></tr>
<tr><td colspan="2">Message Header</td><td>11</td><td></td><td>Refer to Message Header</td></tr>
<tr><td colspan="2">Exchange I.D.</td><td>1</td><td>A</td><td>Exchange on which the trade occurred
Q = Montreal</td></tr>
<tr><td rowspan="4">Symbol</td><td>Root Symbol</td><td>6</td><td>A</td><td>Futures series symbol</td></tr>
<tr><td>Delivery Month</td><td>1</td><td>A</td><td>Delivery month for the contract
Refer to Month Codes</td></tr>
<tr><td>Delivery Year</td><td>2</td><td>N</td><td>Last two digits of the delivery year of the future series</td></tr>
<tr><td>Expiry Day [3]</td><td>2</td><td>N</td><td>Expiry day of the contract</td></tr>
<tr><td colspan="2">Maximum Number of Contracts per Order</td><td>6</td><td>X</td><td>Maximum authorized number of contract per order
Refer to Indicator Code</td></tr>
<tr><td colspan="2">Minimum Number of Contracts per Order</td><td>6</td><td>X</td><td>Minimum authorized number of contract per order
Refer to Indicator Code</td></tr>
</table>

[3] The Expiry Day for the S&P/TSX futures contracts (SXA/SXB/SXH/SXF & SXY) is set up as the third Friday of the month in our system. But the real last trading day for these instruments is the day before the 3rd Friday of the month (the 3rd Thursday).

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Maximum Threshold Price	6	N	Maximum threshold price authorized for an option contract Refer to Indicator Code
Maximum Threshold Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Minimum Threshold Price	6	N	Minimum threshold price authorized for an option contract Refer to Indicator Code
Minimum Threshold Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Tick Increment	6	X	Contains the Tick Table Short Name if available. If so, field starts with TT=. Othewise, precision with which the price of an order limit can be expressed Refer to Tick Table
Tick Increment Fraction Indicator	1	X	If Tick Increment starts with TT= (Table Short Name available), Fraction Indicator is blank. Otherwise, defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Market Flow Indicator	2	X	Defines the type of instruments Refer to Market Feed Indicators
Group Instrument	2	X	Group of the instrument
Instrument	4	X	Instrument
Instrument External Code	30	X	External identifier used by traders when entering an order
Contract Size	8	N	Defines the quantity of an underlying per contract
Tick Value	6	N	Exchange premium multiplier for derivatives with a contract size equal to 1. All derivatives with a contract size > 1 will have a tick value defaulted to 1.
Tick Value Fraction Indicator	1	X	Defines number of decimal places or fraction positions
Currency	3	A	Defines the currency of an underlying Refer to Currency Codes

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
Underlying Symbol		10	A	Symbol root for the underlying security
Delivery Type		1	X	Indicates the delivery type of the instrument. C = Cash P = Physical
Associated Product	Root Symbol	6	A	Associated product's class symbol
	Delivery Month	1	A	Delivery month
	Delivery Year	2	N	Last two digits of the delivery year
	Expiry Day	2	N	Expiry day

3.10.5 Message Type JS – Strategy Instrument Keys (119 Bytes)

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
Message Header		11		Refer to Message Header
Exchange I. D.		1	A	Exchange on which the trade occurred Q = Montreal
Symbol	Strategy Symbol	30	X	Identification of the strategy The legs (underlying) are defined in message type NS Alphanumeric with ".","+","-"
Expiry Year		2	N	Last two digits of the option expiry year
Delivery Month		1	A	Delivery month for the contract Refer to Month Codes
Expiry Day		2	N	Expiry day of the option
Maximum Number of Contracts per Order		6	X	Maximum authorized number of contract per order Refer to Indicator Code
Minimum Number of Contracts per Order		6	X	Minimum authorized number of contract per order Refer to Indicator Code

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Maximum Threshold Price	6	X	Maximum threshold price authorized for an option contract Refer to Indicator Code
Maximum Threshold Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Fraction Indicator Code
Minimum Threshold Price	6	X	Minimum threshold price authorized for an option contract Refer to Indicator Code
Minimum Threshold Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Tick Increment	6	X	Contains the Tick Table Short Name if available. If so, field starts with TT=. Otherwise, precision with which the price of an order limit can be expressed Refer to Tick Table
Tick increment Fraction Indicator	1	X	If Tick Increment starts with TT= (Table Short Name available), Fraction Indicator is blank. Otherwise, defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Market Flow Indicator	2	X	Defines the type of instruments Refer to Market Feed Indicators
Group Instrument	2	X	Group of the instrument
Instrument	4	X	Instrument
Instrument External Code	30	X	External identifier used by traders when entering an order
Strategy Allow Implied	1	A	Indicates if the Strategy supports Implied Pricing Y = Yes N = No

3.10.6 Message Type JW – Swap Future Instrument Keys (183 Bytes)

Field Name		L	T	Definition / Validation Rules
Message Header		11		Refer to Message Header
Exchange I. D.		1	A	Exchange on which the trade occurred Q = Montreal
Symbol	Root Symbol	6	A	Swap future base symbol
	Expiry Month	1	A	Expiry month code of the swap future Refer to Month Codes
	Expiry Year	2	N	Two last digits of the expiry year of the swap future
	Expiry Day	2	N	Expiry day of the swap future
	Tenor	2	N	The Tenor of the swap future
	Fixed Rate	5	N	The swap fixed rate
	Fixed Rate Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Maximum Number of Contracts per Order		6	X	Maximum authorized number of contract per order Refer to Indicator Code
Minimum Number of Contracts per Order		6	X	Minimum authorized number of contract per order Refer to Indicator Code
Maximum Threshold Price		6	X	Maximum threshold price authorized for an option contract Refer to Indicator Code
Maximum Threshold Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Minimum Threshold Price		6	X	Minimum threshold price authorized for an option contract Refer to Indicator Code
Minimum Threshold Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Tick Increment	6	X	Contains the Tick Table Short Name if available. If so, field starts with TT=. Otherwise, precision with which the price of an order limit can be expressed Refer to Tick Table
Tick Increment Fraction Indicator	1	X	If Tick Increment starts with TT= (Table Short Name available), Fraction Indicator is blank. Otherwise, defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Market Flow	2	X	Defines the type of instruments Refer to Market Feed Indicators
Group Instrument	2	X	Group of the instrument
Instrument I.D.	4	X	Instrument
External Symbol	30	X	External identifier used by traders when entering an order
Contract Size	8	N	Defines the quantity of an underlying per contract
Tick Value	6	N	Exchange premium multiplier for derivatives with a contract size equal to 1. All derivatives with a contract size > 1 will have a tick value defaulted to 1.
Tick Value Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Currency	3	A	Defines the currency of an underlying Refer to Currency Codes
Effective Date	6	A	The date when the swap contract becomes effective (YYMMDD)
Initial Effective Date	6	A	The third Wednesday of the effective months (March, June, September, and December) (Quarterly IMM Dates (International Monetary Market Dates)). This date will be different from the Effective Date if it falls on a non-business date (YYMMDD)
Cash Flow Alignment Date	6	A	The date used to set up the Payment and Reset Dates of the contract (YYMMDD)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Payment Frequency	2	X	Frequency on which Payment Dates are defined Refer to Frequency Codes
Reset Frequency	2	X	Frequency on which Reset Dates are defined Refer to Frequency Codes
Notional Principal Amount	8	N	Value of the contract
Notional Principal Amount Faction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Day Count Convention	1	A	Convention used in the swap future contract settlement price calculations: Act/365 ('A') Act/360 ('B') 30/360 ('C')
First Payment Date	6	A	The date when the first payment is made (YYMMDD)
Next Payment Date	6	A	The date when the next payment will be made (YYMMDD)
First Reset Date	6	A	The date when the floating rate is set for the first time (YYMMDD)
Next Reset Date	6	A	The date when the next floating rate will be set (YYMMDD)
Previous Reset Date	6	A	The date when the previous floating rate was set. When the current date is a Reset Date, the previous Reset Date will be the current date (YYMMDD)
Delivery Type	1	X	Indicates the delivery type of the instrument C = Cash P = Physical

3.11 Summary Messages

3.11.1 Message Type N – Option Summary (135 Bytes)

Field Name		L	T	Definition / Validation Rules
Message Header		11		Refer to Message Header
Exchange I.D.		1	A	Identifies the exchange for the option Q = Montreal
Symbol	Root Symbol	6	X	Option base symbol
	Expiry Month	1	A	Expiry month code of the option Refer to Month Codes
	Filler	1	A	Filler
	Strike Price	7	N	Strike price in full
	Strike Price Fraction Indicator	1	X	Defines fraction indicator for the strike price Refer to Fraction Indicator Code
	Expiry Year	2	N	Last two digits of the option expiry year
	Expiry Day	2	N	Expiry day of the option
Bid Price		6	N	Closing or most recent bid price
Bid Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Bid Size		5	X	Number of contracts represented by the Bid Price. If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code
Ask Price		6	N	Closing or most recent ask price
Ask Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Ask Size		5	X	Number of contracts represented by the Ask Price If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code
Last Price		6	N	Closing or most recent trade price

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Last Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Open Interest	7	N	This field contains current outstanding number of contracts in the series. Updated on a trade by trade basis. Refer to Indicator Code
Tick	1	X	Determined by the difference between last price and the previous different trade price '+' = uptick '-' = downtick
Volume	8	N	Total number of contracts traded or current volume if sent after a cancellation
Net Change Sign +/-	1	X	For net change field
Net Change	6	N	Net change = last trade price - previous close Net change will be zero if the option did not trade on the last business day or did not trade today
Net Change Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Open Price	6	N	Price of the first trade of the day
Open Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
High Price	6	N	Highest trade price of the day or current high price if sent after a cancellation
High Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Low Price	6	N	Lowest trade price of the day or current low price if sent after a cancellation
Low Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Option Marker	2	A	Refer to Options Markers
Underlying Symbol Root	10	X	Symbol root for the underlying security
Settlement Price	6	N	Settlement Price

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Settlement Price Fraction Indicator	1	N	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Previous Settlement Price	6	N	Previous Settlement Price
Previous Settlement Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Reason	1	X	Indicates the reason of the summary message • S = Start of Day • E = End of Day • U = Instrument New or Update • C = Trade Cancellation

An option summary message is sent following an option trade cancellation. An option summary message is also sent each day at the start of the day in order to provide a list of options which will be trading each day. At that point, all price fields with the exception of Last Price (closing from the previous day), will contain zero values.

Any option summary sent after the BEGINNING OF OPTIONS SUMMARY message (with Message Type = Q) contains the list of trading instruments for the day (sent prior to market opening) or the summaries after the close of the market for Bourse de Montréal Inc. options (sent at 5:10 p.m. EST).

3.11.2 Message Type NB – Future Options Summary (130 Bytes)

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
Message Header		11		Refer to Message Header
Exchange I.D.		1	A	Identifies the exchange on which the trade occurred Q = Montreal
Symbol	Root Symbol	6	A	Option symbol
	Contract Month Code	1	A	Option month code Refer to Month Codes
	Expiry Year	2	N	Last two digits of the option expiry year
	Expiry Day	2	N	Expiry day of the option
	Call/Put Code	1	S	C = Call P = Put
	Strike Price	7	N	Strike price in full
	Strike Price Fraction Indicator	1	X	Defines the number of decimal places or fraction positions Refer to Fraction Indicator Code
Bid Price		6	N	Closing bid price or current bid if sent after a cancellation
Bid Price Fraction Indicator		1	X	Defines the number of decimal places or fraction positions Refer to Fraction Indicator Code
Bid Size		5	X	Total number of contracts being bid at this price If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code
Ask Price		6	N	Closing Ask Price or current Ask Price if sent after a cancellation
Ask Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Ask Size		5	X	Total number of contracts being offered at this price If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Last Price	6	N	Most current price
Settlement Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Open Interest	7	N	Outstanding number of contracts in the series as of the previous day
Tick	1	X	Calculated on the difference of the last sale price to the different previous last price '+' = uptick '-' = downtick
Volume	8	N	Total volume of contracts traded for this option series during the day or current volume if sent after a cancellation Refer to Indicator Code
Net Change Sign +/-	1	X	For net change field
Net Change	6	N	Net change = last trade price - previous settlement price If no previous settlement price (new series) then net change is zero
Net Change Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Opening Price	6	N	Opening price of the option series for the day
Opening Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
High Price	6	N	Highest trade price of the options series for the day or current high price if sent after a cancellation
High Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Low Price	6	N	Lowest trade price of the option series for the day or current low price if sent after a cancellation
Low Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Filler	2	X	
Underlying Symbol Root	3	A	Base symbol of the underlying future

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Delivery Month	1	A	Delivery month for the underlying futures contract
Delivery Year	1	N	Last digit of the delivery year of the underlying futures contract
Settlement Price	6	N	Settlement Price
Settlement Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Previous Settlement Price	6	N	Previous Settlement Price Refer to Fraction Indicator Code
Previous Settlement Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Reason	1	X	Indicates the reason of the summary message • S = Start of Day • E = End of Day • U = Instrument New or Update • C = Trade Cancel

Note: A Future Options Summary is sent following a future option trade cancellation. A Future options summary is also sent each day at the start of the day in order to provide a list of Future options which will be trading each day. At that point, all price fields with the exception of Previous Settlement Price (closing from previous day) will contain zero values.

Any Future Options Summary sent after the BEGINNING OF FUTURE OPTIONS SUMMARY message (with Message Type = QB) contains the list of trading instruments for the day (sent prior to market opening) or the summaries after the close of the market for Bourse de Montréal Inc. Future options
(sent at 5:10 p.m. EST).

3.11.3 Message Type NF – Futures Summary (120 Bytes)

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
Message Header		11		Refer to Message Header
Exchange I.D.		1	A	Identification of the exchange for the future Q = Montreal
Symbol	Root Symbol	6	A	Symbol for the Future Series
	Delivery Month	1	A	Delivery month for the underlying futures contract Refer to Month Codes
	Delivery Year	2	N	Two last digit of the delivery year
	Delivery Day	2	N	Delivery day
Bid Price		6	N	Closing bid or most recent bid if sent after a cancellation
Bid Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Bid Size		5	X	Number of contracts represented by the Bid Price If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code
Ask Price		6	N	Closing Ask Price or most recent Ask Price if sent after a cancellation
Ask Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Ask Size		5	X	Number of contracts represented by the ask price If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code
Last Price		6	N	Last trade price for the contract or the current price if sent after a cancellation
Last Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Open Price		6	N	Price of the first trade of the day
Open Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
High Price	6	N	Highest trade price of the day or current high price if sent after a cancellation
High Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Low Price	6	N	Lowest trade price of the day or current low price if sent after a cancellation
Low Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Settlement Price	6	N	Closing settlement price for the contract 0 until market closes
Settlement Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Net Change Sign +/-	1	X	For net change field
Net Change	6	N	Net change = last Trade Price - previous Settlement Price If no previous settlement price (new series) then net change is zero
Net Change Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Volume	8	N	Total number of contracts traded Refer to Indicator Code
Previous Settlement	6	N	Settlement Price for the previous day
Previous Settlement Fraction Indicator	1	X	Fraction indicator for the previous Settlement Price
Open Interest	7	N	Previous day's outstanding number of contracts in the series Refer to Indicator Code
Reason	1	X	Indicates the reason of the summary message • S = Start of Day • E = End of Day • U = Instrument New or Update • C = Trade Cancel
External Price at Source	6	N	Last price obtained from an external pricing source

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
External Price Fraction Indicator	1	X	Fraction indicator for last price obtained from external pricing source

A Futures Summary is sent following a Futures trade cancellation. A Futures summary is also sent each day at the start of the day in order to provide a list of Futures which will be trading each day. At that point, all price fields with the exception of previous settlement will contain zero values.

Any summary sent after the BEGINNING OF FUTURE SUMMARY message (with Message Type. = QF) contains the list of trading instruments for the day (sent prior to market opening) or the summaries after the close of the market for Bourse de Montréal Inc. Futures (sent at 5:10 p.m. EST).

3.11.4 Message Type NS – Strategy Summary (Min 185 Bytes / Max 779 Bytes)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11		Refer to Message Header
Exchange I.D.	1	X	Identification of the exchange for the future Q = Montreal
Strategy Symbol	30	X	Identification of the strategy The legs (underlying) are defined in message type NS
Bid Price sign +/-	1	X	For the Bid Price field
Bid Price	6	N	Closing bid or most recent bid if sent after a cancellation
Bid Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Bid Size	5	X	Number of contracts represented by the Bid Price. If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code
Ask Price Sign +/-	1	X	For the Ask Price field
Ask Price	6	N	Closing ask or most recent ask if sent after a cancellation
Ask Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Ask Size	5	X	Number of contracts represented by the Ask Price. If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code
Last Price Sign +/-	1	X	For the Last Price field
Last Price	6	N	Last Trade Price for the contract or the current price if sent after a cancellation
Last Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Open Price Sign +/-	1	X	For the Open Price field
Open Price	6	N	Price of the first trade of the day
Open Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
High Price Sign +/-	1	X	For the High Price field
High Price	6	N	Highest trade price of the day or current high price if sent after a cancellation
High Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Low Price Sign +/-	1	X	For the Low Price field
Low Price	6	N	Lowest Trade Price of the day or current low price if sent after a cancellation
Low Price Fraction Indicator	1	X	Defines number of decimal or fraction positions Refer to Fraction Indicator Code
Net Change Sign +/-	1	X	For net change field
Net Change	6	N	Net change = last trade price - previous close If no previous settlement price (new series) then net change is zero
Net Change Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Volume	8	N	Total number of contracts traded Refer to Indicator Code

<table>
<tr><th colspan="2">FIELD NAME</th><th>L</th><th>T</th><th>DEFINITION / VALIDATION RULES</th></tr>
<tr><td colspan="2">Reason</td><td>1</td><td>X</td><td>Indicates the reason of the summary message
• S = Start of Day
• E = End of Day
• U = Instrument New or Update
• C = Trade Cancel</td></tr>
<tr><td colspan="2">Number of Legs</td><td>2</td><td>N</td><td>Number of legs in the strategy
2 to 20</td></tr>
<tr><td rowspan="3">From 2 to 20 times</td><td>Leg Ratio Sign</td><td>1</td><td>X</td><td>Identification of the transaction in the strategy (buy or sell of the underlying)
+ = Buy of the underlying
- = Sell of the underlying</td></tr>
<tr><td>Leg Ratio</td><td>2</td><td>N</td><td>Quantity (bought or sold) on underlying in the strategy
1 to 20</td></tr>
<tr><td>Leg Symbol</td><td>30</td><td>X</td><td>Identification of the underlying (also referred to as HSVF Symbol)</td></tr>
</table>

A Strategy Summary is sent following a Strategy Trade Cancellation. A Strategy Summary is also sent each day at the start of the day in order to provide a list of Strategies which will be trading each day. At that point, all price fields, with the exception of Open Interest will contain zero values.

Any Strategy Summary sent after the Beginning of Strategy Summary message (with message Type. = QS) contains the list of trading instruments for the day (sent prior to market opening) or the summaries after the close of the market for Bourse de Montréal Inc. Strategies (sent at 5:10 p.m. EST).

3.11.5 Message Type NW – Swap Future Summary (164 Bytes)

Field Name		L	T	Definition / Validation Rules
Message Header		11		Refer to Message Header
Exchange I.D.		1	X	Identification of the exchange for the future Q = Montreal
Symbol	Root Symbol	6	A	Swap future base symbol
	Expiry Month	1	A	Expiry month code of the swap future Refer to Month Codes
	Expiry Year	2	N	Two last digits of the expiry year of the swap future
	Expiry Day	2	N	Expiry day of the swap future
	Tenor	2	N	The Tenor of the swap future
	Fixed Rate	5	N	The swap fixed rate
	Fixed Rate Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Bid Price		6	N	Closing bid or most recent bid if sent after a cancellation
Bid Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Bid Size		5	X	Number of contracts represented by the Bid Price If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code
Ask Price		6	N	Closing Ask Price or most recent Ask Price if sent after a cancellation
Ask Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Ask Size		5	X	Number of contracts represented by the ask price If size is greater than 99999, the 5th character becomes an exponent Refer to Indicator Code
Last Price		6	N	Last trade price for the contract or the current price if sent after a cancellation

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Last Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Open Price	6	N	Price of the first trade of the day
Open Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
High Price	6	N	Highest trade price of the day or current high price if sent after a cancellation
High Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Low Price	6	N	Lowest trade price of the day or current low price if sent after a cancellation
Low Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Settlement Price	6	N	Closing settlement price for the contract 0 until market closes
Settlement Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Net Present Value (A)	11	N	Net present value of all cash flows in the future (Floating cash flow - Fixed cash flow)
Net Present Value Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Historical Coupon (B)	11	N	Net present value of all cash flows in the past (Floating cash flow - Fixed cash flow)
Historical Coupon Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Price Alignment Interest (C)	11	N	Cumulative daily interest adjustment
Price Alignment Interest Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Net Change Sign +/-	1	X	For net change field

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Net Change	6	N	Net change = last trade price - previous close Expiry month code of the swap future If no previous settlement price, then net change is zero
Net Change Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Volume	8	N	Total number of contracts traded Refer to Indicator Code
Previous Settlement Price	6	N	Settlement Price for the previous day
Previous Settlement Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Previous Reset Rate	6	X	Reset rate at the previous reset date
Previous Reset Rate Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Open Interest	7	N	This field contains the outstanding number of contracts in the swap Updated on a trade by trade basis Refer to Indicator Code
Reason	1	X	Indicates the reason of the summary message • S = Start of Day • E = End of Day • U = Instrument New or Update • C = Trade Cancel

A Swap Future Summary is sent following a Swap Future Trade Cancellation. A Swap Future Summary is also sent each day at the start of the day in order to provide a list of Swaps that will be trading each day. At that point, all price fields, with the exception of Open Interest will contain zero values.

Any Swap Future Summary sent after the Beginning of Swap Future Summary message (with message Type = QQ) contains the list of trading instruments for the day (sent prior to market opening) or the summaries after the close of the market for Bourse de Montréal Inc. Swaps (sent at 5:10 p.m. EST).

The following table illustrates when, and in which way, certain fields are completed in HVSF.

MOMENT OF THE DAY	START OF DAY	BEFORE C UPDATE (before 9 a.m.)	AFTER C UPDATE (between 9 a.m. and 4:30 p.m.)	AFTER SETTELMENTPRICE UPDATE (after 4:30 p.m.)	END OF DAY
SettlementPrice	no	no	no	yes	yes
PreviousSettlementPrice	yes	yes	yes	yes	yes
NetPresentValue (A)	no	no	no	yes	yes
HistoricalCoupon (B)	eval*	no	no	yes	yes
PriceAlignmentInterest (C)	eval*	no	yes	yes	yes

* The values for the HistoricalCoupon (B) and PriceAlignmentInterest (C) are for the current day but **evaluated** on the previous day.

3.12 Beginning of Summary Messages

3.12.1 Message Type Q – Beginning of Options Summary (12 Bytes)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11		Refer to Message Header
Exchange I.D.	1	A	Identifies the exchange Q = Montreal

This message indicates that the beginning and the end of day option summaries (message type N) are to follow. Other messages (such as bulletins) can be interspersed with the summaries.

3.12.2 Message Type QB – Beginning of Future Options Summary (12 Bytes)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11		Refer to Message Header
Exchange I.D.	1	A	Identifies the exchange Q = Montreal

This message indicates that the beginning and the end of day Future options summaries (message type NB) are to follow. Other messages (such as bulletins) can be interspersed with the summaries.

3.12.3 Message Type QF – Beginning of Futures Summary (12 Bytes)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11		Refer to Message Header
Exchange I.D.	1	A	Identifies the exchange Q = Montreal

This message Indicates that the beginning or end-of-day Futures summaries (message type NF) are to follow. Other messages can be interspersed with the summaries.

3.12.4 Message Type QS – Beginning of Strategy Summary (12 Bytes)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11		Refer to Message Header
Exchange I.D.	1	A	Identifies the exchange Q = Montreal

This message indicates that the beginning or the end of day Strategy summaries (message type NS) are to follow. Other messages can be interspersed with the summaries.

3.12.5 Message Type QW – Swap Future Beginning of Summary (12 Bytes)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11		Refer to Message Header
Exchange I.D.	1	A	Identifies the exchange Q = Montreal

This message indicates that the beginning and the end of day swap future summaries (message type NW) are to follow. Other messages (such as bulletins) can be interspersed with the summaries.

3.13 Trade Correction Messages

3.13.1 Message Type X – Option Trade Correction (87 Bytes)

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
Message Header		11		Refer to Message Header
Exchange I.D.		1	A	Exchange on which the trade occurred Q = Montreal
Symbol	Root Symbol	6	X	Option base symbol (symbol of the underlying)
	Expiry Month	1	A	Expiry month code of the option Refer to Month Codes
	Filler	1	A	Filler
	Strike Price	7	N	Strike price of the option in full
	Strike Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
	Expiry Year	2	N	Last two digits of the option expiry year
	Expiry Day	2	N	Expiry day of the option
Volume		8	N	Number of contracts for the trade Refer to Indicator Code
Trade Price		6	N	Price at which the transaction took place
Trade Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Net Change Sign +/-		1	A	For the net change field
Net Change		6	N	Net change = last trade price - previous close
Net Change Fraction Indicator		1	X	Fraction indicator for the net change price Refer to Fraction Indicator Code
Filler		6	N	Filler
Timestamp		9	N	Time of transaction HHMMSSmmm

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Open Interest	7	N	This field contains the outstanding number of contracts in the series Updated on a trade by trade basis Refer to Indicator Code
Filler	1	X	Filler
Price Indicator Marker	1	A	Identifies the type of transaction Refer to Price Indicator Markers
Trade Number	8	X	Unique Trade Number for this instrument

3.13.2 Message Type XB – Future Options Trade Correction (88 Bytes)

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
Message Header		11		Refer to Message Header
Exchange I.D.		1	A	Exchange on which the trade occurred, "Q" for Montreal
Symbol	Root Symbol	6	A	Option symbol
	Contract Month Code	1	A	Option month code Refer to Month Codes
	Expiry Year	2	N	Last two digits of the option expiry year
	Expiry Day	2	N	Option expiry day
	Call / Put Code	1	A	C = Call P = Put
	Strike Price	7	N	Strike price in full
	Strike Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Volume		8	N	Total number of contracts traded Refer to Indicator Code
Trade Price		6	N	Price at which the transaction took place
Trade Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code

Field Name	L	T	Definition / Validation Rules
Price Indicator Marker	1	A	Identifies the type of transaction Refer to Price Indicator Markers
Net Change Sign +/-	1	A	For net change field (sign)
Net Change	6	N	Net change = last trade price - previous settlement price
Net Change Fraction Indicator	1	A	Fraction indicator for the net change Refer to Fraction Indicator Code
Filler	6	N	Filler
Timestamp	9	N	Time of transaction HHMMSSmmm
Open Interest	7	N	Outstanding number of contracts in the series as of previous day Refer to Indicator Code
Filler	2	X	Filler
Trade Number	8	X	Unique Trade Number for this instrument

At approximately 3:45 p.m. EST, closing settlement prices are determined and transmitted for all OGB (options on the 10-Year Canadian Government Bond Futures) and OBX (options on the 3-Month Canadian Bankers' Acceptance Futures). At this point most fields for each series will be blank/zero filled except for the Price field, which will contain the closing settlement price.

3.13.3 Message Type XF – Futures Trade Correction (70 Bytes)

Field Name		L	T	Definition / Validation Rules
Message Header		11		Refer to Message Header
Exchange I. D.		1	A	Exchange on which the trade occurred Q = Montreal
Symbol	Root Symbol	6	A	Futures series symbol
	Delivery Month	1	A	Delivery month for the contract Refer to Month Codes
	Delivery Year	2	N	Two last digits of the delivery year of the future series
	Delivery Day	2	N	Delivery day of the future series

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Volume	8	N	Total number of contracts traded Refer to Indicator Code
Trade Price	6	N	Price at which the transaction took place
Trade Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Net Change Sign +/-	1	X	For net change field (sign)
Net Change	6	N	Net change = last trade price - previous settlement price
Net Change Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Filler	6	N	Filler
Timestamp	9	N	Time of transaction HHMMSSmmm
Price Indicator Marker	1	X	Identifies the type of transaction Refer to Price Indicator Markers
Trade Number	8	X	Unique Trade Number for this instrument

3.13.4 Message Type XS – Strategy Trade Correction (90 Bytes)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11		Refer to Message Header
Exchange I. D.	1	A	Exchange on which the trade occurred Q = Montreal
Symbol	30	X	Identifies the strategy The legs (underlying) are defined in message type NS Alphanumeric with ".","+","-"
Volume	8	N	Total number of contracts traded Refer to Indicator Code
Trade Price Sign +/-	1	X	For Trade Price field (sign)
Trade Price	6	N	Price at which the transaction took place
Trade Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Net Change Sign +/-	1	X	For net change field
Net Change	6	N	Net change = last trade price - previous close
Net Change Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Filler	6	N	Filler
Timestamp	9	N	Time of transaction HHMMSSmmm
Price Indicator Marker	1	X	Identifies type of transaction Refer to Price Indicator Markers
Trade Number	8	X	Unique Trade Number for this instrument

3.13.5 Message Type XW – Swap Future Trade Correction (72 Bytes)

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
Message Header		11		Refer to Message Header
Exchange I. D.		1	A	Exchange on which the quote occurred Q = Montreal
Symbol	Root Symbol	6	X	Swap future base symbol
	Expiry Month	1	A	Expiry month code of the swap future Refer to Month Codes
	Expiry Year	2	N	Last two digits of the expiry year of the swap future
	Expiry Day	2	N	Expiry day of the swap future
	Tenor	2	N	The tenor of the swap future
	Fixed Rate	5	N	The swap fixed rate
	Fixed Rate Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Trade Volume		8	N	Total number of contracts traded Refer to Indicator Code
Trade Price		6	N	Price at which the transaction took place
Trade Price Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Net Change Sign +/-		1	X	For net change field
Net Change		6	N	Net change = last trade price - previous settlement price
Net Change Fraction Indicator		1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
Timestamp		9	N	Time of transaction HHMMSSmmm
Price Indicator Marker		1	X	Identifies type of transaction Refer to Price Indicator Markers
Trade Number		8	X	Unique Trade Number for this instrument

3.14 Other Messages

3.14.1 Message Type GR – Group Status (19 Bytes)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11		Refer to Message Header
Exchange I.D.	1	A	Exchange on which the quote occurred Q = Montreal
Root Symbol	6	X	Root of the instrument group
Group Status	1	A	Group status of the trading instrument Refer to Status Markers

This message will be sent when a group of trading instruments enters a new status.

3.14.2 Message Type GS – Group Status (Strategies) (15 Bytes)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11		Refer to Message Header
Exchange I.D.	1	A	Exchange on which the quote occurred Q = Montreal
Group Instrument	2	X	Group of the instrument
Group Status	1	A	Group status of the trading instrument Refer to Status Markers

This message will be sent when a Strategy group of trading instruments enters a new status. All strategies have a predetermined group that can be found in the JS message (Strategy Instrument Keys message).

3.14.3 Message Type L – Bulletins (93 Bytes)

Bulletins will be sent throughout the trading day. More than one message will be used if the bulletin is longer than 79 characters. The continuation character "0" indicates that the bulletin continues to the next record.

When a Trading instrument has been halted by the Bourse de Montréal Inc., a Bulletin Message explaining the reason for the halt will be transmitted. When the trading instrument is reinstated, another Bulletin Message explaining the news that accompanied the reinstatement will be transmitted.

All records that make up a particular bulletin will be sent out together. No other message will be interspersed among the records that make up a complete bulletin.

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11		Refer to Message Header
Reserved	1		Reserved for future use
Bulletin Type	1	X	1 = Regular text bulletin, refer to Bulletin Type 1 - Regular Text Bulletin 2 = Special text bulletin, refer to Bulletin Type 2 - Special Text Bulletin

Bulletin Type 1 – Regular Text Bulletin

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Bulletin Contents	79	X	Bulletin in textual form. Left justified, blank fill
Continue Marker	1	N	0 = Bulletin continues in next record 1 = Bulletin ended

Bulletin Type 2 – Special Text Bulletin

This bulletin type will be used for bulletins relating to a specific trading instrument.

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Symbol	30	X	
Bulletin Contents	49	X	Bulletin in textual form. Left justified, blank fill
Continue Marker	1	N	0 = Bulletin continues in next record 1 = Bulletin ended

Note: Any continuation records will also contain the symbol as the first 30 bytes of the bulletin field.

3.14.4 Message Type S – End of Sales (18 Bytes)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11		Refer to Message Header
Reserved	1		Reserved for future use
Time	6	N	Time at which the message is transmitted HHMMSS

The "End of Sales" message will be sent when there is no more trading activity to be transmitted. This will occur after the closing of the market.

3.14.5 Message Type TT – Tick Table (Min 80 Bytes / Max 486 Bytes)

FIELD NAME		L	T	DEFINITION / VALIDATION RULES
Message Header		11		Refer to Message Header
Exchange I.D.		1	A	Q = Montreal Q by default
Tick Table Name		50	X	Tick Table name (See Tick Table)
Tick Table Short Name		2	X	Tick Table short name (See Tick Table)
Nb. Entries		2	N	Indicates the number of entries in the table (from 1 to 30)
Entries (max. 30 blocks)	Min Price	6	N	Starting price for this tick entry
	Min Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code
	Tick Price	6	N	Used for this instrument if the price is higher than Min Price
	Tick Price Fraction Indicator	1	X	Defines number of decimal places or fraction positions Refer to Fraction Indicator Code

The "Tick Table" message is used to send the Tick Table information via HSVF.

3.14.6 Message Type U – End of Transmission (18 Bytes)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11		Refer to Message Header
Exchange I.D.	1	A	Q = Montreal Q by default
Time	6	N	Time at which the message is transmitted HHMMSS

This message will be sent to indicate that the day's transmission is complete. This message will be sent at approximately 5:15 p.m. daily. After this hour, no HSVF messages will be transmitted. Transmission will resume the following day at 1:00 a.m.

3.14.7 Message Type V – Circuit Assurance (17 Bytes)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11		Refer to Message Header
Time	6	N	Time at which the message is transmitted HHMMSS

This message is sent out if no messages are sent by SAM for more than one minute after the broadcast has started (i.e. at the termination of the Test Loop message). This will be an assurance that the line is up.

This message will continue to be sent until the End of Transmission message (type U) is sent. The Circuit Assurance message will repeat the sequence number of the previous record transmitted (except if it is a re-transmit message) i.e. it will not increase the sequence number.

3.14.8 Message Type Z – Timebeat (20 Bytes)

FIELD NAME	L	T	DEFINITION / VALIDATION RULES
Message Header	11		Refer to Message Header
Time	9	N	Time at which the message is transmitted HHMMSSmmm

This message is sent out every second.

Section 4 Fields Description

4.1 Price and Fraction Indicator Code

The **Price** field is a six-character numeric field.

Note: The exception to the above is for MarketOnOpen (MOO) orders, where the Price field contains ’000OUV’ with a Fraction Indicator Code of ’0’. ’000OUV’ stands for ’Opening Price’ as calculated by the trading engine during the pre-opening phase.

The delineation of the whole number portion of the price and the decimal/fractional portion of the price will be defined by the Fraction Indicator (FI) Code. Furthermore, the FI indicates the manner in which the price is displayed visually. This implies that all zero fractions may be sent in order to maintain consistency in the visual alignment of the implied decimal places. The all zero fraction is replaced by spaces for visual display.

No truncation of price data is permitted by this Specification, except for high-order zeros for products that trade in fractions of 1/10,000,000 or smaller. Should such a truncation be necessary, then it is implicit from the FI, which is 7, 8, or 9.

All fractions are expressed as fractions or in decimals as defined by the price fraction rules of the particular product (section Tick Table). The **Fraction Indicator Code** is one alphanumeric character as follows:

FRACTION	CODE	FRACTION	CODE
1/1	0	-1/1	A
1/10	1	-1/10	B
1/100	2	-1/100	C
1/1,000	3	-1/1,000	D
1/10,000	4	-1/10,000	E
1/100,000	5	-1/100,000	F
1/1,000,000	6	-1/1,000,000	G
1/10,000,000	7		
1/100,000,000	8		
1/1,000,000,000	9		

4.2 Options Markers

First letter (Currency or type of market)	
Marker	**Description**
B	Trading in British Pound
C	Trading in Canadian Dollar
D	Danish Krone
E	Trading in Swiss Franc
F	Trading in Euro
N	Norwegian Krone
S	Swedish Krona
U	Trading in US Dollar
Y	Trading in Japanese Yen
X	British Pence
2nd letter (Type of options)	
Blank	Regular Options

4.3 Status Markers

Status		Used in	
Marker	**Description**	**Group Messages**	**Instrument Messages**
Y	Pre-opening phase	X	X
O	Opening phase	X	X
T	Opened for Trading	X	X
F	Forbidden phase	X	X
E	Intervention Before Opening	X	X
H	Trading Halted	X	X

STATUS		USED IN	
MARKER	DESCRIPTION	GROUP MESSAGES	INSTRUMENT MESSAGES
R	Reserved phase (goes into a state as pre-opening where orders can be sent, modified, or canceled)		X
S	Suspended phase (goes into a state as pre-opening where orders can be sent, modified, or cancelled)		X
Z	Frozen[4]		X
A	Surveillance Intervention phase (Consultation phase)	X	X
C	End-of-Day Inquiries phase	X	X
BLANK	If not used		

4.4 Price Indicator Markers

PRICE INDICATOR	
MARKER	DESCRIPTION
A	As-of-trade
B	Block trade
BLANK	Actual transaction took place
D	Crossed
E	EFP reporting
G	Contingent trade
H	Riskless Basis Cross
I	Implied trade
J	Delta trade
K	Committed Block

[4]No longer in use.

PRICE INDICATOR	
MARKER	**DESCRIPTION**
L	Late trade
M	For future use
N	For future use
P	Strategy reporting
Q	For future use
R	EFR reporting
S	Reference price (volume field zero filled)
t	Trade Correction
T	Committed
U	Basis on Close
V	Price/Volume adjustment
Y	For future use
Z	For future use

4.5 Indicator Code

This code is used for Bid/Ask Size, Volume, and Open Interest.

MARKER	DESCRIPTION (THE SIZE OF THE BID/ASK FIELD IS IN …)	
C	100	(Hundreds)
D	1,000	(Thousands)
E	10,000	(Ten-Thousands)
F	100,000	(Hundred-Thousands)
G	1,000,000	(Millions)
H	10,000,000	(Ten-Millions)
I	100,000,000	(Hundred-Millions)
J	1,000,000,000	(Billions)

DATA	MESSAGE SENT	PARTICIPANT SHOULD DISPLAY…
Bid size of 124 872	Size field will indicate ’1248C’	124 800
Volume of 8,457,188	Volume will indicate ’8457188’	8,457,188
Volume of 258,487,797	Volume will indicate ’2584877C’	258,487,700
Open Interest of 544,871	Size field will indicate ’544871’	544871
Open Interest of 17,458,795	Size field will indicate ’174587C’	17,458,700

4.6 Currency Codes

CURRENCY	
MARKER	DESCRIPTION
USD	US $
CAD	Canadian $
Blank	Not provided

4.7 Line Definitions

LINE NAME	INSTRUMENT TYPES	DEPTH
O1	Equity Options Exchange Traded fund (ETF) Options Index Options Currency Options	Best limit
O2	Equity Options Exchange Traded fund (ETF) Options Index Options Currency Options	5 levels
F1	Interest Rate Options Futures	Best limit
F2	Interest Rate Options Futures	5 levels

4.8 Error Definitions

ErrorCode	ErrorMsg
0001	Unknown Message Type
0002	Invalid Message Length
0003	Invalid Characters
0100	Invalid Protocol Version
0101	Already Logged In
0102	Not Logged In
0103	Invalid Line Name
0104	Maximum Number of Retransmission Request Reached
0105	Invalid Sequence Number
0106	Continuous Feed Request in Progress
0107	Cannot Process Legacy Mode Command. TCP Mode Already in Use
0108	Cannot Process TCP Mode Command. Legacy Mode Already in Use

4.9 Protocol Version

Value	Label
D4	D4
D5	D5

4.10 Frequency Codes

Code	Description
2W	Two Weeks
1M	One Month
3M	Three Months
6M	Six Months
1Y	One Year

4.11 Market Feed Indicators

FIRST LETTER	TYPE OF INSTRUMENT	SECOND LETTER	TYPE OF UNDERLYING
F	Futures	U	Rate / Other
P	Options on Futures	X	Index
O	Options	E	Equities
U	Strategies on Options on Futures	S	Swap
V	Strategies on Futures		
W	Strategies on Options		
Other indicators could be determined later.			

4.12 Month Codes

Options and Strategies on Options

CALL OPTIONS AND STRATEGIES		
A – January	E – May	I – September
B – February	F – June	J – October
C – March	G – July	K – November
D – April	H – August	L – December
PUT OPTIONS		
M – January	Q – May	U – September
N – February	R – June	V – October
O – March	S – July	W – November
P – April	T – August	X – December

Futures / Futures Options / Strategies / Swap Future

F – January	N – July
G – February	Q – August
H – March	U – September
J – April	V – October
K – May	X – November
M – June	Z – December

4.13 Tick Table

This table contains the Tick Table message related information.

TickTableName	ShortName	MinPrice	TickPrice
HalfTick	HT	0.005	0.005
Penny	PE	0.01	0.01
Penny to Dime	2P	0.01	0.01
		0.1	0.05
Nickel	NK	0.05	0.05
Multi Milli	2M	0.001	0.001
		0.01	0.005
Milli	MM	0.001	0.001
Penny to 3 Dollars	3P	0.01	0.01
		3	0.05
5 Dollars	D5	5	5
Dollar	D1	1	1
Dime	DI	0.1	0.1

Section 5 Processing Strategies

5.1 Messages to Use

- JS (Strategy Instrument Keys)
- J/JF/JB (Leg Instrument Keys for Options, Futures, and Future Options)
- NS (Strategy Summary Messages)

5.2 Process

The following procedure outlines the steps to perform when creating Leg & Strategy Descriptions.

STEPS	DESCRIPTION
1	Obtain the **Strategy Symbol** from the received JS message in order to map it to the **Strategy Symbol** from the received **NS** message. JS messages can be broadcasted anytime during the HSVF trading day.
2	For each **J/JF/JB** message received, create and maintain a table of the 'Leg' couples, '**HSVF Symbol - Instrument External Code**'.
3	In the **NS** message, for each leg received: The Leg Symbol is linked to the HSVF Symbol from each J/JF/JB message received. Generate the **Leg Description** by joining: • Leg Ratio Sign • Leg Ratio • Leg Symbol Remove all the insignificant " 0 " and spaces.
4	Generate the Strategy Description by joining each Leg Description in their respective order in the NS message, and remove all insignificant spaces.

The examples on the following pages are colour-coded as per the following legend:

- Message Type
- HSVF Symbol
- Strategy Symbol
- Instrument External Code
- # of legs
- Leg Ratio Sign
- Leg Ratio
- Leg Symbol

Example 1: Futures vs. Futures detail

000000134JFQBAX
Z17180099990000010998903098090300000053FUBX1162BAXZ17
000025000010003CADBAX C

000000138JFQBAX
M1818009999000001099790309799030000103FUBX1762BAXM18
000025000010003CADBAX C

000000142JFQBAX
Z1817009999000001099660309786030000103FUBX1D62BAXZ18
000025000010003CADBAX C

000006763JSQBAX+Z7-2M8+Z8
17Z18009999000000100050030005 00D0000053VUXG50N4BAX+Z7-2M8+Z8
Y

000006764NSQBAX+Z7-2M8+Z8
+000000000000+000000000000+0000000+0000000+0000000+0000000+00000000
0000000+0000000+0000000S03+01BAX Z1718 -02BAX M1818
+01BAX Z1817

Msg	HSVF Symbol	Ext. Instrument Code	#Legs	Leg Descr. 1	Leg Descr. 2
JF	BAX Z1718	BAXZ17	N/A	N/A	N/A
JF	BAX M1818	BAXM18	N/A	N/A	N/A
JF	BAX Z1817	BAXZ18	N/A	N/A	N/A

Msg	Strategy Symbol	Ext. instrument Code	#Legs	Leg Descr. 1	Leg Descr. 2
JS	BAX+Z7-2M8+Z8	BAX+Z7-2M8+Z8	N/A	N/A	N/A

Msg	Strategy Symbol	Ext. Inst. Code	#Legs	Leg Descr. 1	Leg Descr. 2	Leg Descr. 3
NS	BAX+Z7-2M8+Z8		03	+01BAX Z1718	-02BAX M1818	+01BAX Z1817

Example 2: Options vs. Options detail

000041332J QRUS R 002700031716CAD09999900000199990030000103TT=OP AOER3M900RUS 170616P27.00 C RUS 000001000010003CADC

000041316J QRUS R 002500031716CAD09999900000199990030000103TT=OP AOER3M500RUS 170616P25.00 C RUS 000001000010003CADC

000059697JSQRUS_UDS_ESMGH6 17F1609999900000199990029999 00C0000103WEESMGH6RUS_UDS_ESMGH6 Y

000059698NSQRUS_UDS_ESMGH6 +000000000000+000000000000+0000000+0000000+0000000+0000000+00000000 0000000+0000000+0000000S02+01RUS R 002700031716 -01RUS R 002500031716

Msg	HSVF Symbol	Ext. Instrument Code	#Legs	Leg Descr. 1	Leg Descr. 2
J	RUS R 002700031716	RUS 170616P27.00	N/A	N/A	N/A
J	RUS R 002500031716	RUS 170616P25.00	N/A	N/A	N/A

Msg	Strategy Symbol	Ext. Instrument Code	#Legs	Leg Descr. 1	Leg Descr. 2
JS	RUS_UDS_ESMGH6	RUS_UDS_ESMGH6	N/A	N/A	N/A

Msg	Strategy Symbol	Ext. Instrument Code	#Legs	Leg Descr. 1	Leg Descr. 2
NS	RUS_UDS_ESMGH6		02	+01RUS R 002700031716	-01RUS R 002500031716

Example 3: Futures Options and Futures Options (4 legs)

000003244JBQOBX
H1819C00992503CAD00999900000100035030000013TT=OP
PUOX3GWCOBXH18C9925 000000012500002CADC

000003284JBQOBX
H1819P00992503CAD00999900000100065030000503TT=OP
PUOX3HWCOBXH18P9925 000000012500002CADC

000006765JSQH8STDL92
18H190099990000019999002999900C0000053VUXG50P4H8STDL92
Y

000006766NSQH8STDL92
+000000000000+000000000000+0000000+0000000+0000000+0000000+00000000
0000000+0000000+0000000S02+01OBX H1819C00992503 +01OBX
H1819P00992503

Msg	HSVF Symbol	Ext. Instrument Code	#Legs	Leg Descr. 1	Leg Descr. 2
JB	OBX H1819C00992503	OBXH18C9925	N/A	N/A	N/A
JB	OBX H1819P00992503	OBXH18P9925	N/A	N/A	N/A

Msg	Strategy Symbol	Ext. Instrument Code	#Legs	Leg Descr. 1	Leg Descr. 2
JS	H8STDL92	H8STDL92	N/A	N/A	N/A

Msg	Strategy Symbol	Ext. Instrument Code	#Legs	Leg Descr. 1	Leg Descr. 2
NS	H8STDL92		**02**	+01OBX H1819C00992503	+01OBX H1819P00992503

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