



Technical Notice

10-007

TO: BOX Participants
FROM: Participant Connectivity Coordinator
SUBJECT: Max Improvement Price
DATE: March 29, 2010

The Boston Options Exchange is pleased to announce the release of a new functionality associated with the Price Improvement Period (PIP) auctions. This functionality is called Max Improvement Price (MIP). The MIP functionality will allow the initiating Participant (InitO) of a PIP to specify a Max Improvement Price up to which the InitO is willing to “auto-match”.

Note: Participants that currently use the BOX PIP and do not wish to use the Max Improvement Price functionality, do not have to make any changes.

When a MIP value is defined, most aspects of the PIP, as they are known today, will remain unchanged, with a few exceptions regarding Improvement Orders and guaranteed quantity allocation.

Key Features

- Available for both FIX and SAIL users.
- MIP can be entered directly or through a Directed Order (DO).
- Ability to specify a Max Improvement Price in addition to the auction start price.
- Max Improvement Price can be a limit or market (match all improvements) order.
- InitO will “Auto match” at all better price levels, including the Max Improvement Price.
- InitO will “Auto match” for the entire quantity at each improved price level, except the level where the MBF will be completely filled.
- InitO will have the lowest priority at each improved price level.
- In a PIP with a MIP defined, at the price level where the MBF will be completely filled, the allocation algorithm will be the same as for a regular PIP with the only exception being that the guaranteed quantity for the InitO will be based on the **remaining** MBF quantity and not the original quantity.
- No dissemination of “Auto Improvements” by InitO to the market.
- Improvement Orders entered by the InitO while the MIP is in progress will be rejected.

Protocol Changes

SAIL

The tables below describe changes to the SAIL protocol to support Max Improvement Price.

New Field Name	Value	SAIL Message	Description	Field Length
QuantityTerm	J	OA / OD	Defines Auction Type as MIP	1
AdditionalPrice	MIP value*	OA / OD	Specifies the Max Improvement Price	10
IML Handling	3	OA	Price validation within Linkage rules	1
Special Price Term	<blank>	OA	Specifies Guaranteed Auction	1
Additional Quantity	<blank>	OA	Not used / For future use	8

New Field Name	Value	Usage
QuantityTerm	J / <blank>	Indicates that the Auction Type is MIP / PIP
AdditionalPrice	MIP value*	Indicates the price up to which the InitO will match against Improvement Orders
	<blank>	Indicates that the InitO will match up to the best available price opposite the MBF at the end of the auction

* MIP value must be > 0.

SAIL messages

New OA message structure (new fields are in bold):

Field Name	Field Type	Req/Opt
Incoming Message Header		R
Group	Group ID	R
Instrument	Instrument ID	R
Verb	Verb	R
Quantity	Quantity	R
Price	Price	R
Buying Clearing Data	Clearing Data	R
Selling Clearing Data	Clearing Data	R
Buying Owner Data	Owner Data	O
Selling Owner Data	Owner Data	O
IML Handling	IML Handling	O
Special Price Term	String (1)	R
AdditionalPrice	Price	O
QuantityTerm	String (1)	O
Additional Quantity	Quantity	O
Buying Post Trading Instruction **	String(50)	O
Selling Post Trading Instruction **	String(50)	O

New OD message structure (new fields are in bold):

Field Name	Field Type	Req/Opt
Incoming Message Header		R
Group	Group ID	R
Instrument	Instrument ID	R
Referenced Order ID	Order ID	R
Auction Starting Price	Price	R
Clearing Data (dealer)	Clearing Data	R
Owner Data (dealer)	Owner Data	R
Additional Price	Price	O
QuantityTerm	String (1)	O
PostTradingInstruction **	String(50)	O

** See additional SAIL changes section for details.

Note 1: When the **QuantityTerm** field is set to **<blank>**, no "MIP value" needs to be defined in the **AdditionalPrice** field of the OA / OD message. If a participant still specifies a "MIP value", the whole OA / OD message will be rejected.

Note 2: Participants using **SAIL protocol A1** will have to make sure to properly populate the field **IML Handling** with value **"3"** in the OA message. This is the only setting appropriate for the MIP functionality. Should a participant either omit to set the IML Handling value to "3" or set it to a different value; the whole OA message will be rejected.

Note 3: Participants will have to make sure to properly populate the field **Special Price Term** with value <blank> in the OA message. This is the only setting appropriate for the MIP functionality. Should a Participant set this field to a different value; the whole OA message will be rejected.

FIX

The tables below describe the changes to the FIX protocol to support Max Improvement Price.

Field Name	Tag #	Value	FIX Message	Description	Field Length
QtyType	854	J	PI / 8	Defines Auction Type as MIP	1
PricImprovement	639	MIP value	PI / 8	Specifies the Max Improvement Price	1 to 9
CombinedOrderType	7906	3	PI / 8	Price validation within OLA rules	1

New Field Name	Tag #	Value	Usage
QtyType	854	J / <Not Transmitted>	Indicates that the Auction Type is MIP / PIP
PricImprovement	639	MIP value	Indicates the price up to which the InitO will match against Improvement Orders
		<Not Transmitted>	Indicates that the InitO will match up to the best available price opposite the MBF at the end of the auction

Note 4: When the **QtyType** field is <Not Transmitted>, no "MIP value" needs to be defined in the PricImprovement field of the **PI** message. If a Participant still specifies a "MIP value", the whole PI message will be rejected.

Note 5: In message **PI**, Participants need to make sure to properly populate the field **CombinedOrderType** <tag 7906> with the value "3". This is the only setting appropriate for the MIP functionality. Should a Participant set this field to a different value; the whole PI message will be rejected. However, if Participants do not transmit this tag, the trading system will by default set its value to "3".

Example

MIP Starts with InitO Buy 100 @ 1.01 and a Max Improvement Price of 1.05:

Improvements at end of PIP duration	InitO 'Auto Matches'
Improvement Order#4 – 20 @ 1.06	
Improvement Order#3 - 10 @ 1.05	10 @ 1.05
Improvement Order#2 - 40 @ 1.04	40 @ 1.04
Improvement Order#1 - 50 @1.03	50 @ 1.03

Note: InitO does not "Auto Match" at price 1.06 because the price is above the Max Improvement Price of 1.05 specified by InitO at the start of the MIP.

Additional SAIL changes

As a follow up to the Give Up release, fields "PostTradingInstruction" and "ClearingOperationMode" are being added to the **OA, OD and OI** messages in the SAIL protocol.

New Field Name	Value	Description	Field Length
ClearingOperationMode	C	When one CMTA firm is defined in the field ClearingDestination	1
	G	When one Give Up firm is defined in the field ClearingDestination	
	I	When one Give Up and one CMTA firm is defined in the new field PostTradingInstruction	
	<blank>	When using default clearing firm defined in configuration	
PostTradingInstruction	A string of characters (end of the message)	Contains the Firm ID of one Give Up and one CMTA firm with the following format: C + CMTA FIRM ID + G + GIVE-UP FIRM ID Example: "C950G980"	50

Please refer to BOX Technical Notice 10-004 for additional details on Give Up.

BOX ISV environment will be available for Participants starting March 31, 2010.

Contacts

Please contact the Market Operations Center at (866) 768-8845 or by e-mail at BOXMOC@bostonoptions.com if you require additional information.

Thank you,
BOX Participant Connectivity Coordinator