PLUG AND **TRADE**

Fast Trader

DSA FIX Specification

Versão 1.1.0

Summary

1   Introduction

This document main objective is to provide all the necessary information for a FIX client application to properly connect to the Fast Trader Algorithmic platform and use the strategies available to trade. All the supported messages and features are listed and explained, as well as their related fields.

1.1   About Fast Trader

Fast Trader is an Algorithmic platform for automated strategy execution developed by Plug and Trade for Brazilian brokers and its main objective is to provide fast and reliable order execution for the national exchange BM&FBovespa and its negotiation systems. The platform implemented strategies are now being available via FIX protocol.

1.2   About the FIX protocol

The FIX (Financial Information eXchange) Protocol is a series of messaging specifications for the electronic communication of trade-related messages. It has been developed through the collaboration of banks, broker-dealers, exchanges, industry utilities and associations, institutional investors, and information technology providers from around the world. These market participants share a vision of a common, global language for the automated trading of financial instruments.

FIX is the industry-driven messaging standard that is changing the face of the global financial services sector, as firms use the protocol to transact in an electronic, transparent, cost efficient and timely manner. FIX is open and free, but it is not software. Rather, FIX is a specification around which software developers can create commercial or open-source software, as they see fit. As the market's leading trade-communications protocol, FIX is integral to many order management and trading systems. Yet, its power is unobtrusive, as users of these systems can benefit from FIX without knowing the language itself.

For further information please refer to:

http://www.fixprotocol.org/

2   FIX Sessions

This chapter compiles the necessary information to establish a successful FIX session between the client application and the Plug and Trade Fast Trader, and so allowing the client to route strategy orders to the system.

2.1   Version

The system only accepts FIX 4.4 because of its more suitable adhesion to the strategies needs. Nonetheless some new tags where introduced.

Request our custom FIX44.xml dictionary and replace it in your quickfix/dictionaries folder.

2.2   Connection Type

Fast Trader DSA accepts FIX sessions of both Initiator and Acceptor type. In the latter case, client IP and port must be informed so that Fast OMS can create a FIX session to properly connect to the client.

2.3   SenderCompID (49)

For each client application registered in Fast Trader a unique identification is granted. This ID is used to establish the FIX session and must be set to field SenderCompID <49> in the FIX standard header on every FIX message sent by the client application.

2.4   TargetCompID (56)

It will also be given a FIX session ID for Fast OMS itself. This ID is also used to establish the FIX session and must be set to field TargetCompID <56> in the FIX standard header on every FIX message sent by the client application.

2.5   OnBehalfOfCompID (115)

Currently not supported.

2.6   OnBehalfOfSubID (116)

May optionally be used to receive the username of the trader that placed the order. If the trader is a broker, mandatory fields have to be sent to the Exchange, so this field becomes important and must match a user on DSA's user database.

2.7   SenderSubID (50) and TargetSubID (57)

Currently not supported by default. DSA may be configured to send or receive the current username / Trader ID on these fields instead of the default one, OnBehalfOfSubID (116).

DSA may also be configured to store and return the received value on these fields.

2.8   NoHops

The NoHops field and its related fields are not accepted nor returned to the client by the current version of Fast Trader.

3   Administrative FIX Messages

Administrative messages are used to manage the FIX session life cycle. These are the administrative messages used by Fast Trader:

- Logon <A>
- Logout <5>
- HeartBeat <0>
- TestRequest <1>
- ResendRequest <2>
- Reject <3>
- SequenceReset <4>

Their use strictly follows the rules defined in the FIX Protocol.

4 Fix Application Messages

This chapter lists all messages used to send orders to Bovespa and BM&F and that are exchanged between Fast OMS and a client application.

The application messages are responsible for exchanging the trade information. These are the application messages supported:

- NewOrderSingle <D>
- ExecutionReport <8>
- OrderCancelRequest <F>
- OrderModificationRequest <G>
- OrderCancelReject <9>

Note that the definitions below will omit the fields corresponding to the Header and Trailer of any FIX Message. Those will be standard.

4.1 New Algorithmic supporting Tags

To support the operation with strategies some new tags where created to reflect the functionalities needed so they will have to be included to the FIX dictionary. The proper FIX dictionary can be obtained directly from us by request. The fields are:

Tag	Name	Type	Description
20768	CountCrossOrders	Boolean	Used to indicate that the strategy is considering cross orders for trading volume accounting. *Recommended default: N.*
20769	BidAskOnTheBook	Boolean	Indicates if the strategy will place offers on the book attempting to generate executions. (not just closing standing opportunities). *Recommended default: Y.*
20770	ForceCompletion	Boolean	Indicates if the strategy has to execute all the quantity set for the order before its end time. *Recommended default: Y.*
20771	MaxReplaces	Int	Indicates how many replaces made without managing to execute an order before sending a warning. Warning is not sent on FIX channel, and only shown on PnT FastTrader Interface. It is recommended that this field is omitted or is filled with a large value, such as 1.000. *Accepted values: 1..N*
20772	OfferInterval	Int	How many seconds between offer sendings/replaces for a specific order. *Accepted values: 0..N*
20773	ResetOrder	Boolean	Indicates if order state is to be reset upon replace. *Recommended default: Y.*
20774	IgnoredQuantity	Int	Indicates how many lots should be taken off the top of the book. *Accepted values: 0..N (Respecting RoundLot, value will be rounded otherwise)*
20775	MaxParticipationRate	Percentage	The maximum volume participation that the strategy may have from the market during the execution. *Accepted values: 0..1, where 1 corresponds to 100% participation.*
20776	MinParticipationRate	Percentage	The minimum volume participation that the strategy must have from the market during the execution. *Accepted values: 0..1, where 1 corresponds to 100% participation.*
20777	LegMaxParticipationRate	Percentage	The maximum volume participation that the strategy may have from the market during the execution of the order for the specific leg. *Accepted values: 0..1, where 1 corresponds to 100% participation.*
20778	LegIgnoredQuantity	Int	Indicates how many lots should be taken off the top of the book of the specific leg. *Accepted values: 0..N (Respecting RoundLot, value will be rounded otherwise).*

20779	LegBidAskOnTheBookDepth	Int	Indicates if the strategy will place offers on the book attempting to generate executions. (not just closing standing opportunities) for the specific leg. Some values have special behaviours: -1 - Don't place bid/offer, and only take this leg after the execution confirmation for other legs are received. 0 – Don't place bid/offer 1 – Place bid/offer only if best offer 2 – Place bid/offer only if best offer or 2nd offer 3 – Place bid/offer only if best offer or up to 3rd offer 4 – Place bid/offer only if best offer or up to 4th offer. Robot won`t prevent placing of offer if it's execution would cause an auction as it does on other depths. *Accepted values: -1..4.*
20780	LegCashOrdQty	Float	Notional value specified for the leg. *Accepted values: 1..N, in security's currency (Usually BRL, R$)*
20781	SpreadMethod	Int	Indicates what strategy is going to be used. *Accepted values: 0..10, as explained on each individual strategies below.*
20782	TargetSpread	Float	Indicates the value that is going to be used as a reference for the strategies to trade. *Accepted values: -N..N or 0..N, as explained in individual strategies below.*
20783	WaitLeg	Boolean	Indicates if the server should not close lost legs in pair trading automatically. *Recommended default: N.*
20784	CompensateCoefficient	Boolean	Indicates if the algo server will try to compensate any execution off the specified parameter. *Recommended default: Y.*
20785	CancelOffersOutsideDepth	Boolean	Indicates if the server is to cancel a offer if it falls behind the selected book position limit. *Recommended default: N.*
20786	BidAskOnTheBookWithMargin	Boolean	Indicates if the server is going to consider the average price needed to trade the whole lot needed in pair tradings with out of proportion quantities. *Recommended default: Y.*
20787	MaxLostLegPriceDiff	Price	Indicates the maximum price difference from the needed price that the server can roam from to close a needed leg from a multileg order. *Accepted values: 0..N, respecting Security`s MinPriceIncrement.*
20788	StartLimit	Price	The price monitored for start gain orders. *Accepted values: 0..N, respecting Security`s MinPriceIncrement.*
20789	StartPx	Price	The price of triggered start gain orders. *Accepted values: 0..N, respecting Security`s MinPriceIncrement.*

20790	~~MarketValue~~	Float	The current market value. *Not used in current implementation.*
~~20791~~	~~ExecutedValue~~	Float	The current executed value of the order. *Not used in current implementation.*
~~20792~~	~~UsedValue~~	Float	The current used value in the order as a parameter. *Not used in current implementation.*
~~20793~~	~~MarketVolume~~	Float	The current total market volume for the symbol since last reset. *Not used in current implementation.*
~~20794~~	~~IsShort~~	Boolean	Indicates if leg is short. *Not used in current implementation.*
~~20795~~	~~ShortQty~~	Int	Indicates the amount needed to fill the pair. *Not used in current implementation.*
~~20796~~	~~ShortPrice~~	Price	Indicates the price needed to fill the áir properly. *Not used in current implementation.*
~~20797~~	~~IsOverrun~~	Boolean	Indicates if the order has executed a quantity bigger than specified originally. *Not used in current implementation.*
20798	LegLastQty	Int	Quantity of last leg trade. *Sent values: 0..N (Respecting RoundLot, value will be rounded otherwise)*
20799	LegLastPx	Price	Price of last leg trade. *Accepted values: 1..N, in security's currency (Usually BRL, R$)*
20800	LegCumQty	Qty	
20801	LegAvgPx	Price	
20802	LegOpenQty	Qty	
20803	LegOpenPx	Price	
20804	MultipleOffers	Boolean	f true, Robot will create an extra order when increasing Offer Qty. Useful to preserve queue order. Default: False **Caption in en-US:** Place mult. orders **Caption in pt-BR:** Apregoar mult. ordens
20805	WaitLargerSide	Boolean	If true, Robot will wait for enough trades on the larger side to make a trade on the smaller side. **Caption in en-US:** Wait for larger lot **Caption in pt-BR:** Esperar lotes maiores
20806	OpenPx	Price	Average price or orders open / placed at market for this order.
20807	OpenQty	Qty	Quantity of orders open / placed at market for this order.
20810	ParticipateOwnVolume	Boolean	If 'Y', the volume executed by the own strategy is added to calculate the market executed volume. *Recommended default: Y.*
20811	AcumulateOutOfPriceLimit	Boolean	When 'No' is supplied, trades with a 'worst' price (above for buying operations or below for

			selling operations) than the limite price are not summed to the total market volume/quantity. *Recommended default: Y.*
20812	NoParticipationRateLevels	Int	Always >= 2, two levels are always required. *Accepted values: 2..N*
20813	=> ParticipationRateLevel	Float	Resulting rate if price is within the range defined. The volume selected at a certain level is used if last trade price is equal or smaller than current level and larger than the next level. Prices must be decreasing. *Accepted values: 0..1 where 1 corresponds to 100% participation.*
20814	=> ParticipationPriceLevel	Price	Price for this level. Mandatory for all levels except for last one, where it should be omitted. *Accepted values: 0..N, respecting Security`s MinPriceIncrement.*
20815	LastPriceMaxPercentVar	Percentage	Robot limits the price of sent orders to a percentage calculated over the last trade price of the traded security (The last close price is used if it is unavailable) Values should be 0 or more. A value of 1.5 indicates 1.5 % over the reference price. If both LastPriceMaxIncVar (20819) and LastPriceMaxPercentVar (20815) are supplied, only LastPriceMaxIncVar (20819) is kept. **Caption in en-US:** Take px limit (% from last) **Caption in pt-BR:** Limite p/ tomar (% últ)
20816	AskBidMaxPercentVar	Percentage	Robot limits the price of sent orders to a percentage of the bid or ask price (bid if placing a buy offer, ask if placing a sell offer) Values should be 0 or more. A value of 1.5 indicates 1.5 % over the reference price. **Caption in en-US:** Take px lim. (% from bid/ask) **Caption in pt-BR:** Limite p/ tomar (% bid/ask)
20817	PlacePxEstimation	Price	Price at which robot will place an offer, only informed if price is calculated correctly and strategy is single leg. *Not used in current implementation.*
20818	LegPlacePxEstimation	Price	Price at which robot will place an offer, only informed if price is calculated correctly and strategy is multi leg. *Not used in current implementation.*
20819	LastPriceMaxIncVar	Price	Robot limits the price of sent orders to a difference calculated over the last trade price of the traded security (The last close price is used if it is unavailable). If both LastPriceMaxIncVar (20819) and LastPriceMaxPercentVar (20815) are supplied, only LastPriceMaxIncVar (20819) is kept.

			Caption in en-US: Take px limit ($ from last) **Caption in pt-BR:** Limite p/ tomar ($ últ)
20836	StopTriggerSpread	Float	Defines a stop coefficient. If the market coefficient reaches a value equal or 'worst' than this value, Robot will automatically replace the 'Selected Coefficient' with the value typed in 'StopSendSpread'. **Caption in en-US:** Trigger ratio / Trigger difference **Caption in pt-BR:** Razão disp / Diferença disp
20837	StopSendSpread	Float	The new assigned coefficient if market reaches StopTriggerSpread **Caption in en-US:** Stop ratio / Stop difference **Caption in pt-BR:** Razão stop / Diferença stop
20840	WouldPx	Price	Everytime a counteroffer is created at this price, Robot will launch a sniper order with the remainning leftover quantity to execute, marked so that all the quantity that does not execute is cancelled automatically by the Exchange. The total quantity executed by this method is configured on field 'Would\conclusion qty'. The sent order, if executed, may exceed the participation set in field 'Max. % (lot qty)'. The quantity executed by this method is not used when calculating the total volume executed by the order. **Caption in en-US:** Would\conc. px
20841	WouldQty	Qty	Maximum quantity to execute if 'Would\conc. px' is reached. Leave it blank to execute all the order's quantity. This quantity is never reset and the would part won't execute anymore if all quantity configured on this field is filled. **Caption in en-US:** Would\conclusion qty
20842	WouldBestOffQty	Qty	If filled, serts the Would order as a Best Offer above the best offer and not as a Sniper, if thjis price is inside the defined Would Price. **Caption in en-US:** Would best-offer qty **Caption in pt-BR:** Qtd would best-offer
20843	WouldQtyReset	Boolean	If active, resets the executed would quantity back to zero, allowing the quantity configured in 'Would/conclusion qty' to be executed again. **Caption in en-US:** Reset would/concl. Qty **Caption in pt-BR:** Reset. qtd would/concl.

4.2 Tags supported on all order creation messages

Tags below are supported on all Algorithm creation messages, NewOrderSingle <D>, NewOrderMultiLeg <AB> and OrderCancelReplaceRequest <G>.

Tag	Name	Req.	Type	Repl	Remarks
150	ExecType	Yes	char	N	If informed, specifies that an order should be placed in suspended state. Accepted values: 0 – Suspended Supported on NewOrderSingle <D>, NewOrderMultiLeg <AB> and OrderCancelReplaceRequest <G>
142	SenderLocationID				The IP address of the machine of the operator originating the order.
453	NoPartyIDs	No	Int	N	Number of PartyID entries.
→ 448	PartyID	Cond	String	N	Party identifier/code, as defined by PartyRole (452).
→ 447	PartyIDSource	Cond	Int	N	Accepted values: D – Propertary/Custom code
→ 452	PartyRole	Cond	Char	N	Accepted values: 5 – Investor ID – Only necessary if PnT DSA Server is matching the informed Investor ID with it's local database

4.3 NewOrderSingle (D)

The NewOrderSingle (D), also known as Order, is used by the client application to send a new strategy order to Fast Trader for strategies that work in only one leg. The received order is validated and then sent to the Fast Trader Algo Server. Below we show a more detailed view of the fields and accepted values for each strategy support with this type of message.

Fields that may be replaced/changed on a subsequent OrderCancelReplaceRequest (G) are market with 'Y' on the column 'Repl'. All strategy fields must be included on the replace request, even the fixed ones.

4.3.1 VWAP (1)

To create VWAP orders the following fields take part in the message:

Tag	Name	Required	Type	Repl (Replace)	Remarks
35	MsgType	Yes	String	-	NewOrderSingle (D)
847	TargetStrategy	Yes	Int	N	The Strategy to be used: 1 - VWAP
1	Account	Yes	String	N	Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char.
11	ClOrdID	Yes	String	-	Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters.
37	OrderID	No	String	N	Buy side may send it's own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form 'dsa.###'
21	HandlInst	Yes	Int	N	Order Handling Instruction. Accepted values: 4 – AlgoOrder
40	OrdType	Yes	Int	Y	Order type. Accepted values: 1 – Market 2 – Limit
44	Price	Conditional	Price (Float)	Y	Price per share or contract. Required when order type is Limit, should not be sent if OrderType is Market. Indicates the maximum or minimum price the algo can execute orders in. If market is beyond the specified limit It does not send offers to the exchange waiting for a good price. *Accepted values: 0..N, respecting Security`s MinPriceIncrement.*
54	Side	Yes	char	N	Order side. Accepted values: 1 – Buy 2 – Sell
55	Symbol	Yes	String	N	The symbol of the traded instrument in B3 Exchange's Symbol format. As in PETR4, VALE3, BOVA11, INDM22, DOLM22, SLCM22.
207	Security Exchange	No	String	N	Market used to help identify a security.

38	OrderQty	Conditional	Qty (Float)	Y	Ordered quantity of shares or contracts. Required if CashOrdQty not set. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
152	CashOrdQty	Conditional	Qty (Float)	Y	Notional Value of the order. The order quantity will vary with the current market conditions. It is required if OrderQty is not set. *Accepted values: 1..N, in security's currency (Usually BRL, R$)*
210	MaxShow	No	Qty (Float)	Y	Maximum quantity (e.g. number of shares) within an order to be shown to other customers. Must be 5x the lot size. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
59	TimeInForce	No	char	Y	Specifies order time limit. Default value is Day when not specified. Accepted values: 0 – Day 6 – Good Till Date
60	TransactTime	Yes	UTCTimestamp	Y	Date and time when order was created by client. UTC format.
126	ExpireTime	Conditional	UTCTimestamp	Y	Time when order is no longer valid. Its Required if TimeInForce = 6. Only sets the time of day when order will end.
168	EffectiveTime	No	UTCTimestamp	Y	Order start time. If not sent it will be set to first valid time. (market open time)
847	TargetStrategy	Yes	Int	N	The Strategy to be used: 1 – VWAP
58	Text	No	String	Y	Free text, will be shown on ticket for Algorithm supervisor but will not be returned on ExecutionReport as this field is used for other purposes.
20768	CountCross Orders	No	Boolean	Y	If true, cross orders are added to calculate total market volume. Defaults to False. **en-US name:** Sum cross trades
20811	AcumulateOut OfPriceLimit	No	Boolean	Y	When true, trades with a 'worst' price (above for buying operations or below for selling operations) than the limit price are not summed to the total market volume/quantity. Defaults to True **en-US name:** Sum trades out of $ lim
20769	BidAskOn TheBook	No	Boolean	Y	Defines if the strategy should place a bid or ask or take/trade when price conditions are met. Placing bid/ask is specially recommended for less liquid symbols. (Optional). Defaults to True.

				en-US name: Place bid/ask
20770	Force Completion	No	Boolean	Y	When active, all the specified quantity will execute, even if the selected strategy does not have favorable market conditions during its configured interval. On the other hand, this option is bound to the configured 'Price limit'. That is, if 'Force execution' is on and a 'Price limit' is set, the specified quantity will not execute if it violates the Price Limit. Defaults to True. en-US name: Force execution
20771	MaxReplaces	No	int	Y	Maximum number of replacements for each execution. If this value is exceeded, a warning is shown to the user. Defaults to 100. en-US name: Replacement alert
20772	OfferInterval	No	Float	Y	Interval in seconds between replaces of places offers. The configured interval is waited to reposition the offer on the new top of book. If the order is taken, it is replaced immediately, ignoring any remaining time. If the strategy's period passes and the strategy becomes late, Robot will take an existing offer from the market, ignoring any configured interval. Configuring this value for 5 or more seconds is recommended to avoid replacements in excess of sent orders. If the interval configured is too short, resulting in a calculated quantity that is below the minimum round lot, Robot will place a bid/ask or take the round lot quantity in factors of this interval. On the T-WAP strategy, Robot will always place a bid/ask with the minimum round lot size. For an example: An order with total quantity 100.00 configured to execute in 125 minutes with an interval of 5 seconds: 125 * 60 / 5 results in 1.500 periods. As 100.000 / 1.500 = 66,66, which is less than the round lot of 100, Robot will replace the places bid/ask in intervals alternating from 5 s and 10 s. en-US name: Interval (s)
20774	IgnoredQuantity	No	Qty (Float)	Y	This quantity is ignored the book when calculating the bid/ask placing price. Useful to avoid that Robot's price is manipulated by other Robots. Defaults to 0. en-US name: Ignored qty.
20775	MaxParticipation Rate	No	Float	Y	Maximum accepted participation limits, according to quantity of configured symbol traded on market. Avoid using values that are too near for minimum and maximum

					percentages, as this will make Robot miss price opportunities and make it more difficult for it to place bid/ask. Default: Empty. Accepts values between 0.00 and 1.00. Must be bigger than MinParticipationRate. **en-US name:** Max. % (lot qty)
20776	MinParticipation Rate	No	Float	Y	Minimum accepted participation limits, according to quantity of configured symbol traded on market. Avoid using values that are too near for minimum and maximum percentages, as this will make Robot miss price opportunities and make it more difficult for it to place bid/ask. Default: Empty. Accepts values between 0.00 and 1.00. Must be bigger than MaxParticipationRate. **en-US name:** Min. % (lot qty)
20810	ParticipateOwn Volume	No	Boolean	Y	If checked, the volume executed by the own strategy is added to calculate the market executed volume. Defaults to true. **en-US name:** Participate own volume
20811	AcumulateOut OfPriceLimit	No	Boolean	Y	Robot limits the price of sent orders to a percentage calculated over the last trade price of the traded security (The last close price is used if it is unavailable). Accepted values: 0 or greater. **en-US name:** Take px limit (% from last)
20815	LastPriceMax PercentVar	No	Percentage	Y	Accepted values: 0 or greater
20816	AskBidMax PercentVar	No	Percentage	Y	Robot limits the price of sent orders to a price difference calculated over the last trade price of the traded security (The last close price is used if last price is unavailable). Accepted values: Any, above or below 0. (Optional). **en-US name:** Take px limit ($ from last)
20819	LastPriceMax IncVar	No	Price	Y	If true, cross orders are added to calculate total market volume. Defaults to False. **en-US name:** Sum cross trades

20840	WouldPx	No	Price	Y	Everytime a counteroffer is created at this price, Robot will launch a sniper order with the remainning leftover quantity to execute, marked so that all the quantity that does not execute is cancelled automatically by the Exchange. The total quantity executed by this method is configured on field 'Would\conclusion qty'. The sent order, if executed, may exceed the participation set in field 'Max. % (lot qty)'. The quantity executed by this method is not used when calculating the total volume executed by the order. **Caption in en-US:** Would\conc. px
20841	WouldQty	No	Qty	Y	Maximum quantity to execute if 'Would\conc. px' is reached. Leave it blank to execute all the order's quantity. This quantity is never reset and the would part won't execute anymore if all quantity configured on this field is filled. **Caption in en-US:** Would\conclusion qty
20842	WouldBestOffQty	No	Qty	Y	If filled, serts the Would order as a Best Offer above the best offer and not as a Sniper, if thjis price is inside the defined Would Price. **Caption in en-US:** Would best-offer qty **Caption in pt-BR:** Qtd would best-offer
20843	WouldQtyReset	No	Boolean	Y	If active, resets the executed would quantity back to zero, allowing the quantity configured in 'Would/conclusion qty' to be executed again. **Caption in en-US:** Reset would/concl. Qty **Caption in pt-BR:** Reset. qtd would/concl.
5149	UserMemo	No	String	Y	If supplied, is copied on orders sent to Exchange on field 5149. **Caption in en-US:** Sent to Memo (5149) **Caption in pt-BR:** Env p/ Memo (5149)

☐ Field added to FIX specification

Message example:

8=FIX.4.4|9=151|35=D|52=20130715-12:40:45.324|1=10|11=20130715094030|21=4|38=1000|40=2|44=30|54=2|55=PETR4|59=0|60=20130715-12:40:458|847=1|116=plugntrade|5149=Teste memo|20770=Y

8=FIX.4.4|9=151|35=G|52=20130715-12:40:45.324|1=10|11=a|21=4|38=1000|40=2|44=30|54=2|55=PETR4|59=0|60=20130715-12:40:458|847=1|116=plugntrade|5149=Teste memo 2|20770=Y|37=dsa.137|41=20130715094030

BeginString=FIX.4.4 BodyLength=151 MsgType=NewOrderSingle SendingTime=2013-07-15 12:40:45.324 Account=10 ClOrdID=20130715094030 HandlInst=4 OrderQty=1000 OrdType=Limit Price=30 Side=Sell Symbol=PETR4 TimeInForce=Day TransactTime=2013-07-15 12:40:45.000 TargetStrategy=1 OnBehalfOfSubID=plugntrade 5149=Teste memo 20770=Y

BeginString=FIX.4.4 BodyLength=151 MsgType=OrderCancelReplaceRequest SendingTime=2013-07-15 12:40:45.324 Account=10 ClOrdID=a HandlInst=4 OrderQty=1000 OrdType=Limit Price=30 Side=Sell Symbol=PETR4 TimeInForce=Day TransactTime=2013-07-15 12:40:45.000 TargetStrategy=1 OnBehalfOfSubID=plugntrade 5149=Teste memo 20770=Y OrderID=dsa.137 OrigClOrdID=20130715094030

4.3.2   TWAP (1000)

To create VWAP orders the following fields take part in the message:

Tag	Name	Required	Type	Repl	Remarks
847	TargetStrategy	Yes	UTCTimestamp	N	The Strategy to be used: 1000 – TWAP
1	Account	Yes	String	N	Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char.
11	ClOrdID	Yes	String	-	Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters.
37	OrderID	No	String	N	Buy side may send it's own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form 'dsa.###'

21	HandlInst	Yes	Int	N	Order Handling Instruction. Accepted values: 4 – AlgoOrder
40	OrdType	Yes	Int	Y	Order type. Accepted values: 1 – Market 2 – Limit
44	Price	Conditional	Price (Float)	Y	Price per share or contract. Required when order type is Limit, should not be sent if OrderType is Market. Indicates the maximum or minimum price the algo can execute orders in. If market is beyond the specified limit It does not send offers to the exchange waiting for a good price.
54	Side	Yes	Int	N	Order side. Accepted values: 1 – Buy 2 – Sell
55	Symbol	Yes	String	N	The symbol of the traded instrument in B3 Exchange's Symbol format. As in PETR4, VALE3, BOVA11, INDM22, DOLM22, SLCM22.
207	Security Exchange	No	String	N	Market used to help identify a security.
38	OrderQty	Conditional	Qty (Float)	Y	Ordered quantity of shares or contracts. Required if CashOrdQty not set. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
152	CashOrdQty	Conditional	Qty (Float)	Y	Notional Value of the order. The order quantity will vary with the current market conditions. It is required if OrderQty is not set. *Accepted values: 1..N, in security's currency (Usually BRL, R$)*
210	MaxShow	No	Qty (Float)	Y	Maximum quantity (e.g. number of shares) within an order to be shown to other customers. Must be 5x the lot size. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
59	TimeInForce	No	char	Y	Specifies order time limit. Default value is Day when not specified. Accepted values: 0 – Day 6 – Good Till Date
60	TransactTime	Yes	String	Y	Date and time when order was created by client. UTC format.
168	EffectiveTime	No	UTCTimestamp	Y	Order start time. If not sent it will be set to first valid time. (market open time)

126	ExpireTime	Conditional	char	Y	Time when order is no longer valid. Its Required if TimeInForce = 6. Only sets the time of day when order will end.
20768	CountCrossOrders	No	Boolean	Y	If true, cross orders are added to calculate total market volume. Defaults to False. **en-US name:** Sum cross trades
20811	AcumulateOut OfPriceLimit	No	Int	Y	When true, trades with a 'worst' price (above for buying operations or below for selling operations) than the limit price are not summed to the total market volume/quantity. Defaults to True **en-US name:** Ignore trades out of $ lim
20769	BidAskOnTheBook	No	String	Y	Defines if the strategy should place a bid or ask or take/trade when price conditions are met. Placing bid/ask is specially recommended for less liquid symbols. (Optional). Defaults to True. **en-US name:** Place bid/ask
20770	ForceCompletion	No	Boolean	Y	When active, all the specified quantity will execute, even if the selected strategy does not have favorable market conditions during its configured interval. On the other hand, this option is bound to the configured 'Price limit'. That is, if 'Force execution' is on and a 'Price limit' is set, the specified quantity will not execute if it violates the Price Limit. Defaults to True. **en-US name:** Force execution
20771	MaxReplaces	No	Boolean	Y	Maximum number of replacements for each execution. If this value is exceeded, a warning is shown to the user. Defaults to 100. **en-US name:** Replacement alert
20772	OfferInterval	No	Boolean	Y	Interval in seconds between replaces of places offers. The configured interval is waited to reposition the offer on the new top of book. If the order is taken, it is replaced immediately, ignoring any remaining time. If the strategy's period passes and the strategy becomes late, Robot will take an existing offer from the market, ignoring any configured interval. Configuring this value for 5 or more seconds is recommended to avoid

					replacements in excess of sent orders. If the interval configured is too short, resulting in a calculated quantity that is below the minimum round lot, Robot will place a bid/ask or take the round lot quantity in factors of this interval. On the T-WAP strategy, Robot will always place a bid/ask with the minimum round lot size. For an example: An order with total quantity 100.00 configured to execute in 125 minutes with an interval of 5 seconds: 125 * 60 / 5 results in 1.500 periods. As 100.000 / 1.500 = 66,66, which is less than the round lot of 100, Robot will replace the places bid/ask in intervals alternating from 5 s and 10 s. **en-US name:** Interval (s)
20774	IgnoredQuantity	No	Boolean	Y	This quantity is ignored the book when calculating the bid/ask placing price. Useful to avoid that Robot's price is manipulated by other Robots. Defaults to 0. **en-US name:** Ignored qty.
20775	MaxParticipationRate	No	int	Y	Maximum accepted participation limits, according to quantity of configured symbol traded on market. Avoid using values that are too near for minimum and maximum percentages, as this will make Robot miss price opportunities and make it more difficult for it to place bid/ask. Default: Empty. Accepts values between 0.00 and 1.00. Must be bigger than MinParticipationRate. **en-US name:** Max. % (lot qty)
20776	MinParticipationRate	No	Float	Y	Minimum accepted participation limits, according to quantity of configured symbol traded on market. Avoid using values that are too near for minimum and maximum percentages, as this will make Robot miss price opportunities and make it more difficult for it to place bid/ask. Default: Empty. Accepts values between 0.00 and 1.00. Must be bigger than MaxParticipationRate. **en-US name:** Min. % (lot qty)
20810	Participate OwnVolume	No	Qty (Float)	Y	If checked, the volume executed by the own strategy is added to calculate the market executed volume. Defaults to true.

				en-US name: Participate own volume
20815	LastPriceMax PercentVar	No	Float	Y	Robot limits the price of sent orders to a percentage calculated over the last trade price of the traded security (The last close price is used if it is unavailable). Accepted values: 0 or greater. **en-US name:** Take px limit (% from last)
20816	AskBidMax PercentVar	No	Float	Y	Accepted values: 0 or greater
20819	LastPriceMaxIncVar	No	Boolean	Y	Robot limits the price of sent orders to a price difference calculated over the last trade price of the traded security (The last close price is used if last price is unavailable). Accepted values: Any, above or below 0. (Optional). **en-US name:** Take px limit ($ from last)
20840	WouldPx	No	Price	Y	Everytime a counteroffer is created at this price, Robot will launch a sniper order with the remainning leftover quantity to execute, marked so that all the quantity that does not execute is cancelled automatically by the Exchange. The total quantity executed by this method is configured on field 'Would\conclusion qty'. The sent order, if executed, may exceed the participation set in field 'Max. % (lot qty)'. The quantity executed by this method is not used when calculating the total volume executed by the order. **Caption in en-US:** Would\conc. px
20841	WouldQty	No	Qty	Y	Maximum quantity to execute if 'Would\conc. px' is reached. Leave it blank to execute all the order's quantity. This quantity is never reset and the would part won't execute anymore if all quantity configured on this field is filled. **Caption in en-US:** Would\conclusion qty
20842	WouldBestOffQty	No	Qty	Y	If filled, serts the Would order as a Best Offer above the best offer and not as a Sniper, if thjis price is inside the defined Would Price. **Caption in en-US:** Would best-offer qty

				Caption in pt-BR: Qtd would best-offer
20843	WouldQtyReset	No	Boolean	Y	If active, resets the executed would quantity back to zero, allowing the quantity configured in 'Would/conclusion qty' to be executed again. **Caption in en-US:** Reset would/concl. Qty **Caption in pt-BR:** Reset. qtd would/concl.

☐ Field Added to FIX specification

4.3.3   Volume Participation (2)

To create Volume Participation orders the following fields take part in the message:

Tag	Name	Required	Repl	Remarks
1	Account	Yes	N	Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char.
11	ClOrdID	Yes	-	Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters.
37	OrderID	No	N	Buy side may send it's own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form 'dsa.###'
21	HandlInst	Yes	N	Order Handling Instruction. Accepted values: 4 – AlgoOrder
38	OrderQty	Conditional	Y	Ordered quantity of shares or contracts. Required if CashOrdQty not set. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
40	OrdType	Yes	Y	Order type. Accepted values: 1 – Market 2 – Limit
44	Price	Conditional	Y	Price per share or contract. Required when order type is Limit, should not be sent if OrderType is Market. Indicates the maximum or minimum price the algo can

				execute orders in. If market is beyond the specified limit It does not send offers to the exchange waiting for a good price. *Accepted values: 1..N, in security's currency (Usually BRL, R$)*
54	Side	Yes	N	Order side. Accepted values: 1 – Buy 2 – Sell
55	Symbol	Yes	N	The symbol of the traded instrument.
207	Security Exchange	No	N	Market used to help identify a security.
59	TimeInForce	No	Y	Specifies order time limit. Default value is Day when not specified. Accepted values: 0 – Day 6 – Good Till Date
60	TransactTime	Yes	Y	Date and time when order was created by client. UTC format.
126	ExpireTime	Conditional	Y	Time when order is no longer valid. Its Required if TimeInForce = 6. Only sets the time of day when order will end.
152	CashOrdQty	Conditional	Y	Notional Value of the order. The order quantity will vary with the current market conditions. It is required if OrderQty is not set. *Accepted values: 1..N, in security's currency (Usually BRL, R$)*
168	EffectiveTime	No	Y	Order start time. If not sent it will be set to first valid time. (market open time)
210	MaxShow	No	Y	Maximum quantity (e.g. number of shares) within an order to be shown to other customers. Must be 5x the lot size.
847	TargetStrategy	Yes	N	The Strategy to be used: 2 – Volume Participation
20768	CountCrossOrders	No	Y	Defaults to False
20769	BidAskOnTheBook	No	Y	Defaults to True
20771	MaxReplaces	No	Y	Defaults to 100
20774	IgnoredQuantity	No	Y	Defaults to 0

20775	MaxParticipationRate	Yes	Y	Default: 0. Accepts values between 0.00 and 1.00. Must be bigger than MinParticipationRate
20776	MinParticipationRate	Yes	Y	Default: 0. Accepts values between 0.00 and 1.00. Must be smaller than MaxParticipationRate
20810	ParticipateOwnVolume	No	Y	If checked, the volume executed by the own strategy is added to calculate the market executed volume . Defaults to true. pt-BR name: Participar próp. volume en-US name: Iceberg qty (exchange)
20811	AcumulateOutOfPriceLimit	No	Y	Defaults to true.
20815	LastPriceMaxPercentVar	No	Y	Accepted values: 0 or greater
20816	AskBidMaxPercentVar	No	Y	Accepted values: 0 or greater
20819	LastPriceMaxIncVar	No	Y	Accepted values: Any
~~20772~~	~~OfferInterval~~	~~No~~	~~Y~~	~~Never should be sent to a Volume Participation~~
20840	WouldPx	No	Y	Everytime a counteroffer is created at this price, Robot will launch a sniper order with the remainning leftover quantity to execute, marked so that all the quantity that does not execute is cancelled automatically by the Exchange. The total quantity executed by this method is configured on field 'Would\conclusion qty'. The sent order, if executed, may exceed the participation set in field 'Max. % (lot qty)'. The quantity executed by this method is not used when calculating the total volume executed by the order. **Caption in en-US:** Would\conc. px
20841	WouldQty	No	Y	Maximum quantity to execute if 'Would\conc. px' is reached. Leave it blank to execute all the order's quantity. This quantity is never reset and the would part won't execute anymore if all quantity configured on this field is filled. **Caption in en-US:** Would\conclusion qty
20843	WouldQtyReset	No	Y	If active, resets the executed would quantity back to zero, allowing the quantity configured in 'Would/conclusion qty' to be executed again.

				Caption in en-US: Reset would/concl. Qty **Caption in pt-BR:** Reset. qtd would/concl.

▢ Field Added to FIX specification

Message example

8=FIX.4.49=17435=D34=6749=TESTER152=20130715-
12:52:29.06556=PNT_DSA1=35411=2013071509520621=438=100040=244=2854=155=PETR459=060=20130715-
12:52:29847=220775=0.1820776=0.1210=029

BeginString=FIX.4.4 BodyLength=174 MsgType=NewOrderSingle MsgSeqNum=67 SenderCompID=TESTER1 SendingTime=15/07/2013 12:52:29
TargetCompID=PNT_DSA Account=354 ClOrdID=20130715095206 HandlInst=Algo OrderQty=1000 OrdType=Limit Price=28 Side=Buy Symbol=PETR4
TimeInForce=Day TransactTime=15/07/2013 12:52:29 TargetStrategy=2 MaxParticipationRate=0.18 MinParticipationRate=0.12 CheckSum=29

4.3.4   Sniper (1011)

To create Volume Sniper orders the following fields take part in the message:

Tag	Name	Required	Repl	Remarks
1	Account	Yes	N	Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char.
11	ClOrdID	Yes	-	Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters.
37	OrderID	No	N	Buy side may send it's own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form 'dsa.###'
21	HandlInst	Yes	N	Order Handling Instruction. Accepted values: 4 – AlgoOrder

38	OrderQty	Conditional	Y	Ordered quantity of shares or contracts. Required if CashOrdQty not set. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
40	OrdType	Yes	Y	Order type. Accepted values: 2 – Limit
44	Price	Yes	Y	Price per share or contract. The Algo will monitor the market and only send orders when price limit specified is available for trade. *Accepted values: 1..N, in security's currency (Usually BRL, R$)*
54	Side	Yes	N	Order side. Accepted values: 1 – Buy 2 – Sell
55	Symbol	Yes	N	The symbol of the traded instrument.
207	Security Exchange	No	N	Market used to help identify a security.
59	TimeInForce	No	Y	Specifies order time limit. Default value is Day when not specified. Accepted values: 0 – Day 6 – Good Till Date
60	TransactTime	Yes	Y	Date and time when order was created by client. UTC format.
432	ExpireDate	No	Y	Order expiration date. UTC format. If value is different than current day, order will remain active on the server on next trading sessions. Check retuned value on the 1st ExecutionReport (u) with ExecType=New, usually our RobotServer will only allow the order to execute for 30 days and won't allow this value to be modified after insertion.
126	ExpireTime	Conditional	Y	Time when order is no longer valid. Its Required if TimeInForce = 6. Only sets the time of day when order will end.
135	OfferSize	No	Y	Maximum number of shares the algo server will send to the exchange at a time. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
152	CashOrdQty	Conditional	Y	Notional Value of the order. The order quantity will vary with the current market conditions. It is required if OrderQty is not set. *Accepted values: 1..N, in security's currency (Usually BRL, R$)*
168	EffectiveTime	No	Y	Order start time. If not sent it will be set to first valid time. (market open time)

847	TargetStrategy	Yes	N	The Strategy to be used: 1011 – Sniper
20774	IgnoredQuantity	No	Y	Defaults to 0
20815	LastPriceMaxPercentVar	No	Y	Accepted values: 0 or greater
20816	AskBidMaxPercentVar	No	Y	Accepted values: 0 or greater
20819	LastPriceMaxIncVar	No	Y	Accepted values: Any

☐ Field Added to FIX specification

4.3.5 Best-Offer (1009)

To create Best-Offer orders the following fields take part in the message:

Tag	Name	Required	Repl	Remarks
1	Account	Yes	N	Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char.
11	ClOrdID	Yes	-	Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters.
37	OrderID	No	N	Buy side may send it's own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form 'dsa.###'
21	HandlInst	Yes	N	Order Handling Instruction. Accepted values: 4 – AlgoOrder
38	OrderQty	Conditional	Y	Ordered quantity of shares or contracts. Required if CashOrdQty not set. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*

40	OrdType	Yes	Y	Order type. Accepted values: 1 – Market 2 – Limit
44	Price	Conditional	Y	Price per share or contract. Required if OrdType is 2 (limit). The Algo will monitor the market and won´t go beyond the set price. In those cases it will keep its offer at the price limit specified. *Accepted values: 1..N, in security's currency (Usually BRL, R$)*
54	Side	Yes	Y	Order side. Accepted values: 1 – Buy 2 – Sell
55	Symbol	Yes	Y	The symbol of the traded instrument.
207	Security Exchange	No	N	Market used to help identify a security.
59	TimeInForce	No	Y	Specifies order time limit. Default value is Day when not specified. Accepted values: 0 – Day 6 – Good Till Date
60	TransactTime	Yes	Y	Date and time when order was created by client. UTC format.
432	ExpireDate	No	Y	Order expiration date. UTC format. If value is different than current day, order will remain active on the server on next trading sessions. Check retuned value on the 1st ExecutionReport (u) with ExecType=New, usually our RobotServer will only allow the order to execute for 30 days and won't allow this value to be modified after insertion.
126	ExpireTime	Conditional	Y	Time when order is no longer valid. Its Required if TimeInForce = 6. Only sets the time of day when order will end.
135	OfferSize	Yes	Y	Maximum number of shares the algo server will send to the exchange at a time. Mandatory in Best Offer Strategy. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
152	CashOrdQty	Conditional	Y	Notional Value of the order. The order quantity will vary with the current market conditions. It is required if OrderQty is not set. *Accepted values: 1..N, in security's currency (Usually BRL, R$)*
168	EffectiveTime	No	Y	Order start time. If not sent it will be set to first valid time. (market open time)

210	MaxShow	No	Y	Maximum quantity (e.g. number of shares) within an order to be shown to other customers. Must be 5x the lot size. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
847	TargetStrategy	Yes	N	The Strategy to be used: 1009 – Best Offer
20771	MaxReplaces	No	Y	Defaults to 100
20772	OfferInterval	No	Y	If not supplied, defaults to 5. Value is in seconds and can range from 0 to N. Passing 0 may lead to an excess of replacements, which could be taxed by BM&F Bovespa exchange. With 0 configured, all top of book price changes will generate a new order/replace by the algo – Given the size of the offer is bigger than "Ignored Quantity" field.
20774	IgnoredQuantity	No	Y	Defaults to 0. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*

☐ Field Added to FIX specification

Message example:

8=FIX.4.49=16235=D34=2849=TESTER152=20130715-
12:35:46.87856=PNT_DSA1=1011=2013071509264821=438=100040=244=3054=155=PETR459=060=20130715-12:35:46135=500847=100910=221

BeginString=FIX.4.4   BodyLength=162   MsgType=NewOrderSingle   MsgSeqNum=28   SenderCompID=TESTER1   SendingTime=15/07/2013 12:35:46
TargetCompID=PNT_DSA   Account=10   ClOrdID=20130715092648   HandlInst=Algo   OrderQty=1000   OrdType=Limit   Price=30   Side=Buy   Symbol=PETR4
TimeInForce=Day   TransactTime=15/07/2013 12:35:46   OfferSize=500   TargetStrategy=1009   CheckSum=221

4.3.6   Best-Offer/Sniper (2009)

To create Best-Offer/Sniper orders the following fields take part in the message:

Tag	Name	Required	Repl	Remarks
1	Account	Yes	N	Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char.
11	ClOrdID	Yes	-	Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters.
37	OrderID	No	N	Buy side may send it's own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form 'dsa.###'
21	HandlInst	Yes	N	Order Handling Instruction. Accepted values: 4 – AlgoOrder
847	TargetStrategy	Yes	N	The Strategy to be used: 2009 – Best Offer / Sniper
38	OrderQty	Conditional	Y	Ordered quantity of shares or contracts. Required if CashOrdQty not set. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
40	OrdType	Yes	Y	Order type. Accepted values: 1 – Market 2 – Limit
44	Price	Conditional	Y	Price per share or contract or Best Offer sub-strategy. Required if OrdType is 2 (limit). The Algo will monitor the market and won´t go beyond the set price. In those cases it will keep its offer at the price limit specified. *Accepted values: 1..N, in security's currency (Usually BRL, R$)*
640	Price2	Yes	Y	Price per share or contract of Sniper sub-strategy. Indicates the price that will be monitored in the market. Will send offers in that price if an offer shows up at the market in that value. *Accepted values: 1..N, in security's currency (Usually BRL, R$)*
54	Side	Yes	N	Order side. Accepted values: 1 – Buy 2 – Sell
55	Symbol	Yes	Y	The symbol of the traded instrument.
207	Security Exchange	No	N	Market used to help identify a security.

59	TimeInForce	No	Y	Specifies order time limit. Default value is Day when not specified. Accepted values: 0 – Day 6 – Good Till Date
60	TransactTime	Yes	Y	Date and time when order was created by client. UTC format.
432	ExpireDate	No	Y	Order expiration date. UTC format. If value is different than current day, order will remain active on the server on next trading sessions. Check retuned value on the 1st ExecutionReport (u) with ExecType=New, usually our RobotServer will only allow the order to execute for 30 days and won't allow this value to be modified after insertion.
126	ExpireTime	Conditional	Y	Time when order is no longer valid. Its Required if TimeInForce = 6. Only sets the time of day when order will end.
135	OfferSize	No	Y	Maximum number of shares the algo server will send to the exchange at a time. Acts on the Best Offer side of the algo. For the Sniper point of view the algo will execute as much as possible in one order. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
152	CashOrdQty	Conditional	Y	Notional Value of the order. The order quantity will vary with the current market conditions. It is required if OrderQty is not set. *Accepted values: 1..N, in security's currency (Usually BRL, R$)*
168	EffectiveTime	No	Y	Order start time. If not sent it will be set to first valid time. (market open time)
210	MaxShow	No	Y	Maximum quantity (e.g. number of shares) within an order to be shown to other customers. Must be 5x the lot size. Also applies to the Best offer side of the strategy. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
20771	MaxReplaces	No	Y	Defaults to 100
20772	OfferInterval	No	Y	If not supplied, defaults to 5. Value is in seconds and can range from 0 to N. Passing 0 may lead to an excess of replacements, which could be taxed by BM&F Bovespa exchange. With 0 configured, all top of book price changes will generate a new order/replace by the algo – Given the size of the offer is bigger than "Ignored Quantity" field.
20774	IgnoredQuantity	No	Y	Defaults to 0. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*

☐ Field Added to FIX specification

4.3.7   Stop Loss / Start Gain (1014)

To create Stop Loss / Start Gain orders the following fields take part in the message:

Tag	Name	Required	Repl	Remarks
1	Account	Yes	N	Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char.
11	ClOrdID	Yes	-	Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters.
37	OrderID	No	N	Buy side may send it's own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form 'dsa.###'
21	HandlInst	Yes	N	Order Handling Instruction. Accepted values: 4 – AlgoOrder
847	TargetStrategy	Yes	N	The Strategy to be used: 1013 – Stop Loss / Start Gain
38	OrderQty	Conditional	Y	Ordered quantity of shares or contracts. Required if CashOrdQty not set. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
40	OrdType	Yes	Y	Order type. Accepted values: 1 – Market 2 – Limit
54	Side	Yes	N	Order side. Accepted values: 1 – Buy 2 – Sell
55	Symbol	Yes	Y	The symbol of the traded instrument.
207	Security Exchange	No	N	Market used to help identify a security.
59	TimeInForce	No	Y	Specifies order time limit. Default value is Day when not specified. Accepted values: 0 – Day 6 – Good Till Date
60	TransactTime	Yes	Y	Date and time when order was created by client. UTC format.

168	EffectiveTime	No	Y	Order start time. If not sent it will be set to first valid time. (market open time)
126	ExpireTime	Conditional	Y	Time when order is no longer valid. Its Required if TimeInForce = 6. Only sets the time of day when order will end.
~~432~~	~~ExpireDate~~	No	N	Not currently supported. Strategy will execute for multiple days if a different final date is supplied on ExpireTime (126) field, in association with the desired expiration time.
210	MaxShow	No	Y	Maximum quantity (e.g. number of shares) within an order to be shown to other customers. Must be 5x the lot size. Also applies to the Best offer side of the strategy. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.* pt-BR name: Considerar diretos en-US name: Iceberg qty (exchange)
20828	PriceStopLoss	Conditional	Y	Trigger price of the stop order. In sell operations, a sell order (stop) will be sent if the last trade price is equal or lower than this value. In buy operations, it will be the opposite. (Optional if PriceStartGain / 'Start gain trigger ($)' is informed.) en-US name: Stop loss trigger ($) pt-BR name: Disparo do stop loss ($)
20829	PriceSendOrderLoss	Conditional	Y	Price of the order sent if stop loss is triggered. (Mandatory if PriceStopLoss / 'Stop loss trigger ($)' is informed.) en-US name: Stop loss limit ($) pt-BR name: Limite do stop loss ($)
20830	PriceStartGain	Conditional	Y	Trigger price of start gain orders. In sell operations, a (start gain) sell order will be sent if a trade occurs at a price equal or above this value. On buy operations, the opposite occurs. (Optional if 'Stop loss trigger ($)' is informed.) en-US name: Start gain trigger ($) pt-BR name: Disparo do start gain (R$)
20831	PriceSendOrderGain	Conditional	Y	Limit price of the order that will be sent when the start gain is triggered. (Mandatory if PriceStartGain / 'Start gain trigger ($)' is informed.) en-US name: Start gain limit ($) pt-BR name: Limite do start gain ($)
20832	PriceInitOrderLossInc	Conditional	Y	Starting stop loss price. *(Optional, can't be combined with PriceStartGain / 'Start gain trigger ($)'.)*

				en-US name: Trailling stop $ increment pt-BR name: Inicio stop móvel ($)
20833	OrderLossIncMoney	Conditional	Y	Price to increment on the parameters of the stop loss. In a buy operation, if a trade price happens below this value, all stop parameters are subtracted by this value. In a sell order, the opposite will happen. (Mandatory if PriceInitOrderLossInc / 'Inicio stop móvel ($)') en-US name: Trailling stop $ increment pt-BR name: Incremento $ stop móvel
20834	OrderLossIncPerc	Conditional	Y	Price to increment on the parameters of the stop loss. In a buy operation, if a trade price happens below this value, all stop parameters are decreased by this percentage. In a sell order, the opposite will happen. (Mandatory if PriceInitOrderLossInc / 'Inicio stop móvel ($)') en-US name: Trailling stop % increment pt-BR name: Incremento % stop móvel
20771	MaxReplaces	No	Y	Defaults to 100
20774	IgnoredQuantity	No	Y	Defaults to 0. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
20768	CountCrossOrders	No	Y	If checked, cross orders are added to calculate total market volume. Defaults to False. en-US name: Sum cross trades pt-BR name: Considerar diretos

```
       Field Added to FIX specification
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Message example:

Today Order with explicit ExpireTime (126):
9=355|35=D|52=20190820-21:59:55.383|1=1382|11=190820185952cbdde|21=4|22=8|38=200|40=1|44=21.99|54=2|55=PETR4|59=6|60=20190820-18:59:54.649|116=hb|126=20190822-21:00:00.000|207=BVMF|581=39|847=1014|20828=22|20829=21.99|20832=22|20834=1|453=4|448=BVMF|447=D|452=54|448=735|447=D|452=7|448=|447=D|452=36|448=1382|447=D|452=5|10=090

Today Order with no ExpireTime (126):

9=355|35=D|52=20190820-21:59:55.383|1=1382|11=190820185952cbdde|21=4|22=8|38=200|40=1|44=21.99|54=2|55=PETR4|59=6|60=20190820-18:59:54.649|116=hb|207=BVMF|581=39|847=1014|20828=22|20829=21.99|20832=22|20834=1|453=4|448=BVMF|447=D|452=54|448=735|447=D|452=7|448=|447=D|452=36|448=1382|447=D|452=5|10=090

Multiday Order with explicit ExpireTime (126) and ExpireDate (432):
8=FIX.4.4 | 9=355 | 35=D | 52=20190820-21:59:55.383 | 1=1382 | 11=190820185952cbdde | 21=4 | 22=8 | 38=200 | 40=1 | 44=21.99 | 54=2 | 55=PETR4 | 59=6 | 60=20190820-18:59:54.649 | 116=hb | 126=20190822-21:00:00.000 | 207=BVMF | 432=20190822 | 581=39 | 847=1014 | 20828=22 | 20829=21.99 | 20832=22 | 20834=1 | 453=4 | 448=BVMF | 447=D | 452=54 | 448=735 | 447=D | 452=7 | 448= | 447=D | 452=36 | 448=1382 | 447=D | 452=5 | 10=090

BeginString=FIX.4.4 BodyLength=355 MsgType=NewOrderSingle MsgSeqNum=3409 SenderCompID=TESTER SendingTime=2019-08-20 21:59:55.383 TargetCompID=PNT Account=1382 ClOrdID=190820185952cbdde HandlInst=4 SecurityIDSource=ExchangeSymbol OrderQty=200 OrdType=Market Price=21.99 Side=Sell Symbol=PETR4 TimeInForce=GoodTillDate TransactTime=2019-08-20 18:59:54.649 OnBehalfOfSubID=hb ExpireTime=2019-08-22 21:00:00.000 SecurityExchange=BVMF ExpireDate=20190822 581=39 TargetStrategy=1014 20828=22 20829=21.99 20832=22 20834=1 NoPartyIDs=4 PartyID=BVMF PartyIDSource=Proprietary PartyRole=54 PartyID=735 PartyIDSource=Proprietary PartyRole=EnteringFirm PartyID= PartyIDSource=Proprietary PartyRole=EnteringTrader PartyID=1382 PartyIDSource=Proprietary PartyRole=InvestorID CheckSum=90

Multiday Order with no ExpireTime (126) and with ExpireDate (432):
8=FIX.4.4 | 9=355 | 35=D | 52=20190820-21:59:55.383 | 1=1382 | 11=190820185952cbdde | 21=4 | 22=8 | 38=200 | 40=1 | 44=21.99 | 54=2 | 55=PETR4 | 59=6 | 60=20190820-18:59:54.649 | 116=hb | 126=20190822-21:00:00.000 | 207=BVMF | 432=20190822 | 581=39 | 847=1014 | 20828=22 | 20829=21.99 | 20832=22 | 20834=1 | 453=4 | 448=BVMF | 447=D | 452=54 | 448=735 | 447=D | 452=7 | 448= | 447=D | 452=36 | 448=1382 | 447=D | 452=5 | 10=090

BeginString=FIX.4.4 BodyLength=355 MsgType=NewOrderSingle SendingTime=2019-08-20 21:59:55.383 Account=1382 ClOrdID=190820185952cbdde HandlInst=4 SecurityIDSource=ExchangeSymbol OrderQty=200 OrdType=Market Price=21,99 Side=Sell Symbol=PETR4 TimeInForce=GoodTillDate TransactTime=2019-08-20 18:59:54.649 OnBehalfOfSubID=hb SecurityExchange=BVMF ExpireDate=20190822 581=39 TargetStrategy=1014 20828=22 20829=21.99 20832=22 20834=1 NoPartyIDs=4 PartyID=BVMF PartyIDSource=Proprietary PartyRole=54 PartyID=735 PartyIDSource=Proprietary PartyRole=EnteringFirm PartyID= PartyIDSource=Proprietary PartyRole=EnteringTrader PartyID=1382 PartyIDSource=Proprietary PartyRole=InvestorID CheckSum=90

4.3.8 Shortfall (1013)

To create Shortfall orders the following fields take part in the message:

Tag	Name	Required	Type	Repl	Remarks
35	MsgType	Yes	String	N	NewOrderSingle (D)
847	TargetStrategy	Yes	int	N	1013 - Shortfall
1	Account	Yes	String	N	Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char.
11	ClOrdID	Yes	String	-	Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters.
37	OrderID	No	String	N	Buy side may send it's own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form 'dsa.###'
21	HandlInst	Yes	int	N	Order Handling Instruction. Accepted values: 4 – AlgoOrder
38	OrderQty	Conditional	Qty (Float)	Y	Ordered quantity of shares or contracts. Required if CashOrdQty not set. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
40	OrdType	Yes	int	Y	Order type. Accepted values: 1 – Market 2 – Limit
44	~~Price~~	Not allowed	Price (Float)	Y	Do not send this field on this strategy. Send only the price ranges on ParticipationRateLevel
54	Side	Yes	int	Y	Order side. Accepted values: 1 – Buy 2 – Sell
55	Symbol	Yes	String	N	The symbol of the traded instrument.
207	Security Exchange	No	String	N	Market used to help identify a security.
59	TimeInForce	No	int	Y	Specifies order time limit. Default value is Day when not specified. Accepted values: 0 – Day 6 – Good Till Date
60	TransactTime	Yes	UTCTimestamp	Y	Date and time when order was created by client. UTC format.

126	ExpireTime	Conditional	UTCTimestamp	Y	Time when order is no longer valid. Its Required if TimeInForce = 6. Only sets the time of day when order will end.
152	CashOrdQty	Conditional	Qty (Float)	Y	Notional Value of the order. The order quantity will vary with the current market conditions. It is required if OrderQty is not set. *Accepted values: 1..N, in security's currency (Usually BRL, R$)*
168	EffectiveTime	No	UTCTimestamp	Y	Order start time. If not sent it will be set to first valid time. (market open time)
847	TargetStrategy	Yes	int	N	The Strategy to be used: 1013 – Shortfall
20771	MaxReplaces	No	int	Y	Defaults to 100
20772	OfferInterval	No	int	Y	If not supplied, defaults to 5. Value is in seconds and can range from 0 to N. Passing 0 may lead to an excess of replacements, which could be taxed by BM&F Bovespa exchange. With 0 configured, all top of book price changes will generate a new order/replace by the algo – Given the size of the offer is bigger than "Ignored Quantity" field.
20774	IgnoredQuantity	No	Qty (Float)	Y	Defaults to 0
20768	CountCrossOrders	No	Boolean	Y	Defaults to False
20810	ParticipateOwnVolume	No	Boolean	Y	Defaults to True
20811	AcumulateOutOfPriceLimit	No	Boolean	Y	When 'No' is supplied, trades with a 'worst' price (above for buying operations or below for selling operations) than the limite price are not summed to the total market volume/quantity.
20815	LastPriceMaxPercentVar	No	Percentage	Y	Accepted values: 0 or greater
20816	AskBidMaxPercentVar	No	Percentage	Y	Accepted values: 0 or greater
20819	LastPriceMaxIncVar	No	Price	Y	Accepted values: Any
20822	NoParticipationRateLevels	Yes	int	Y	Always >= 2, two levels are always required.
2081	=> ParticipationRateLevel	Yes	Float	Y	Resulting participation rate if price is within the range defined. The volume

| 3 | | | | | selected at a certain level is used if last trade price is equal or smaller than current level and larger than the next level. Prices must be decreasing. Participation is always more than 0 and less than 1. A participation of 10% should be represented as 0.1. |
| 2081 4 | => ParticipationPriceLevel | Yes, unless last level | Price (Float) | Y | Price for this level. |

☐ Field Added to FIX specification

Message example:

Two participation levels, notice that we have two percentagens and a single price level
8=FIX.4.4|9=162|35=D|34=28|49=TESTER1|52=20130715-
12:35:46.878|56=PNT_DSA|1=10|11=20130715092648|21=4|38=1000|40=2|44=30|54=1|55=PETR4|59=0|60=20130715-12:35:46|135=500|847=1013|
20812=2| 20813=20|20814=22.35 | 20813=30 |10=221

BeginString=FIX.4.4 BodyLength=162 MsgType=NewOrderSingle MsgSeqNum=28 SenderCompID=TESTER1 SendingTime=15/07/2013 12:35:46
TargetCompID=PNT_DSA Account=10 ClOrdID=20130715092648 HandlInst=Algo OrderQty=1000 OrdType=Limit Price=30 Side=Buy Symbol=PETR4
TimeInForce=Day TransactTime=15/07/2013 12:35:46 OfferSize=500 TargetStrategy=1013 NoParticipationRateLevels=2 ParticipationRateLevel=20
ParticipationPriceLevel=22.35 ParticipationRateLevel=30 CheckSum=221

Three participation levels, notice that we have three percentagens and two price levels
8=FIX.4.4|9=162|35=D|34=28|49=TESTER1|52=20130715-
12:35:46.878|56=PNT_DSA|1=10|11=20130715092648|21=4|38=1000|40=2|44=30|54=1|55=PETR4|59=0|60=20130715-12:35:46|135=500|847=1013|
20812=3| 20813=20|20814=23.45 | 20813=30|20814=22.35 | 20813=20 |10=221

BeginString=FIX.4.4 BodyLength=162 MsgType=NewOrderSingle MsgSeqNum=28 SenderCompID=TESTER1 SendingTime=15/07/2013 12:35:46
TargetCompID=PNT_DSA Account=10 ClOrdID=20130715092648 HandlInst=Algo OrderQty=1000 OrdType=Limit Price=30 Side=Buy Symbol=PETR4

TimeInForce=Day   TransactTime=15/07/2013 12:35:46   OfferSize=500   TargetStrategy=1013   NoParticipationRateLevels=3   ParticipationRateLevel=20   ParticipationPriceLevel=23.45   ParticipationRateLevel=30   ParticipationPriceLevel=22.35   ParticipationRateLevel=20   CheckSum=221

Examples of valid/invalid NoParticipationRateLevels (20812) repeatings groups:

NoParticipationRateLevels=2 ParticipationRateLevel=20 ParticipationPriceLevel=22.35 ParticipationRateLevel=30	Valid
NoParticipationRateLevels=3 ParticipationRateLevel=20 ParticipationPriceLevel=22.35 ParticipationRateLevel=30 ParticipationPriceLevel=21.35 ParticipationRateLevel=40	Valid
NoParticipationRateLevels=1 ParticipationRateLevel=20 ParticipationPriceLevel=22.35	Invalid, must have 2 items.
NoParticipationRateLevels=2 ParticipationRateLevel=20 ParticipationPriceLevel=22.35 ParticipationRateLevel=30 ParticipationPriceLevel=21.35	Invalid, last level must not have a Price, only a Rate.
NoParticipationRateLevels=3 ParticipationRateLevel=20 ParticipationPriceLevel=22.35 ParticipationRateLevel=30 ParticipationPriceLevel=23.35 ParticipationRateLevel=40	Invalid, prices must always decrease.

4.3.9   Iceberg (1026)

To create Iceberg orders the following fields take part in the message:

Tag	Name	Required	Repl	Remarks

1	Account	Yes	N	Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char.
11	ClOrdID	Yes	-	Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters.
37	OrderID	No	N	Buy side may send it's own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form 'dsa.###'
21	HandlInst	Yes	N	Order Handling Instruction. Accepted values: 4 – AlgoOrder
40	OrdType	Yes	Y	Order type. Accepted values: 1 – Market 2 – Limit
38	OrderQty	Conditional	Y	Ordered quantity of shares or contracts. Required if CashOrdQty not set. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
135	OfferSize	No	Y	Maximum number of shares the algo server will send to the exchange at a time. This is the Robot managed Iceberg quantity. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.* **Caption in en-US:** Iceberg qty (Robot) **Caption in pt-BR:** Lote ap. robô (Iceberg)
210	MaxShow	No	Y	Maximum quantity (e.g. number of shares) within an order to be shown to other customers. This is the Exchange managed Iceberg quantity. To use a value managed by robot, see OfferSize (135) field. *Accepted values: 5..N * RoundLot (500, 600, 700... for BVSP Equities), respecting Security's RoundLot. Minimum of 5x RoundLots is a limitation from the exchange. Orders will be accepted by it and MaxShow effect will be ignored ifj it is not respected. Other values will be rounded.* **Caption in en-US:** Iceberg qty (exchange) **Caption in pt-BR:** Lote ap. bolsa (Iceberg)
44	Price	Conditional	Y	Price per share or contract. Required if OrdType is 2 (limit). The Algo will monitor the market and won´t go beyond the set price. In those cases it will keep its offer at the price limit specified. *Accepted values: 1..N, in security's currency (Usually BRL, R$)*
54	Side	Yes	N	Order side. Accepted values: 1 – Buy 2 – Sell

55	Symbol	Yes	N	The symbol of the traded instrument.
207	Security Exchange	No	N	Market used to help identify a security.
59	TimeInForce	No	Y	Specifies order time limit. Default value is Day when not specified. Accepted values: 0 – Day 6 – Good Till Date
60	TransactTime	Yes	Y	Date and time when order was created by client. UTC format.
432	ExpireDate	No	Y	Order expiration date. UTC format. If value is different than current day, order will remain active on the server on next trading sessions. Check retuned value on the 1st ExecutionReport (u) with ExecType=New, usually our RobotServer will only allow the order to execute for 30 days and won't allow this value to be modified after insertion.
126	ExpireTime	Conditional	Y	Time when order is no longer valid. Its Required if TimeInForce = 6. Only sets the time of day when order will end.
152	CashOrdQty	Conditional	Y	Notional Value of the order. The order quantity will vary with the current market conditions. It is required if OrderQty is not set. *Accepted values: 1..N, in security's currency (Usually BRL, R$)*
168	EffectiveTime	No	Y	Order start time. If not sent it will be set to first valid time. (market open time)
847	TargetStrategy	Yes	N	The Strategy to be used: 1026 - Iceberg
20771	MaxReplaces	No	Y	Defaults to 100
20772	OfferInterval	No	Y	Defaults to 0 if not supplied. Delay to wait until existing order is replaced (quantity is creased) when part of it is taken.
20840	WouldPx	No	Y	Everytime a counteroffer is created at this price, Robot will launch a sniper order with the remaining leftover quantity to execute, marked so that all the quantity that does not execute is cancelled automatically by the Exchange. The total quantity executed by this method is configured on field 'Would\conclusion qty'. The sent order, if executed, may exceed the participation set in field 'Max. % (lot qty)'. The quantity executed by this method is not used when calculating the total volume executed by the order. **Caption in en-US:** Would\conc. px
20841	WouldQty	No	Y	Maximum quantity to execute if 'Would\conc. px' is reached. Leave it blank to execute all the order's quantity. This quantity is never reset and the would part won't execute anymore if all quantity configured on this field is filled.

				Caption in en-US: Would\conclusion qty
20843	WouldQtyReset	No	Y	If active, resets the executed would quantity back to zero, allowing the quantity configured in 'Would/conclusion qty' to be executed again. **Caption in en-US:** Reset would/concl. Qty **Caption in pt-BR:** Reset. qtd would/concl.

☐ Field Added to FIX specification

Message example:

8=FIX.4.49=16235=D34=2849=TESTER152=20130715-
12:35:46.87856=PNT_DSA1=1011=2013071509264821=438=100040=244=3054=155=PETR459=060=20130715-12:35:46135=500847=101310=221

BeginString=FIX.4.4   BodyLength=162   MsgType=NewOrderSingle   MsgSeqNum=28   SenderCompID=TESTER1   SendingTime=15/07/2013 12:35:46
TargetCompID=PNT_DSA   Account=10   ClOrdID=20130715092648   HandlInst=Algo   OrderQty=1000   OrdType=Limit   Price=30   Side=Buy   Symbol=PETR4
TimeInForce=Day   TransactTime=15/07/2013 12:35:46   OfferSize=500   TargetStrategy=1013   CheckSum=221

4.3.10 VWAP – Volume history (1027)

Exactly the same parameters and restrictions as VWAP, but with TargetStrategy (847)=1027. If used, but Robot will use the security's recent volume history to optimize it's operation during the day.

Differente fields:

Tag	Name	Required	Repl	Remarks
35	MsgType	Yes	N	NewOrderSingle (D)
847	TargetStrategy	Yes	N	Use value 1027

4.3.11 Auction Order (1030)

To create Auction Orders the following fields take part in the message:

Tag	Name	Required	Repl	Remarks
1	Account	Yes	N	Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char. Field name: Client (en) / Cliente (pt).
11	ClOrdID	Yes	-	Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters.
37	OrderID	No	N	Buy side may send it's own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form 'dsa.###'
21	HandlInst	Yes	N	Order Handling Instruction. Accepted values: 4 – AlgoOrder
38	OrderQty	Conditional	Y	Ordered quantity of shares or contracts. Required if CashOrdQty not set. Field name: Quantity (en) / Quantidade (pt). *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
40	OrdType	Yes	Y	Order type. Accepted values: 1 – Market 2 – Limit
44	Price	Conditional	Y	Price per share or contract. Required if OrdType is 2 (limit). Orders will be sent to the exchange at this exact price, when informed. Field name: Price limit (en) / Preco limite (pt). *Accepted values: 1..N, in security's currency (Usually BRL, R$)*
54	Side	Yes	N	Order side. Accepted values: 1 – Buy 2 – Sell
55	Symbol	Yes	N	The symbol of the traded instrument. Field name: Symbol (en) / Ativo (pt).
207	Security Exchange	No	N	Market used to help identify a security.

168	EffectiveTime	No	Y	Order start time. If not sent it will be set to first valid time. (market open time). Field name: Start time (en) / Hora inicial (pt).
59	TimeInForce	No	Y	Specifies order time limit. Default value is Day when not specified. Accepted values: 0 – Day 6 – Good Till Date
126	ExpireTime	Conditional	Y	Time when order is no longer valid. Its Required if TimeInForce = 6. Only sets the time of day when order will end. Field name: End time (en) / Hora final (pt).
60	TransactTime	Yes	Y	Date and time when order was created by client. UTC format.
152	CashOrdQty	Conditional	Y	Financial value of the order. The order quantity will vary with the current market conditions. It is required if OrderQty is not set. Field name: Cash qty (en) / Financeiro (pt). *Accepted values: 1..N, in security's currency (Usually BRL, R$)*
210	MaxShow	No	Y	Maximum quantity (e.g. number of shares) within an order to be shown to other customers. Must be 5x the lot size. Tag is managed by exchange, to use a value managed by robot, see OfferSize (135) field. Field name: Iceberg qty (exchange) (en) / Lote ap. (bolsa) (pt). *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
847	TargetStrategy	Yes	N	The Strategy to be used: 1030 – Auction Order

4.3.12 Scheduled Order (1031)

To create Iceberg orders the following fields take part in the message:

Tag	Name	Required	Repl	Remarks
847	TargetStrategy	Yes	N	The Strategy to be used: 1031 – Scheduled Order
1	Account	Yes	N	Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char.

11	ClOrdID	Yes	-	Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters.
37	OrderID	No	N	Buy side may send it's own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form 'dsa.###'
21	HandlInst	Yes	N	Order Handling Instruction. Accepted values: 4 – AlgoOrder
38	OrderQty	Conditional	Y	Ordered quantity of shares or contracts. Required if CashOrdQty not set. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
40	OrdType	Yes	Y	Order type. Accepted values: 2 – Limit – Price must be informed on Scheduled Order
44	Price	Yes	Y	Price per share or contract. Required if OrdType is 2 (limit). Orders will be sent to the exchange at this exact price. Field name: Price limit (en) / Preco limite (pt). *Accepted values: 1..N, in security's currency (Usually BRL, R$)*
54	Side	Yes	N	Order side. Accepted values: 1 – Buy 2 – Sell
55	Symbol	Yes	N	The symbol of the traded instrument. Field name: Symbol (en) / Ativo (pt).
207	Security Exchange	No	N	Market used to help identify a security.
168	EffectiveTime	No	Y	Order start time. If not sent it will be set to first valid time. (market open time). Field name: Start time (en) / Hora inicial (pt).
59	TimeInForce	No	Y	Specifies order time limit. Default value is Day when not specified. Accepted values: 0 – Day 6 – Good Till Date
126	ExpireTime	Conditional	Y	Time when order is no longer valid. Its Required if TimeInForce = 6. Only sets the time of day when order will end. Field name: End time (en) / Hora final (pt).
60	TransactTime	Yes	Y	Date and time when order was created by client. UTC format.
210	MaxShow	No	Y	Maximum quantity (e.g. number of shares) within an order to be shown to other customers. Must be 5x the lot size. Tag is managed by exchange, to use a value managed by robot, see OfferSize (135) field. Field name: Iceberg qty (exchange) (en) / Lote ap. (bolsa) (pt). *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*

 Field Added to FIX specification

4.3.13 Cross Sniper (1032)

To create a Cross Sniper order the following fields take part in the message:

Tag	Name	Required	Repl	Remarks
1	Account	Yes	N	Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char. Field name: Client (en) / Cliente (pt).
11	ClOrdID	Yes	-	Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters.
37	OrderID	No	N	Buy side may send it's own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form 'dsa.###'
21	HandlInst	Yes	N	Order Handling Instruction. Accepted values: 4 – AlgoOrder
38	OrderQty	Conditional	Y	Ordered quantity of shares or contracts. Required if CashOrdQty not set. Field name: Quantity (en) / Quantidade (pt). *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
40	OrdType	Yes	Y	Order type. Accepted values: 1 – Market 2 – Limit
44	Price	Conditional	Y	Price per share or contract. Required if OrdType is 2 (limit). Orders will be sent to the exchange at this exact price, when informed. Field name: Price limit (en) / Preco limite (pt). *Accepted values: 1..N, in security's currency (Usually BRL, R$)*
54	Side	Yes	N	Order side. Accepted values: 1 – Buy 2 – Sell
55	Symbol	Yes	N	The symbol of the traded instrument. Field name: Symbol (en) / Ativo (pt).

207	Security Exchange	No	N	Market used to help identify a security.
168	EffectiveTime	No	Y	Order start time. If not sent it will be set to first valid time. (market open time). Field name: Start time (en) / Hora inicial (pt).
59	TimeInForce	No	Y	Specifies order time limit. Default value is Day when not specified. Accepted values: 0 – Day 6 – Good Till Date
126	ExpireTime	Conditional	Y	Time when order is no longer valid. Its Required if TimeInForce = 6. Only sets the time of day when order will end. Field name: End time (en) / Hora final (pt).
60	TransactTime	Yes	Y	Date and time when order was created by client. UTC format.
152	CashOrdQty	Conditional	Y	Financial value of the order. The order quantity will vary with the current market conditions. It is required if OrderQty is not set. Field name: Cash qty (en) / Financeiro (pt). *Accepted values: 1..N, in security's currency (Usually BRL, R$)*
210	MaxShow	No	Y	Maximum quantity (e.g. number of shares) within an order to be shown to other customers. Must be 5x the lot size. Tag is managed by exchange, to use a value managed by robot, see OfferSize (135) field. Field name: Iceberg qty (exchange) (en) / Lote ap. (bolsa) (pt). *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
847	TargetStrategy	Yes	N	The Strategy to be used: 1032 – Cross Sniper

4.3.1 Routed Order (3001)

To create a Routed Order the following fields take part in the message: This order will be routed to another executing system, and may contain more fields as agreed with the target executing system.

Tag	Name	Required	Repl	Remarks
1	Account	Yes	N	Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char.

11	ClOrdID	Yes	-	Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters.
21	HandlInst	Yes	N	Order Handling Instruction. Accepted values: 4 – AlgoOrder
38	OrderQty	Conditional	Y	Ordered quantity of shares or contracts. Required if CashOrdQty not set. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
40	OrdType	Conditional	Y	Order type as agreed with target system. Probably accepted values: 1 – Market – Price is not required. 2 – Limit – Price must be informed on Exchange Simple Order
44	Price	Conditional	Y	Price per share or contract as agreed with target system. Orders will be sent to the exchange at this exact price. Field name: Price limit (en) / Preco limite (pt). *Accepted values: 1..N, in security's currency (Usually BRL, R$)*
54	Side	Conditional	N	Order side as agreed with target system. Proably accepted values: 1 – Buy 2 – Sell
55	Symbol	Yes	N	The symbol of the traded instrument. Field name: Symbol (en) / Ativo (pt).
207	SecurityExchange	No	N	Market used to help identify a security.
60	TransactTime	Yes	Y	Date and time when order was created by client. UTC format.
111	MaxFloor	No	Y	Maximum quantity (e.g. number of shares) within an order to be shown to other customers, if accepted by the target system. Must be 5x the lot size. Tag is managed by exchange, to use a value managed by robot, see OfferSize (135) field. Field name: Iceberg qty (exchange) (en) / Lote ap. (bolsa) (pt). *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
847	TargetStrategy	Yes	N	The Strategy to be used: 3001 – Routed Order

☐ Field Added to FIX specification

4.3.2 Simple Exchange Order (1033)

Not yet implemented on DSA.

To create a Simple Exchange Order the following fields take part in the message:

Tag	Name	Required	Repl	Remarks
1	Account	Yes	N	Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char.
11	ClOrdID	Yes	-	Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters.
37	OrderID	No	N	Buy side may send it's own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form 'dsa.###'
21	HandlInst	Yes	N	Order Handling Instruction. Accepted values: 4 – AlgoOrder
38	OrderQty	Conditional	Y	Ordered quantity of shares or contracts. Required if CashOrdQty not set. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
40	OrdType	Yes	Y	Order type. Accepted values: 2 – Limit – Price must be informed on Exchange Simple Order
44	Price	Yes	Y	Price per share or contract. Required if OrdType is 2 (limit). Orders will be sent to the exchange at this exact price. Field name: Price limit (en) / Preco limite (pt). *Accepted values: 1..N, in security's currency (Usually BRL, R$)*
54	Side	Yes	N	Order side. Accepted values: 1 – Buy 2 – Sell
55	Symbol	Yes	N	The symbol of the traded instrument. Field name: Symbol (en) / Ativo (pt).
207	SecurityExchange	No	N	Market used to help identify a security.

60	TransactTime	Yes	Y	Date and time when order was created by client. UTC format.
210	MaxShow	No	Y	Maximum quantity (e.g. number of shares) within an order to be shown to other customers. Must be 5x the lot size. Tag is managed by exchange, to use a value managed by robot, see OfferSize (135) field. Field name: Iceberg qty (exchange) (en) / Lote ap. (bolsa) (pt). *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
847	TargetStrategy	Yes	N	The Strategy to be used: 1033 – Simple Exchange Order

☐ Field Added to FIX specification

4.3.3   Simple Exchange Cross Order (1034)

This strategy is not yet fully supported in DSA. Please, contact Plug and Trade before implementing.

4.3.4   Linear Gradient (1035)

This strategy is not yet fully supported in DSA. Please, contact Plug and Trade before implementing.

4.4   New Order Multileg (AB)

The NewOrderMultileg <AB>, also known as Multileg Order, is used by the client application to send a new strategy order to Fast Trader for strategies that work in two or more instruments. The received order is validated and then sent to the Fast Trader Algo Server. Below we show a more detailed view of the fields and accepted values for each strategy support with this type of message:

4.4.1 Multileg message flow and rules

The Multileg orders for strategies work in a special way. For our system we are considering that we are not using product specification. This means that the trade report will be made by leg for trades. But we will for practical purposes send a n Execution Report at the end of the algo order to consolidate the result.

Therefore the message flow is:

1. Fix Client sends a new multileg order to Algo System
2. Algo system sends an execution report with tag MultiLegReportingType (442) = 3 indicating that the answer is treating the whole algo order. It will mirror all fields sent and actually taken in consideration by the system. **In some cases the system may change some values making auto-corrections.**
   a. If the order has errors in it, the order tag OrderStatus (39) will indicate '8' Rejected and the text field will have the reason.
   b. If the order passed the first validation it may be sent for approval by a system administrator. In this case OrderStatus (39) will be 'A' – PendingNew and the text field will display the approval step. When accepted each leg will receive a specific LegRefId.
   c. If the order is accepted it will return the OrderStatus (39) = 0 New
3. The algo system sends in an execution report for trade. It will be reported by leg. So the MultiLegReportingType Tag (442) will have the value 2 and the respective Symbol, LegRefId and all the other fields will carry values for the leg. ClOrdId will be used to tie the legs with the main algo order.
4. At the end of the order the Algo system will send an execution report for the whole algo order informing the final state of it. This execReport will have all the legs and MultiLegReportingType =3.

4.4.2 Bull Call/Bear Put Spread - Difference or Weighted Difference (1002)

To create a Bull Call Spread or a Bear Put Spread the following fields take part in the message:

Tag	Name	Required	Repl	Remarks
11	ClOrdID	Yes	-	Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters.

37	OrderID	No	N	Buy side may send it's own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form 'dsa.###'
21	HandlInst	Yes	N	Order Handling Instruction. Accepted values: 4 – AlgoOrder
38	OrderQty	Conditional	Y	Sum of all leg qtys or base proportion if using leg ratio field. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
40	OrdType	Yes	Y	Order type. Accepted values: 2 – Limit
54	Side	Yes	N	Order side. Accepted values: B – 'As defined'
55	Symbol	Yes	N	"[N/A]" or the conjunction of symbols: PETR4;PETRC21;PETRC22
59	TimeInForce	No	Y	Specifies order time limit. Accepted values: 6 – Good Till Date
60	TransactTime	Yes	Y	Date and time when order was created by client. UTC format.
168	EffectiveTime	No	Y	Order start time. If not sent it will be set to first valid time. (market open time)
432	ExpireDate	No	Y	Order expiration date. UTC format. If value is different than current day, order will remain active on the server on next trading sessions. Check retuned value on the 1st ExecutionReport (u) with ExecType=New, usually our RobotServer will only allow the order to execute for 30 days and won't allow this value to be modified after insertion.
126	ExpireTime	Yes	Y	Time when order is no longer valid. Format: YYYY-MM-DD HH:MM:SS
20822	~~SuspendTime~~	No	Y	If supplied, suspends the order while keeping any missing leg's orders active for the user to take action. Usually configured to the time just before the last auction, so the user may decide to active or resolve the order on the After Market. *Supported by Robot, but not yet supported on DSA.*
135	OfferSize	No	Y	Maximum number of shares the algo server will send to the exchange at a time. In two leg spreads it is the value for the sell

				side of the spread, the max pffer size for the buy side will be calculated according to the leg quantity ratio. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
152	CashOrdQty	Conditional	Y	Sum of all leg cash ord qtys. It is required if OrderQty is not set. *Accepted values: 1..N, in security's currency (Usually BRL, R$)*
847	TargetStrategy	Yes	N	The Strategy to be used: 1002 – Spread
555	NoLegs	Yes	N	2
→ 600	LegSymbol	Yes	N	Symbol being traded. Must always be the first tag on each leg.
→ 616	LegSecurityExchange	Yes	N	XBMF or XBSP according the symbol
→ ~~623~~	~~LegRatioQty~~	Conditional	N	Can be used to determine the leg quantitiy be multiplying this number by the OrdQty value of the order. *Not used or supported in current implementation.*
→ 624	LegSide	Yes	N	List of accepted Values: 1 – Buy (Always on 2nd leg) 2 – Sell (Always on 1st leg) Values cannot be the same for both legs.
→ 687	LegQty	Conditional	Y	The order quantity for this leg of the order. Must be filled if not using LegRatioQty. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
→ 670	NoLegAllocs	Yes	N	Usually one.
→→ 671	LegAllocAccount	Yes	N	Client account number
→ 20777	LegMaxParticipationRate	No	Y	Indicates the maximum market participation rate for this leg during the execution of the spread order, Value ranges from: 0.000 to 1.000
→ 20778	LegIgnoredQuantity	No	Y	The quantity from the top of the book to be the discarded by the algo when making spread difference considerations. Default: 5 * Lot Size. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
→ 20779	LegBidAskOnTheBookDepth	Conditional	Y	Indicates the max depth in which the algo should bid/offer. If the offer price calculated is beyond that position the algo won´t send it to the exchange. Should be sent if BidAskOnTheBook is set to true. Accepted Values: -1 : Wait Other Leg

				0: Wait Price 1: Top of book 2: 2nd position 3: 3rd position 4: 4th position *Recommended default: 0*
→ 20780	LegCashOrdQty	Conditional	Y	The Cash order quantity of the leg. Must be filled if LegRatio and LegOrdQty are not sent. *Accepted values: 1..N, in security's currency (Usually BRL, R$)*
→ 20787	MaxLostLegPriceDiff	Conditional	Y	May only be sent if WaitLeg is true. The amoun in cents or basis points that the algo is allowed to close missed legs. Default: 0.00
20768	CountCrossOrders	Conditional	Y	Must be sent if LegMaxParticipationRate is set. Defaults to False.
20769	BidAskOnTheBook	No	Y	Indicates if algo will place orders on the book. Defaults to True.
20771	MaxReplaces	No	Y	Defaults to 100
20781	SpreadMethod	Yes	N	Accepted Values 0 – WeightedDifference : Robot will trade on the difference weighted by the LegQtyRatio 3 – PriceDifference: Robot will trade on the fixed difference between the leg prices. 5 – CashDifference – Robot will trade on the cash difference over all legs
20782	TargetSpread	Yes	Y	The price difference betwwen the legs when entering the operation. **Always Buy entry leg – Sell entry Leg.**
20844	TargetRevertSpread	No	Y	The price difference betwwen the legs when exiting the operation. **Always Buy entry leg – Sell entry Leg.** Which is equivalent to Sell exit leg – Buy exit leg.
20836	StopTriggerSpread	Float	N	Defines a stop coefficient. If the market coefficient reaches a value equal or 'worst' than this value, Robot will automatically replace the 'Selected Coefficient' with the value typed in 'StopSendSpread'. **Caption in en-US:** Trigger ratio / Trigger difference **Caption in pt-BR:** Razão disp / Diferença disp
20837	StopSendSpread	Float	N	The new assigned coefficient if market reaches StopTriggerSpread **Caption in en-US:** Stop ratio / Stop difference

				Caption in pt-BR: Razão stop / Diferença stop
20783	WaitLeg	No	Y	Indicates if algo should closed missed legs in the market or place an offer on the needed price. Even when set to false the maximum price difference allowed is 5 cents or basis points of the original leg price required. If that happens the algo will place a bid/offer in the max difference allowed. Default: False
20784	CompensateCoefficient	No	Y	Indicates if the algo should make a TargetSpread correction in case of a miss leg execution that generates a bad result in order to compensate and try to achieve the original requested target spread. Default: True
20785	CancelOffersOutsideDepth	No	Y	Indicates if algo should cancel the offers placed by it that fall out of the selected LegBidAskOnTheBookDepth tag.
20786	BidAskOnTheBookWithMargin	No	Y	Indicates if the algo should Keep a margin for offers on proportionally larger lot sizes in case these are partially taken. Default: False
20804	MultipleOffers	No	Y	If true, Robot will create an extra order when increasing Offer Qty. Useful to preserve queue order. Default: False
20805	WaitLargerSide	No	Y	If true, Robot will wait for enough trades on the larger side to make a trade on the smaller side. **Caption in en-US:** Wait for larger lot **Caption in pt-BR:** Esperar lotes maiores

☐ Field Added to FIX specification

4.4.3 Long/Short Spread – Ratio (1002)

To create a Bull Call Spread or a Bear Put Spread the following fields take part in the message:

Tag	Name	Required	Repl	Remarks
11	ClOrdID	Yes	-	Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters.
37	OrderID	No	N	Buy side may send it's own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form 'dsa.###'
21	HandlInst	Yes	N	Order Handling Instruction. Accepted values: 4 – AlgoOrder
38	OrderQty	Conditional	Y	Sum of all leg qtys or base proportion if using leg ratio field. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
40	OrdType	Yes	Y	Order type. Accepted values: 2 – Limit
54	Side	Yes	N	Order side. Accepted values: B – 'As defined'
55	Symbol	Yes	N	"[N/A]" or the conjunction of symbols: PETR4;PETRC21;PETRC22
59	TimeInForce	No	Y	Specifies order time limit. Accepted values: 6 – Good Till Date
60	TransactTime	Yes	Y	Date and time when order was created by client. UTC format.
432	ExpireDate	No	Y	Order expiration date. UTC format. If value is different than current day, order will remain active on the server on next trading sessions. Check retuned value on the 1st ExecutionReport (u) with ExecType=New, usually our RobotServer will only allow the order to execute for 30 days and won't allow this value to be modified after insertion.
126	ExpireTime	Yes	Y	Time when order is no longer valid. Format: YYYY-MM-DD HH:MM:SS
20822	~~SuspendTime~~	No	Y	If supplied, suspends the order while keeping any missing leg's orders active for the user to take action. Usually configured to the time just before the last auction, so the user may decide to active or resolve the order on the After Market. *Supported by Robot, but not yet supported on DSA.*
135	OfferSize	No	Y	Maximum number of shares the algo server will send to the exchange at a time. In two leg spreads it is the value for the sell side of the spread, the max

				pffer size for the buy side will be calculated according to the leg quantity ratio. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
152	CashOrdQty	Conditional	Y	Sum of all leg cash ord qtys. It is required if OrderQty is not set. *Accepted values: 1..N, in security's currency (Usually BRL, R$)*
168	EffectiveTime	No	Y	Order start time. If not sent it will be set to first valid time. (market open time)
847	TargetStrategy	Yes	N	The Strategy to be used: 1002 – Spread
555	NoLegs	Yes	N	2
→ 600	LegSymbol	Yes	N	Symbol being traded. Must always be the first tag on each leg.
→ 616	LegSecurityExchange	Yes	N	XBMF or XBSP according the symbol
→ 624	LegSide	Yes	N	List of accepted Values: 1 – Buy (Always on 2nd leg) 2 – Sell (Always on 1st leg) Values cannot be the same for both legs.
→ 687	LegQty	Conditional	Y	The order quantity for this leg of the order. Must be filled if not using LegRatioQty. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
→ 670	NoLegAllocs	Yes	N	Usually one.
→→ 671	LegAllocAccount	Yes	N	Client account number
→ 20777	LegMaxParticipationRate	No	Y	Indicates the maximum market participation rate for this leg during the execution of the spread order, Value ranges from: 0.000 to 1.000
→ 20778	LegIgnoredQuantity	No	Y	The quantity from the top of the book to be the discarded by the algo when making spread difference considerations. Default: 5 * Lot Size. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
→ 20779	LegBidAskOnTheBookDepth	Conditional	Y	Indicates the max depth in which the algo should bid/offer. If the offer price calculated is beyond that position the algo won't send it to the exchange. Should be sent if BidAskOnTheBook is set to true. Accepted Values: -1 : Wait Other Leg 0: Wait Price 1: Top of book 2: 2nd position 3: 3rd position 4: 4th position

→ 20780	LegCashOrdQty	Conditional	Y	The Cash order quantity of the leg. Must be filled if LegRatio and LegOrdQty are not sent. *Accepted values: 1..N, in security's currency (Usually BRL, R$).*
→ 20787	MaxLostLegPriceDiff	Conditional	Y	May only be sent if WaitLeg is true. The amoun in cents or basis points that the algo is allowed to close missed legs. Default: 0.00
20768	CountCrossOrders	Conditional	Y	Must be sent if LegMaxParticipationRate is set. Defaults to False.
20769	BidAskOnTheBook	No	Y	Indicates if algo will place orders on the book. Defaults to True.
20771	MaxReplaces	No	Y	Defaults to 100. *Accepted values: 1..N.*
20781	SpreadMethod	Yes	N	Accepted Values 1 – Ratio : Robot will trade on the ratio between leg prices.
20782	TargetSpread	Yes	Y	The ratio between the legs when entering the operation. **Always Buy entry leg / Sell entry Leg.**
20844	TargetRevertSpread	No	Y	The ratio between the legs when exiting the operation with profit. **Always Buy entry leg / Sell entry Leg.** Which is equivalent to Sell exit leg / Buy exit leg.
20836	StopTriggerSpread	Float	N	Defines a stop coefficient. If the market coefficient reaches a value equal or 'worst' than this value, Robot will automatically replace the 'Selected Coefficient' with the value typed in 'StopSendSpread'. **Caption in en-US:** Trigger ratio / Trigger difference **Caption in pt-BR:** Razão disp / Diferença disp
20837	StopSendSpread	Float	N	The new assigned coefficient if market reaches StopTriggerSpread **Caption in en-US:** Stop ratio / Stop difference **Caption in pt-BR:** Razão stop / Diferença stop
20783	WaitLeg	No	Y	Indicates if algo should closed missed legs in the market or place an offer on the needed price. Even when set to false the maximum price difference allowed is 5 cents or basis points of the original leg price required. If that happens the algo will place a bid/offer in the max difference allowed. Default: False
20784	CompensateCoefficient	No	Y	Indicates if the algorithm should make a TargetSpread correction in case of a miss leg execution that generates a bad result in order to compensate and try to achieve the original requested target spread. Default: True
20785	CancelOffersOutsideDepth	No	Y	Indicates if algo should cancel the offers placed by it that fall out of the selected LegBidAskOnTheBookDepth tag. *Recommended default: False.*
20786	BidAskOnTheBookWithMargin	No	Y	Indicates if the algo should Keep a margin for offers on proportionally larger lot sizes in case these are partially taken. Default: False

| 20804 | MultipleOffers | No | Y | If true, Robot will create an extra order when increasing Offer Qty. Useful to preserve queue order.
Default: False |
| 20805 | WaitLargerSide | No | Y | If true, Robot will wait for enough trades on the larger side to make a trade on the smaller side. *Recommended default: True.* |

☐ Field Added to FIX specification

4.4.4 Multileg Spread – 2+ Legs (1029)

To create a Multileg Spread, the following fields take part in the message:

Tag	Name	Required	Repl	Remarks
11	ClOrdID	Yes	-	Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters.
37	OrderID	No	N	Buy side may send it's own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form 'dsa.###'
21	HandlInst	Yes	N	Order Handling Instruction. Accepted values: 4 – AlgoOrder
38	OrderQty	Conditional	Y	Sum of all leg qtys or base proportion if using leg ratio field. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
40	OrdType	Yes	Y	Order type. Accepted values: 2 – Limit
54	Side	Yes	N	Order side. Accepted values: B – 'As defined'
55	Symbol	Yes	N	"[N/A]" or the conjunction of symbols: PETR4;PETRC21;PETRC22
59	TimeInForce	No	Y	Specifies order time limit. Accepted values: 6 – Good Till Date
60	TransactTime	Yes	Y	Date and time when order was created by client. UTC format.

168	EffectiveTime	No	Y	Order start time. If not sent it will be set to first valid time. (market open time)
432	ExpireDate	No	Y	Order expiration date. UTC format. If value is different than current day, order will remain active on the server on next trading sessions. Check retuned value on the 1st ExecutionReport (u) with ExecType=New, usually our RobotServer will only allow the order to execute for 30 days and won't allow this value to be modified after insertion.
126	ExpireTime	Yes	Y	Time when order is no longer valid. Format: YYYY-MM-DD HH:MM:SS
20822	~~SuspendTime~~	No	Y	If supplied, suspends the order while keeping any missing leg's orders active for the user to take action. Usually configured to the time just before the last auction, so the user may decide to active or resolve the order on the After Market. *Supported by Robot, but not yet supported on DSA.*
135	OfferSize	No	Y	Maximum number of shares the algo server will send to the exchange at a time. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
847	TargetStrategy	Yes	N	The Strategy to be used: 1029 – Spread
20768	CountCrossOrders	Conditional	Y	Must be sent if LegMaxParticipationRate is set. Defaults to False.
20769	BidAskOnTheBook	No	Y	Indicates if algo will place orders on the book. Defaults to True.
20771	MaxReplaces	No	Y	Defaults to 100
20781	SpreadMethod	Yes	N	Accepted Values 0 – Difference – Robot will trade on the difference weighted by the ratio of the quantitities of each leg. 2 – Vol – Robot will trade over the VOL difference of each leg that is of type option. 5 – CashDifference - Robot will trade on the difference between the leg's executed cash quantity. 6 – PriceDifference – Robot will trade on difference calculated over each leg symbol's direct prices, with no multiplications. 7 – RateDifference – Robot will trade on a difference calculated over leg symbol's tax rate, as in DI1's FRA Tax Rate. 8 – ManualDifference – Robot will trade on a difference calculated by multiplying each leg symbol's prices by the multiplier informed on LegPxMultiplier (20827). 9 – FinancialRatio – Robot will calculate the coefficient by dividing the Buy Cash

				Quantities by the Sell Cash Quantities.
20782	TargetSpread	Yes	N	The coefficient calculated from leg prices. **Always Buy leg – Sell Leg.**
20844	TargetRevertSpread	No	Y	The coefficient between the legs when exiting the operation with profit. Always Buy entry leg / Sell entry Leg. Which is equivalent to Sell exit leg / Buy exit leg.
20836	StopTriggerSpread	Float	N	Defines a stop coefficient. If the market coefficient reaches a value equal or 'worst' than this value, Robot will automatically replace the 'Selected Coefficient' with the value typed in 'StopSendSpread'. Caption in en-US: Trigger ratio / Trigger difference Caption in pt-BR: Razão disp / Diferença disp
20837	StopSendSpread	Float	N	The new assigned coefficient if market reaches StopTriggerSpread Caption in en-US: Stop ratio / Stop difference Caption in pt-BR: Razão stop / Diferença stop
20783	WaitLeg	No	Y	Indicates if algo should closed missed legs in the market or place an offer on the needed price. Even when set to false the maximum price difference allowed is 5 cents or basis points of the original leg price required. If that happens the algo will place a bid/offer in the max difference allowed. Default: False **Caption in en-US:** Wait leg px **Caption in pt-BR:** Esperar preço da perna
20784	CompensateCoefficient	No	Y	Indicates if the algo should make a TargetSpread correction in case of a miss leg execution that generates a bad result in order to compensate and try to achieve the original requested target spread. Default: True
20785	CancelOffersOutsideDepth	No	Y	Indicates if algo should cancel the offers placed by it that fall out of the selected LegBidAskOnTheBookDepth tag.
20786	BidAskOnTheBookWithMargin	No	Y	Indicates if the algo should keep a margin for offers on proportionally larger lot sizes in case these are partially taken. In operations with different lot sizes, it is recommended to always proclaim on the leg with smaller lot. The only safe way to proclaim on the other legs without 'Wait for leg px' is keeping this option on so that, in case only part of the lot is taken, it is still viable to take the rest of the lot on the market. This option is on by default.Ex.: In a Spread operation of AAAA/BBBB with quantities 4000/2000, if Robot proclaims on both legs with 200 and 100 and only 100 is taken on the leg

				of AAAA, this would have to take 100 from an existing counteroffer of BBBB. With this option on, the place on bid/ask price of AAAA is calculated considering that it may need to take BBBB. *(Optional.* Default: False) **Caption in en-US:** Place bid/ask with margin on larger lot **Caption in pt-BR:** Apregoar com margem nos lotes maiores
20804	MultipleOffers	No	Y	If true, Robot will create an extra order when increasing Offer Qty. Useful to preserve queue order. Default: False **Caption in en-US:** Place mult. orders **Caption in pt-BR:** Apregoar mult. ordens
~~20824~~	~~KeepMultipleOffer~~	No	Y	If active, Robot won't cancel the offers on more conservative prices if these are in a privileged position on the book. *(Optional)* *Supported by Robot, but not yet supported by DSA.* **Caption in en-US:** Keep placed old px. **Caption in pt-BR:** Manter apreg. pr. antigo
20805	WaitLargerSide	No	Y	If true, Robot will wait for enough trades on the larger side to make a trade on the smaller side. **Caption in en-US:** Wait for larger lot **Caption in pt-BR:** Esperar lotes maiores
~~20825~~	~~PlaceOnlyTopOffer~~	No	Y	If active, Robot will only place the best bid/ask on the book, cancelling the offer if another offer becomes the top offer. (Optional) *Supported by Robot, but not yet supported by DSA* **Caption in en-US:** Place best bid/ask only **Caption in pt-BR:** Apreg. apenas mel. oferta
~~20826~~	~~AutoResolveInterval~~	No	Y	If informed, will define the interval in seconds after which Robot will close any unmatched legs at market price. *Supported by Robot, but not yet supported by DSA* **Caption in en-US:** Auto close leg after (s) **Caption in pt-BR:** Res. despern. autom. (s)

555	NoLegs	Yes	N	3+ 2 legs are also accepted, but using the specific Spread (1002) for two legs will make use of more optimized code inside our Robot.
→ 600	LegSymbol	Yes	N	Symbol being traded. Must always be the first tag on each leg.
→ 616	LegSecurityExchange	Yes	N	XBMF or XBSP according the symbol
→ 623	LegRatioQty	Conditional	N	Can be used to determine the leg quantitiy be multiplying this number by the OrdQty value of the order. *Not yet used or supported in current implementation.*
→ 624	LegSide	Yes	N	List of accepted Values: 1 – Buy 2 – Sell
→ 687	LegQty	Conditional	Y	The order quantity for this leg of the order. Must be filled if not using LegRatioQty. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
→ 566	LegPrice	Conditional	Y	Limit price for this leg. *Not supported on Robot for any Multileg Strategies yet. Field will be used only on Multileg-Cross (1036).*
→ 670	NoLegAllocs	Yes	N	Usually one.
→→ 671	LegAllocAccount	Yes	N	Client account number
→ 20827	LegPxMultiplier	No	Y	Defines a multiplier to be used when calculating the execute coefficient and placing bid/ask orders. Only accepted when SpreadMethod (20781) = ManualDifference (8). *Supported by Robot, but not yet supported by DSA.*
→ 20778	LegIgnoredQuantity	No	Y	The quantity from the top of the book to be the discarded by the algo when making spread difference considerations. Default: 5 * Lot Size. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*
→ 20779	LegBidAskOnTheBookDepth	Conditional	Y	Indicates the max depth in which the algo should bid/offer. If the offer price calculated is beyond that position the algo won´t send it to the exchange. Should be sent if BidAskOnTheBook is set to true. Accepted Values: -1 : Wait Other Leg

				0: Wait Price 1: Top of book 2: 2nd position 3: 3rd position 4: 4th position *Recommended default: 0*
→ 20821	~~LegMaxMissQty~~	Conditional	Y	Maximum quantity that may be missing / unmatched on this leg without stopping the order from further executing. *Not yet supported by DSA.*
→ 20820	~~LegWorkDays~~	Conditional	Y	Work days used when calculation of the interest rate used on VOL, FRA or for price conversion between price dates, depending on selected strategy. *(Optional)*
→ 20823	~~LegRate~~	Conditional	Y	Rates used to calculate volatility or used to convert prices between present and future dates, depending on configured strategy. (*Mandatory when the strategy requires it, such as VOL or FRA Rate*)

☐ Field Added to FIX specification

Examples of valid New and Replace messages:

Multileg order creation request and response, plain FIX

8=FIX.4.4|9=399|35=AB|34=2|49=TESTER|52=20190731-13:16:03.071|56=PNT_DSA|1=4000|11=1-999|21=4|40=2|54=B|55=PETR3;PETR4|59=0|60=20190731-13:16:03.055|116=user|135=500|847=1002|20781=1|20782=1.09|20783=Y|20784=Y|453=1|448=123|447=D|452=5|555=2|600=PETR3|616=XBSP|624=1|687=200.0|670=1|671=4000|20778=500|20779=0|600=PETR4|616=XBSP|624=2|687=200.0|670=1|671=4000|20778=500|20779=0|10=008|

8=FIX.4.4|9=561|35=8|34=295|49=PNT_DSA|56=TESTER|116=user|52=20190731-13:33:26.973|37=dsa.369|11=1-999|17=PendNew_539.1FN6|150=A|39=A|55=PETR4;PETR3|54=B|38=400|40=2|847=1002|168=20190731-03:00:01|126=20190731-19:55:00|151=400|14=0|6=0|555=2|600=PETR4|616=XBSP|624=2|687=200|654=0|20778=500|20779=0|20787=0|20800=0|20802=0|2080

3=0|670=1|671=4000|600=PETR3|616=XBSP|624=1|687=200|654=1|20778=500|20779=0|20787=0|20800=0|20802=0|20803=0|670=1|671=4000|20768=N|20769=Y|20771=100|20782=1.0900000333786|20783=Y|20784=Y|20786=N|20804=N|135=500|20781=1|10=146|

8=FIX.4.4|9=644|35=8|34=296|49=PNT_DSA|56=TESTER|116=user|52=20190731-13:33:27.833|37=dsa.369|198=T-603|11=1-999|41=1-999 |17=Susp_540.1FN7|150=0|39=0|378=99|55=PETR4;PETR3|54=B|38=400|40=2|847=1002|168=20190731-13:34:26|126=20190731-19:55:00|151=400|14=0|6=0|58=Paused order (No prev status)|555=2|600=PETR4|616=XBSP|624=2|687=200|654=0|20778=500|20779=0|20787=0|20800=0|20802=0|20803=0|670=1|671=4000|600=PETR3|616=XBSP|624=1|687=200|654=1|20778=500|20779=0|20787=0|20800=0|20802=0|20803=0|670=1|671=4000|20768=N|20769=Y|20771=100|20782=1.0900000333786|20783=Y|20784=Y|20786=N|20804=N|135=500|20781=1|10=169|

Multileg order creation request and response, translated FIX

13:16:03.071 BeginString=FIX.4.4 BodyLength=399 MsgType=NewOrderMultileg MsgSeqNum=2 SenderCompID=TESTER SendingTime=2019-07-31 13:16:03.071 TargetCompID=PNT_DSA Account=4000 ClOrdID=1-999 HandlInst=4 OrdType=Limit Side=AsDefined Symbol=PETR3;PETR4 TimeInForce=Day TransactTime=2019-07-31 13:16:03.055 OnBehalfOfSubID=user OfferSize=500 TargetStrategy=1002 20781=1 20782=1.09 20783=Y 20784=Y NoPartyIDs=1 PartyID=123 PartyIDSource=Proprietary PartyRole=InvestorID NoLegs=2 LegSymbol=PETR3 LegSecurityExchange=XBSP LegSide=1 LegQty=200.0 NoLegAllocs=1 LegAllocAccount=4000 20778=500 20779=0 LegSymbol=PETR4 LegSecurityExchange=XBSP LegSide=2 LegQty=200.0 NoLegAllocs=1 LegAllocAccount=4000 20778=500 20779=0 CheckSum=8

13:33:26.973 BeginString=FIX.4.4 BodyLength=561 MsgType=ExecutionReport MsgSeqNum=295 SenderCompID=PNT_DSA TargetCompID=TESTER OnBehalfOfSubID=user SendingTime=2019-07-31 13:33:26.973 OrderID=dsa.369 ClOrdID=1-999 ExecID=PendNew_539.1FN6 ExecType=PendingNew OrdStatus=PendingNew Symbol=PETR4;PETR3 Side=AsDefined OrderQty=400 OrdType=Limit TargetStrategy=1002 EffectiveTime=2019-07-31 03:00:01.000 ExpireTime=2019-07-31 19:55:00.000 LeavesQty=400 CumQty=0 AvgPx=0 NoLegs=2 LegSymbol=PETR4 LegSecurityExchange=XBSP LegSide=2 LegQty=200 LegRefID=0 20778=500 20779=0 20787=0 20800=0 20802=0 20803=0 NoLegAllocs=1 LegAllocAccount=4000 LegSymbol=PETR3 LegSecurityExchange=XBSP LegSide=1 LegQty=200 LegRefID=1 20778=500 20779=0 20787=0 20800=0 20802=0 20803=0 NoLegAllocs=1 LegAllocAccount=4000 20768=N 20769=Y 20771=100 20782=1.0900000333786 20783=Y 20784=Y 20786=N 20804=N OfferSize=500 20781=1 CheckSum=146

13:33:27.833   BeginString=FIX.4.4   BodyLength=644   MsgType=ExecutionReport   MsgSeqNum=296   SenderCompID=PNT_DSA   TargetCompID=TESTER   OnBehalfOfSubID=user   SendingTime=2019-07-31 13:33:27.833   OrderID=dsa.369   SecondaryOrderID=T-603   ClOrdID=1-999   OrigClOrdID=1-999   ExecID=Susp_540.1FN7   ExecType=New   OrdStatus=New   ExecRestatementReason=99   Symbol=PETR4;PETR3   Side=AsDefined   OrderQty=400   OrdType=Limit   TargetStrategy=1002   EffectiveTime=2019-07-31 13:34:26.000   ExpireTime=2019-07-31 19:55:00.000   LeavesQty=400   CumQty=0   AvgPx=0   Text=Paused order (No prev status)   NoLegs=2   LegSymbol=PETR4   LegSecurityExchange=XBSP   LegSide=2   LegQty=200   LegRefID=0   20778=500   20779=0   20787=0   20800=0   20802=0   20803=0   NoLegAllocs=1   LegAllocAccount=4000   LegSymbol=PETR3   LegSecurityExchange=XBSP   LegSide=1   LegQty=200   LegRefID=1   20778=500   20779=0   20787=0   20800=0   20802=0   20803=0   NoLegAllocs=1   LegAllocAccount=4000   20768=N   20769=Y   20771=100   20782=1.0900000333786   20783=Y   20784=Y   20786=N   20804=N   OfferSize=500   20781=1   CheckSum=169

Multileg order replace request and response, plain FIX

8=FIX.4.4|9=442|35=AC|34=207|49=TESTER|52=20190731-13:57:27.995|56=PNT_DSA|1=4000|11=1-999 |18=2|21=4|40=2|41=1-999 |54=B|55=PETR3;PETR4|59=0|60=20190731-13:57:27.983|116=user|135=500|150=9|847=1029|20781=5|20782=1.09|20783=Y|20784=Y|453=1|448=123|447=D|452=5|555=2|600=PETR3|616=XBSP|624=1|687=200.0|670=1|671=4000|20778=500|20779=0|600=PETR4|616=XBSP|624=2|687=200.0|670=1|671=4000|20778=500|20779=0|10=036|

8=FIX.4.4|9=542|35=8|34=1043|49=PNT_DSA|56= TESTER |116=user|52=20190731-13:56:33.143|37=dsa.373|198=T-607|11=1-999 |17=PendRep_555.1H0H|150=E|39=E|55=PETR3;PETR4|54=B|38=400|40=2|847=1029|168=20190731-13:56:52|126=20190731-19:55:00|151=400|14=0|6=0|555=2|600=PETR3|616=XBSP|624=1|687=200|654=0|20778=500|20779=0|20787=0|20800=0|20802=0|20803=0|670=1|671=4000|600=PETR4|616=XBSP|624=2|687=200|654=1|20778=500|20779=0|20787=0|20800=0|20802=0|20803=0|670=1|671=4000|20768=N|20769=Y|20771=100|20783=Y|20784=Y|20786=N|20804=N|135=500|10=020|

8=FIX.4.4|9=687|35=8|34=1044|49=PNT_DSA|56= TESTER|116=user|52=20190731-13:56:33.440|37=dsa.373|198=T-607|11=1-999 |41=1-999 |17=Rest_556.1H0H|150=D|39=5|378=4|55=PETR3;PETR4|54=B|38=400|40=2|847=1029|168=20190731-13:56:52|126=20190731-19:55:00|151=400|14=0|6=0|58= Algorithm Order params status='Replaced'). Modified fields: [SecondaryOrderID=T-

607

]|555=2|600=PETR3|616=XBSP|624=1|687=200|654=0|20778=500|20779=0|20787=0|20800=0|20802=0|20803=0|670=1|671=4000|600=PETR4|616=XBSP|624=2|687=200|654=1|20778=500|20779=0|20787=0|20800=0|20802=0|20803=0|670=1|671=4000|20768=N|20769=Y|20771=100|20783=Y|20784=Y|20786=N|20804=N|135=500|10=022|

Multileg order replace request and response, translated FIX

13:57:27.995 BeginString=FIX.4.4 BodyLength=442 MsgType=MultilegOrderCancelReplaceRequest MsgSeqNum=207 SenderCompID=TESTER SendingTime=2019-07-31 13:57:27.995 TargetCompID=PNT_DSA Account=4000 ClOrdID=1-999 ExecInst=Work HandlInst=4 OrdType=Limit OrigClOrdID=1-999 Side=AsDefined Symbol=PETR3;PETR4 TimeInForce=Day TransactTime=2019-07-31 13:57:27.983 OnBehalfOfSubID=user OfferSize=500 ExecType=Suspended TargetStrategy=1029 20781=5 20782=1.09 20783=Y 20784=Y NoPartyIDs=1 PartyID=123 PartyIDSource=Proprietary PartyRole=InvestorID NoLegs=2 LegSymbol=PETR3 LegSecurityExchange=XBSP LegSide=1 LegQty=200.0 NoLegAllocs=1 LegAllocAccount=4000 20778=500 20779=0 LegSymbol=PETR4 LegSecurityExchange=XBSP LegSide=2 LegQty=200.0 NoLegAllocs=1 LegAllocAccount=4000 20778=500 20779=0 CheckSum=36
13:56:33.143 BeginString=FIX.4.4 BodyLength=542 MsgType=ExecutionReport MsgSeqNum=1043 SenderCompID=PNT_DSA TargetCompID= TESTER OnBehalfOfSubID=user SendingTime=2019-07-31 13:56:33.143 OrderID=dsa.373 SecondaryOrderID=T-607 ClOrdID=1-999 ExecID=PendRep_555.1H0H ExecType=PendingReplace OrdStatus=PendingReplace Symbol=PETR3;PETR4 Side=AsDefined OrderQty=400 OrdType=Limit TargetStrategy=1029 EffectiveTime=2019-07-31 13:56:52.000 ExpireTime=2019-07-31 19:55:00.000 LeavesQty=400 CumQty=0 AvgPx=0 NoLegs=2 LegSymbol=PETR3 LegSecurityExchange=XBSP LegSide=1 LegQty=200 LegRefID=0 20778=500 20779=0 20787=0 20800=0 20802=0 20803=0 NoLegAllocs=1 LegAllocAccount=4000 LegSymbol=PETR4 LegSecurityExchange=XBSP LegSide=2 LegQty=200 LegRefID=1 20778=500 20779=0 20787=0 20800=0 20802=0 20803=0 NoLegAllocs=1 LegAllocAccount=4000 20768=N 20769=Y 20771=100 20783=Y 20784=Y 20786=N 20804=N OfferSize=500 CheckSum=20
13:56:33.440 BeginString=FIX.4.4 BodyLength=687 MsgType=ExecutionReport MsgSeqNum=1044 SenderCompID=PNT_DSA TargetCompID= TESTER OnBehalfOfSubID=user SendingTime=2019-07-31 13:56:33.440 OrderID=dsa.373 SecondaryOrderID=T-607 ClOrdID=1-999 OrigClOrdID=1-999 ExecID=Rest_556.1H0H ExecType=Restated OrdStatus=Replaced ExecRestatementReason=4 Symbol=PETR3;PETR4 Side=AsDefined OrderQty=400 OrdType=Limit TargetStrategy=1029

EffectiveTime=2019-07-31 13:56:52.000   ExpireTime=2019-07-31 19:55:00.000   LeavesQty=400   CumQty=0   AvgPx=0   Text= Algorithm Order params status='Replaced'). Modified fields: [SecondaryOrderID=T-607]   NoLegs=2   LegSymbol=PETR3   LegSecurityExchange=XBSP   LegSide=1   LegQty=200   LegRefID=0   20778=500   20779=0   20787=0   20800=0   20802=0   20803=0   NoLegAllocs=1   LegAllocAccount=4000   LegSymbol=PETR4   LegSecurityExchange=XBSP   LegSide=2   LegQty=200   LegRefID=1   20778=500   20779=0   20787=0   20800=0   20802=0   20803=0   NoLegAllocs=1   LegAllocAccount=4000   20768=N   20769=Y   20771=100   20783=Y   20784=Y   20786=N   20804=N   OfferSize=500   CheckSum=22

4.4.5   Cross-TWAP (1028)

To create a Cross order that trades a configured amount evenly distributed over the configured timespan.

Tag	Name	Required	Repl	Remarks
35	MsgType	Yes	N	NewOrderMultileg (AB)
847	TargetStrategy	Yes	N	1028
11	ClOrdID	Yes	-	Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters.
37	OrderID	No	N	Buy side may send it's own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form 'dsa.###'
21	HandlInst	Yes	N	Order Handling Instruction. Accepted values: 4 – AlgoOrder
40	OrdType	Yes	Y	Order type. Accepted values: 2 – Limit
55	Symbol	Yes	N	The symbol of the traded instrument.
207	SecurityExchange	No	N	Market used to help identify a security.
38	OrderQty	Conditional	Y	Quantity to be traded. *Accepted values: 1..N, respecting Security's RoundLot. Other values will be rounded.*

152	CashOrdQty	Conditional	Y	Cash quantity to be traded. *Accepted values: 1..N, in security's currency (Usually BRL, R$).*
555	NoLegs	Yes	N	Always 2
→ 600	LegSymbol	Yes	N	Fill with the same value as Symbol (55) tag or "[N/A]". Value will be ignored on our system, but this tag must be included as the first tag of the repeating group in order to make a valid group as defined on FIX specification.
→ 624	LegSide	Yes	N	List of accepted Values: 1 – Buy (mandatory for 2nd leg) 2 – Sell (mandatory for 1st leg)
→ 566	LegPrice	Conditional	Y	
→ 670	NoLegAllocs	Yes	N	Always one.
→→ 671	LegAllocAccount	Yes	N	Client account number
20775	MaxParticipationRate	No	Y	Default: 0. Accepts values between 0.00 and 1.00. Must be bigger than MinParticipationRate
20776	MinParticipationRate	No	Y	Default: 0. Accepts values between 0.00 and 1.00. Must be smaller than MaxParticipationRate

Field Added to FIX specification

Message example:

4.4.6   Multileg-Cross (1036)

Multileg-Cross is supported by Robot but not yet integrated to DSA.

4.5 ExecutionReport (8)

ExecutionReport <8> messages are sent back by the Fast Trader Platform and are used for the following purposes:

- Confirm a new order
- Confirm order modification and cancelation
- Inform current order status
- Inform order fills
- Reject an order

The following fields are used by ExecutionReport messages:

Tag	Name	Required	Remarks
1	Account	No	Account number
6	AvgPx	Yes	Average price
11	ClOrdID	Yes	Order identifier as assigned by client.
14	CumQty	Yes	Cumulative quantity already executed for the order.
17	ExecID	Yes	Execution unique identifier as assigned by Fast Trader.
31	LastPx	No	Price of this trade. Required when a trade is informed.
32	LastQty	No	Quantity of this trade. Required when a trade is informed.
37	OrderID	Yes	Order unique identifier
38	OrderQty	Yes	Ordered quantity of shares or contracts.

39	OrdStatus	Yes	Current order status. Valid values: 0 – New 1 – Partially Filled 2 – Filled 4 – Canceled 5 – Replaced 6 – Pending Cancel 8 – Rejected 9 – Suspended A – Pending New C - Expired E – Pending Replace
41	OrigClOrdID	No	Original order identifier as assigned by the client. Used for order identification during modification/cancelation requests.
44	Price	No	Price per share or contract. Required if specified on the order.
640	Price2	No	
54	Side	Yes	Order side. Valid values: 1 – Buy 2 – Sell
55	Symbol	Yes	The symbol of the traded instrument.
58	Text	No	Free format text field.
60	TransactTime	No	Execution date and time in UTC format.
103	OrdRejReason	No	Code to identify reason for order rejection. . Required when ExecType=8 (Rejected). Valid values range from 0 to 999999.

150	ExecType	Yes	Execution type. Valid Values: 0 – New 4 – Cancel 5 – Replace 8 – Reject 9 – Suspend C – Expired D – Restated F – Trade
151	LeavesQty	Yes	Order quantity open for further execution.
152	CashOrdQty	No	Notional Value of the order. The order quantity will vary with the current market conditions. It is required if OrderQty is not set. *Accepted values: 1..N, in security's currency (Usually BRL, R$).*
168	EffectiveTime	No	Order start time. If not sent it will be set to first valid time. (market open time)
198	SecondaryOrderID	No	Exchange-generated order identifier that is changed for each order modification event or quantity replenishment in disclosed orders.
210	MaxShow	No	Maximum quantity (e.g. number of shares) within an order to be shown to other customers. Must be 10x the lot size.
378	ExecRestatementReason	No	Indicates reason of restatement if available.
432	ExpireDate	No	Order expiration date. UTC format. Currently, only a few select strategies support this field.
126	ExpireTime	Conditional	Time when order is no longer valid. Its Required if TimeInForce = 6. indicates time of day when order will end.
654	LegRefId	No	Leg identification. Sent outside noLegs group if reporting trade for multileg algo order.
847	TargetStrategy	Yes	The Strategy being used.
555	NoLegs	No	Number of legs in message.

→ 600	LegSymbol	Yes	Symbol being traded. Cannot be changed. Must always be the first tag on each leg.
→ 616	LegSecurityExchange	Yes	XBMF or XBSP according the symbol
→ 624	LegSide	Yes	List of accepted Values: 1 – Buy 2 – Sell Values cannot be the same for both legs. Cannot change a leg side.
→ 654	LegRefId	No	Leg identification. Sent in execution reports for acknowledging multileg algo orders.
→ 687	LegQty	Condition al	The order quantity for this leg of the order. Must be filled if not using LegRatioQty.
→ 670	NoLegAllocs	Yes	Usually one.
→→ 671	LegAllocAccount	Yes	Client account number
→ 20777	LegMaxParticipationR ate	No	Indicates the maximum market participation rate for this leg during the execution of the spread order, Value ranges from: 0.000 to 1.000
→ 20778	LegIgnoredQuantity	No	The quantity from the top of the book to be the discarded by the algo when making spread difference considerations. Default: 5 * Lot Size.
→ 20779	LegBidAskOnTheBook Depth	Condition al	Indicates the max depth in which the algo should bid/offer. If the offer price calculated is beyond that position the algo won´t send it to the exchange. Should be sent if BidAskOnTheBook is set to true. Accepted Values: -1 : Wait Other Leg 0: Wait Price 1: Top of book 2: 2nd position 3: 3rd position 4: 4th position
→ 20780	LegCashOrdQty	Condition al	The Cash order quantity of the leg. If not supplied on order creation, Robot's internal estimation will be sent on this field.

→ 20787	LegLegMaxLostPriceDiff	Conditional	May only be sent if WaitLeg is true. The amoun in cents or basis points that the algo is allowed to close missed legs. Default: 0.00
→ 20800	LegCumQty	Yes	Executed quantity on this leg. Only present if NoLegs (555) > 0
→ 20802	LegOpenQty	Yes	Total quantity of offers currently on book.
→ 20803	LegOpenPx	Yes	Average price of all offers currently on book.
20768	CountCrossOrders	Conditional	Must be sent if LegMaxParticipationRate is set. Defaults to False.
20769	BidAskOnTheBook	No	Indicates if order is to bid on the book.
20770	ForceCompletion	No	Indicates if order is to execute whole quantity in spite of being of price.
20771	MaxReplaces	No	Defaults to 100
20772	OfferInterval	No	Indicates the interval of order change in the algo.
20773	ResetOrder	No	Indicates if order is to be reset.
20774	IgnoredQuantity	No	Defaults to 0
20775	MaxParticipationRate	No	Indicates the maximum volume of the market that the algo might make.
20776	MinParticipationRate	Not	Indicates the minimum volume of the market that the algo has to make.
20782	TargetSpread	Yes	Spread value used in multileg orders.
20783	WaitLeg	No	Indicates if algo should closed missed legs in the market or place an offer on the needed price. Even when set to false the maximum price difference allowed is 5 cents or basis points of the original leg price required. If that happens the algo will place a bid/offer in the max difference allowed. Default: False
20784	CompensateCoefficient	No	Indicates if the algo should make a TargetSpread correction in case of a miss leg execution that generates a bad result in order to compensate and try to achieve the original requested target spread. Default: True

20785	CancelOffersOutsideDepth	No	Indicates if algo should cancel the offers placed by it that fall out of the selected LegBidAskOnTheBookDepth tag.
20786	BidAskOnTheBookWithMargin	No	Indicates if the algo should Keep a margin for offers on proportionally larger lot sizes in case these are partially taken. Default: False
20788	StartLimit	No	Indicates the price trigger for a start order
20789	StartPx	No	Indicates the price to be sent on a triggered start order
20790	MarketValue	No	The spread value in the market during the time the algo was working
20791	ExecutedValue	No	The spread values actually executed by the algo.
20792	UsedValue	No	The spread value actually used by the algo.
20793	MarketVolume	No	The volume of the market during the order
20794	IsShort	No	Indicates if order is missing a leg
20795	ShortQty	No	Indicates the quantity missing on the leg
20796	ShortPrice	No	Indicates the price needed on the missing leg
20797	IsOverrun	No	Indicates if order was overrun by the exchange.
20804	MultipleOffers	No	If true, Robot will create an extra order when increasing Offer Qty. Useful to preserve queue order. Default: False
20805	WaitLargerSide	No	If true, Robot will wait for enough trades on the larger side to make a trade on the smaller side.

Field added to FIX specification

4.6 Order Replace Request (G)

The OrderModificationRequest (G) message is used for modifying a strategy orders with only one leg. It is also known as Order Cancel/Replace Request. The received request is validated and then sent to the Fast Trader platform. Below we show a more detailed view of the fields and accepted values for each strategy support with this type of message.

It is important to notice that only ONE open request is accepted therefore any order modification request received for a already pending replace algo order will be rejected.

All fields supplied on the NewOrderSingle (D) message should be filled again. Fields that may be modified are marked with 'Y' on the column 'Repl' from the tables shown on previous chapters (4.2 and 4.3).

To resume or suspend an order, an OrderReplaceRequet (G) may be sent only with the minimal identification fields. If no parameters fields are received, only a suspend or resume request is sent to the Robot. For Multileg orders replace requests, this is mandatory, as any replace request will suspend the Robot Order. We call this a "pure status replace". A pure replace will occur if only the following fields are sent on a ReplaceRequest (G): BeginString (8), BodyLength (9), MsgType (35), MsgSeqNum (34), SenderCompID (39), TargetCompID (56), HandlInst (21), SendingTime (52), TransactTime (60), ClOrdID (11), OrigClOrdID (41), OrderID (37), ExecInst (18), CheckSum (10).

'Pure status replace' request to resume order, without parameters, plain FIX

8=FIX.4.4 | 9=442 | 35=G | 34=207 | 49=TESTER | 52=20190731-13:57:27.995 | 60=20190731-13:57:27.983 | 56=PNT_DSA | 11=1-999 | 18=2 | 41=1-998

4.7 Multileg Order Cancel/Replace Request (AC)

This message will be used to make any changes in an algo order that has more than one leg. It works very similarly as the OrderCancelReplaceRequest. As was the case in single legged orders, we will have a section for each strategy type.

To resume or suspend an order, a MultilegOrderReplaceRequet (AC) may be sent only with the minimal identification fields. If no parameters fields are received, only a suspend or resume request is sent to the Robot. For Multileg orders replace requests, this is mandatory,

as any replace request will suspend the Robot Order. We call this a "pure status replace". A pure replace will occur if only the following fields are sent on a MultilegOrderReplaceRequet (AC): BeginString (8), BodyLength (9), MsgType (35), MsgSeqNum (34), SenderCompID (39), TargetCompID (56), HandlInst (21), SendingTime (52), TransactTime (60), ClOrdID (11),   OrigClOrdID (41), OrderID (37), ExecInst (18), CheckSum (10).

'Pure status replace' request to resume order, without parameters, plain FIX

8=FIX.4.4 | 9=442 | 35=AC | 34=207 | 49=TESTER | 52=20190731-13:57:27.995 | 60=20190731-13:57:27.983 | 56=PNT_DSA | 11=1-999 | 18=2 | 41=1-998

4.7.1   Multileg message replace flow and rules

All fields supplied on the NewOrderMultileg (AB) message should be filled again. Fields that may be modified are marked with 'Y' on the column 'Repl' from the tables shown chapter (4.3).

As the replace of algo orders involve a complex system and possibly a workflow scheme for approval of replaces, the system will not allow order replace chaining. Any replace request received for an order with a status of pending replace will be rejected.

Therefore the message flow is:
1. Fix Client sends a new multileg order replace to the Algo System
2. Algo system sends an execution report with tag MultiLegReportingType (442) = 3 indicating that the answer is treating the whole algo order. It will mirror all fields sent and actually taken in consideration by the system. **In some cases the system may change some values making auto-corrections.**
   a. If the order has errors in it, the order tag OrderStatus (39) will indicate '8' Rejected and the text field will have the reason for the clOrdId of the replaced order. The original order will still be in place
   b. If the order passed the first validation it may be sent for approval by a system administrator. In this case, OrderStatus (39) will be 'A' – PendingReplace and the text field will display the approval step.
   c. If the system administrator chose so, the algo order may be suspended while being approved. In these cases the text tag will indicate the status of the order.

d. If the order is accepted it will return the OrderStatus (39) = 5 Replaced

e. If the order replace was not approved the FIX client will receive an execution report with the ExecType='Rejected'

Replace request to resume order, without parameters, plain FIX

8=FIX.4.4 | 9=442 | 35=AC | 34=207 | 49=TESTER | 52=20190731-13:57:27.995 | 60=20190731-13:57:27.983 | 56=PNT_DSA | 21=4 | 11=1-999 | 18=2 | 41=1-998 | 37=dsa.1234

4.8 OrderCancelReject (9)

The OrderCancelReject (9) messages are received as a return from the exchange and indicate that a request for modification or cancelation has been rejected. The following fields take part in the message:

Tag	Name	Required	Remarks
1	Account	Yes	Client account number used by the order.
11	ClOrdID	Yes	The new order identifier assigned by the client.
22	SecurityIDSource	No	Identifies class or source of the SecurityID field. Required when SecurityID field is sent. Valid Value 8 – Exchange Symbol
37	OrderID	Yes	Order unique identifier provided by the OMS. It is kept the same throughout the order life span.

39	OrdStatus	Yes	Current order status. Valid values: 0 – New 1 – Partially Filled 2 – Filled 4 – Canceled 5 – Replaced (only FIX 4.2) 6 – Pending Cancel 8 – Rejected 9 – Suspended C – Expired The order status Z (Previous Final State) is not sent by Fast OMS, being replaced by the previous received status.
41	OrigClOrdID	No	Original client order identifier. Refers to the order that was not modified/canceled.
48	SecurityID	No	The security ID of the traded instrument as defined by BM&FBOVESPA.
54	Side	Yes	Order side. Accepted values: 1 – Buy 2 – Sell
55	Symbol	Yes	The symbol of the traded instrument.
58	Text	No	Text field. Informs more details about this rejection.
102	CxlRejReason	No	Rejection reason code. Valid values range from 0 to 999999. Please refer to the error codes document for more information.
434	CxlRejResponseTo	Yes	Identifies type of request being rejected. Valid values: 1 – OrderCancelRequest 2 – OrderModificationRequest
453	NoPartyID	Yes	Number of repeating groups for parties. Returns groups automatically set by Fast OMS with the client registered data.
→448	PartyID	Yes	Used to identify the source of PartyID.

→447	PartyIDSource	Yes	Identifies class or source of the PartyID. Accepted value: D – Proprietary/Custom code
→452	PartyRole	Yes	Identifies the role of the PartyID. Accepted values: 4 – Clearing Firm 5 – Investor ID 7 – Entering Firm 12 – Executing Trader 36 – Entering Trader 40 – Transfer to Firm 46 – Foreign Firm 54 – Sender Location ID 99 – Originating Market 1001 – Order Originating Session
581	AccountType	No	Type of Account associated with an order. Valid values: 38 – Remove Account Information 39 – Regular Account 40 – Give Up Link Identifier Its value was previously sent by Fast OMS to the exchange according the client registered data.
5149	Memo	No	Free format text string. Sent by the market participant client and limited to 50 characters.

Field added to EntryPoint FIX specification

Field modified from EntryPoint FIX specification

Field removed from EntryPoint FIX specification

Fast OMS doesn't change any of the original message fields before sending through to the client connection. Refer to *EntryPoint Message Specification* document for further information.

5   OrderCancelRequest

The OrderCancelRequest <F> message is used to cancel a previously sent order. The following fields take part in the message:

Tag	Name	Required	Remarks
1	Account	No	Client account number used by the order.
11	ClOrdID	Yes	New client order identifier assigned by the client to the order being canceled. Must be unique throughout a day or during the life span of the sent orders. It has a maximum length of 28 characters.
37	OrderID	No	Unique order identifier assigned by the OMS. Use this field for a faster order cancel request routing.
38	OrderQty	No	Ordered quantity of shares or contracts. Not required.
41	OrigClOrdID	Yes	The original client order identifier. Refers to the order that is being canceled.
54	Side	Yes	The side of the order. Accepted values: 1 – Buy 2 – Sell
55	Symbol	Yes	The symbol of the traded instrument.
58	Text	No	Text field. Maximum length 255 characters.
60	TransactTime	Yes	The date and time of the cancelation request in UTC format.

☐ Field added to EntryPoint FIX specification

Other fields and their values are ignored by Fast OMS, being forwarded to the exchange unchanged. Refer to *EntryPoint Message Specification* document for further information.

6 Order Mass Status Request

Orders available in Robot`s memory may be read / requested through an Order Mass Status Request (AF) message. Answer will consist in a sequence of Execution Report (8) messages, one for each found order.

If systems are still starting on the start of the day or after a crash, request will be rejected with a Business Message Reject (j) with BusinessRejectReason (380) = Application not available (4) and a description on field Text (58).

Invalid message formations will also be rejected with the same Business Message Reject (j) and other BusinessRejectReason (380). Always with a description on field Text (58).

Tag	Name	Req	Remarks
35	MsgType	Yes	Order Mass Status Request (AF)
584	MassStatusReqID	Yes	Client defined identifier. Will be replied on the same field on all sent Execution Report (8).
585	MassStatusReqType	Yes	The order selection criteria: 7- Status for all orders (Not yet implemented) 9- Orders for account
1	Account	Cond	Required if MassStatusReqType (585) = 9
453	NoPartyIDs	No	Required if MassStatusReqType (585) = 9 and InvestorID / Brazillian CPF validation is enabled.
→ 448	PartyID	Cond	Final client's InvestorID.(5) Required if NoPartyIDs (453) is not 0.
→ 447	PartyIDSource	Cond	Expected: Proprietary/Custom code (D) Required if NoPartyIDs (453) is not 0.
→ 452	PartyRole	Cond	Expected: InvestorID (5) Required if NoPartyIDs (453) is not 0.

7   Order Flow examples

7.1   Bear Call/Bull Put Spread

When inserting a bear call spread these are the following messages exchanged between the application. First a new order multiLeg is sent. In this example we are using the leg quantities defined directly into the legs:

FIX Client sends a new order for a Bear Call spread between PETR3 and PETR4

8=FIX.4.4 9=174 35=D 34=13 49=TESTER1 52=20121003-19:07:51.759 56=PNT_ROBOT 11=20121003160723 21=4 38=2000 40=2 54=B 55=PETR3;PETR4 59=6 60=20121003-19:07:51 126=20121003-21:07:51 847=1002 555=2 600=PETR3 616=XBSP 624=1 687=1000 670=1 671=10 20778=500 20779=1 600=PETR4 616=XBSP 624=2 687=1000 670=1 671=10 20778=500 20779=1 20769=Y 20781=3 20782=2.91 20783=N 20784=Y 20786=N 10=051

When the message arrives in the server it will be checked, validated and then set up for approval. If the validations are ok, the FIX client will receive an Execution report confirming the data for the order accepted by the algo trading system and with a pending new status.

8=FIX.4.4 9=174 35=8 34=20 49=PNT_ROBOT 52=20121003-19:07:51.759 56=TESTER1 6=0 11=20121003160723 14=0 17=dsa.1 21=4 37=dsa.151 38=2000 39=A 40=2 54=B 55=PETR3;PETR4 58=Order is SUSPENDED and pending approval by AUTHORIZED user or supervisor. 59=6 60=20121003-19:07:51 126=20121003-21:07:51 150=A 151=2000 442=3 847=1002 555=2 600=PETR3 616=XBSP 624=1 654=0 687=1000 670=1 671=10 20778=500 20779=1 600=PETR4 616=XBSP 624=2 654=1 687=1000 670=1 671=10 20778=500 20779=1 20769=Y 20781=3 20782=2.91 20783=N 20784=Y 20786=N 10=051

The message in the text field is dependent on the algo system configuration by its administrators. Once the order is approved the FIX client will receive another execution report indicating that the order is working with the "New" status.

8=FIX.4.4 9=299 35=8 34=22 49=PNT_ROBOT 56=TESTER1 52=20121003-19:17:41.508 6=0 11=20121003160723 14=0 17=Accepted_is.466 21=4 37=dsa.151 38=2000 39=0 40=2 54=B 55= PETR3;PETR4 59=6 60=20121003-19:07:51 126=20121003-22:26:00 150=0 151=2000 442=3 847=1002 555=2 600=PETR3 616=XBSP 624=1 654=0 687=1000 670=1 671=10 20778=500 20779=1 600=PETR4 616=XBSP 624=2 654=1 687=1000 670=1 671=10 20778=500 20779=1 20769=Y 20781=3 20782=2.91 20783=N 20784=Y 20786=N 10=051

From now on the order will receive execution reports for the specific legs when trades occur.

First Leg execution:

8=FIX.4.4 9=299 35=8 34=24 49=PNT_ROBOT 56=TESTER1 52=20121003-19:17:41.508 6=25.87 11=20121003161723 14=500 17=23223.0 31=25.87 32=500 37=dsa.151 38=1000 39=1 54=1 55=PETR3 150=F 151=500 442=2 654=0 10=57

Second leg execution:

8=FIX.4.4 9=299 35=8 34=25 49=PNT_ROBOT 56=TESTER1 52=20121003-19:17:41.508 6=25.87 11=20121003161723 14=500 17=23223.1 31=23.36 32=500 37=dsa.151 38=1000 39=1 54=2 55=PETR4 150=F 151=500 442=2 654=1 10=59

At the end of the order an execution report with exec type=OrderStatus will be sent with the overview of the algo order.

8=FIX.4.4 9=174 35=8 34=30 49=PNT_ROBOT 52=20121003-19:07:51.759 56=TESTER1 6=0 11=20121003160723 14=2000 17=Filled_is.6543 21=4 37=dsa.151 38=2000 39=2 40=2 54=B 55=PETR3;PETR4 58=Order is Filled 59=6 60=20121003-19:07:51 126=20121003-21:07:51 150=I 151=0 847=1002 555=2 600=PETR3 616=XBSP 624=1 654=0 687=1000 670=1 671=10 20778=500 20779=1 600=PETR4 616=XBSP 624=2 654=1 687=1000 670=1 671=10 20778=500 20779=1 20769=Y 20781=3 20782=2.91 20783=N 20784=Y 20786=N 20790=2.89 20791=2.91 20192=2.91 20797=N 10=051

7.2 Order Mass Status Request

Order status requests are sent in one of the following formats. Each search criteria may be enabled or disabled in server configurations:

8=FIX.4.4|35=AF|49=PNT_DSA|56=TESTER|584=a|585=9|1=4000

8=FIX.4.4|35=AF|49=PNT_DSA|56=TESTER|584=a|585=9|1=4000|207=XBSP

8=FIX.4.4|35=AF|49=PNT_DSA|56=TESTER|584=a|585=9|1=4000|207=XBSP|453=1|448=09876543210|452=5

8   Summary of TargetStrategy Values

Strategy Name	TargetStrategy Tag (847) Value
VWAP	1
TWAP	1000
Volume Participation	2
Sniper	1011
Best-Offer	1009
Best-Offer/Sniper	2009
Stop Loss/Take Profit	1014
Shortfall	1013
Iceberg	1026
VWAP (History)	1027
Auction Order	1030
Scheduled Order	1031
Cross-Sniper	1032
Routed Order	3001
Simple Order	1033
Cross order	1034
Linear Gradient	1035
Bull/Bear Call/Put Spread (Price or weighted price difference)	1002
Long/Short	1002
Multileg Spreader	1029
Cross TWAP	1028
Cross MultiLeg	1036