

Johannesburg Stock Exchange

Equity Market Trading and Information Solution

JSE Guidance Note

Volume D – Orders which do not execute against Pegged Hidden Limit Orders

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1 DOCUMENT CONTROL

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1.2 Document Information

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1.3 Revision History

Date	Version	Sections	Description
December 2014	1.00		Initial Draft
<u>October 2016</u>	<u>4.0</u>		<u>Amended to Include enhancements for ITaC 1 a EME</u> <u>Changed "Hidden Orders" to "Pegged Hidden Orders"</u>

1.4 References

Volume 00 - Trading and Information Overview

1.5 Contact Details

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2 OVERVIEW

There is a need to facilitate a form of a “negotiated trade” or “book over” in the central order book. However, Pegged Hidden Limit Orders add uncertainty to the execution of such negotiated trades. The introduction of the functionality detailed within this document is to remove this uncertainty by allowing the submission of negotiated visible orders that do not interact with Pegged Hidden Limit Orders in the order book. A new order attribute, will be introduced to allow traders to flag these types of orders accordingly. This type of order will be referred to as an EHL order.

EHL orders will only match with existing Visible Orders in the order book and will expire if the remainder is not filled within a defined period of time

This document should be read in conjunction with [Volume 00 – Trading and Information Overview](#).

3 FUNCTIONALITY

3.1 General Functionality

- 3.1.1.1 ~~The A-new~~ order attribute (i.e. Exclude Hidden Limit (EHL) Orders) ~~will be introduced in order to facilitate~~s the ability to exclude new Visible Orders from executing against Pegged Hidden Limit Orders when sweeping the order book.
- 3.1.1.2 An EHL order will execute against all visible orders on a Price- Time basis while excluding Pegged Hidden Limit orders within the given price points,
- 3.1.1.3 An EHL order can only be a Visible Limit Order. Furthermore, it can only be submitted with a TIF (Time in Force) of GTT (Good Till Time). Any other Order Type or TIF will not be allowed with this order attribute. The list of allowed Order Types and TIF combinations are given below:

TIF, ORDER TYPE AND ORDER ATTRIBUTE VALIDATIONS

	IOC	FOK	DAY	GFA	GFX	OPG	ATC	GTC	GTD	GTT	CPX	GDX	EHL	Market	Limit	Stop	Stop Limit	Cross	Pegged Hidden	Pegged Hidden Limit
IOC																				
FOK																				
DAY																				
GFA																				
GFX																				
OPG																				
ATC																				
GTC																				
GTD																				
GTT																				
CPX																				
GDX																				
EHL																				
Market																				
Limit																				
Stop																				
Stop Limit																				
Cross																				
Pegged Hidden																				
Pegged Hidden Limit																				

- 3.1.1.4 If an EHL order is entered and the order type is not a "Limit" order the System will reject such an order via an Execution Report with a reject code of '134019' and reject reason of 'Invalid order type (not permitted for EHL orders)'.
- 3.1.1.5 If an EHL order is entered and the TIF is not a "GTT" the System will reject such an order via an Execution Report with a reject code of '134024' and reject reason of 'Invalid TIF (not permitted for EHL orders)'.
- 3.1.1.6 The default expiry time for EHL orders is set to 2 seconds. This has been configured by the Exchange as the maximum time that an EHL order can rest in the order book. Any unexecuted EHL orders will expire within the defined time period. The reason for expiry should read 'EHL expiry time reached'.
- 3.1.1.7 This attribute will only be present in new order submissions. The ability to amend an existing order to be an EHL order or vice versa will not be allowed. Cancellation of EHL orders are allowed as long as the order has not expired or has been fully matched. The unexecuted portion of a partially filled order can be cancelled.

- 3.1.1.8 Orders with the EHL order attribute can be amended. Amendment to the following field(s) will only be allowed:
- Order Price
 - Order Size
 - Client ID
- The EHL order can only be amended if the expiry time has not been reached and the order is still active on the order book.
- 3.1.1.9 If EHL orders are submitted for an instrument that is not configured to accept EHL orders, the System will reject such an order via an Execution Report with a reject code of **'134022'** and a reject reason of **'EHL orders disabled for instrument'**.
The EHL order attribute will be enabled for all JSE segments that currently allows for Pegged hidden order functionality.
- 3.1.1.10 EHL orders can only be submitted with the TIF of GTT. Upon submission of an EHL order, it is required to specify an expiry time¹. However, it should be noted that the expiry time defined by a Trader in an EHL order will be overridden² to the default expiry time that is applicable, if the time specified by the Trader is greater than **2** seconds. The updated expiry time will be sent in the Execution Reports for the EHL order.
- 3.1.1.11 If the specified expiry time of an EHL order has already past and is earlier than the current system time, then the order will be rejected with a reject code of '001501' and a reject reason of 'Invalid Expire Time (elapsed)'.
- 3.1.1.12 The expiry time of an EHL order cannot be amended. Such an amendment will be rejected with a reject code of **'134023'** and a reject reason of **'Expiry time cannot be amended for EHL orders'**. This ensures that an EHL order will not persist in the order book by consistently amending the expiry time of such an order.
- 3.1.1.13 Submission of EHL orders will not be allowed when an instrument is in any other session other than Continuous Trading, Continuous Trading 1 or Continuous Trading 2. The System will reject such an order (submitted during other sessions) via an Execution Report with a reject code of **'134021'** and a reject reason of **'EHL not allowed during this session'**.
- 3.1.1.14 If an EHL order exists in the order book when the trading session moves from Continuous Trading, Continuous Trading 1 or Continuous Trading 2 to any other trading session (due to scheduled trading session transitions or trading session movements due to circuit breaker triggers), it will be expired immediately upon moving to the given session. The reason for expiration should read **'EHL not allowed during this session'** with the reject code of **'134021'**.
- 3.1.1.15 The expiry of an EHL order as mentioned above is applicable on all trading days (Normal day; Early Close day; or an FCO day).

¹ Time should be specified in the same format when submitting a GTT order i.e. YYYYMMDD-HH:MM:SS.

² Time will be replaced with Current Time + Default EHL EXPIRY TIME (S)

3.1.2 Order Book Priority and Executions

3.1.2.1 An EHL order would execute against all Visible Orders on a Price-Time basis while excluding Pegged Hidden Limit Orders within the given price points. It should be noted that the member trading process will be as follows:
Member puts in a Buy EHL order and a Sell EHL order. If there are no other Visible Orders at the same price or better, the 2 orders will match. If there are other orders at the same or better price, then those will execute first and then the remaining volume of the EHL order that came in second will match against the first EHL order.

3.1.2.2 When an EHL order rests in the order book after aggression, any Pegged Hidden Limit Orders being submitted to the order book and sweeping the order book should be excluded from executing against the aforementioned EHL order until the EHL order is cancelled or expires.

3.1.3 Changes to the behaviour of MES validations

3.1.3.1 It should be noted that the triggering of the filtering algorithm should not change with the introduction of EHL orders. Therefore the submission of an EHL order may trigger the filtering algorithm as per the current behaviour of the system.

3.1.3.2 The Filtering Algorithm used to evaluate the executable quantities considering each Pegged Hidden Limit order's MES constraint would require some modifications to ensure that EHL orders are not taken into consideration as described below.

3.1.3.3 The Filtering Algorithm calculates two values, namely the 'Volume Available' and 'Volume Ahead' which now have to be altered to exclude EHL orders.

Volume Available = the executable volume of eligible orders on the other side of the book (including Visible Orders **but excluding EHL orders**).

Volume Ahead = the executable volume of eligible orders on the same side of the book (including Visible Orders **but excluding EHL orders**) at a higher priority.

This applies to all Pegged Hidden Limit Orders being considered in the Filtering Algorithm. It should be noted that no additional latency will be introduced as a result of the implementation of EHL functionality.

(a) If there is a Visible Best Bid but no Visible Best Offer, the Target Trade Price will be the Visible Best Bid price at the beginning of the event being processed. If the Visible Best Bid is an EHL order, then the next available Visible Best Bid (which is not an EHL order) should be the Target Trade Price.

(b) If there is a Visible Best Offer but no Visible Best Bid, Target Trade Price will be the Visible Best Offer price at the beginning of the event being processed. If the Visible Best Offer is an EHL order, then the next available Visible Best Offer (which is not an EHL order) should be the Target Trade Price.

(c) If there is neither a Visible Best Bid nor a Visible Best Offer, but an automated or uncrossing trade has occurred today, the Target Trade Price will be the Last Automatic Trade Price (AT/UT).

(d) Otherwise, if no Automatic trade (AT/UT) has occurred today, the Target Trade Price will be the previous day's closing price and if no previous day's closing price then the reference price of the instrument. This may occur on the first day of trading of an instrument.

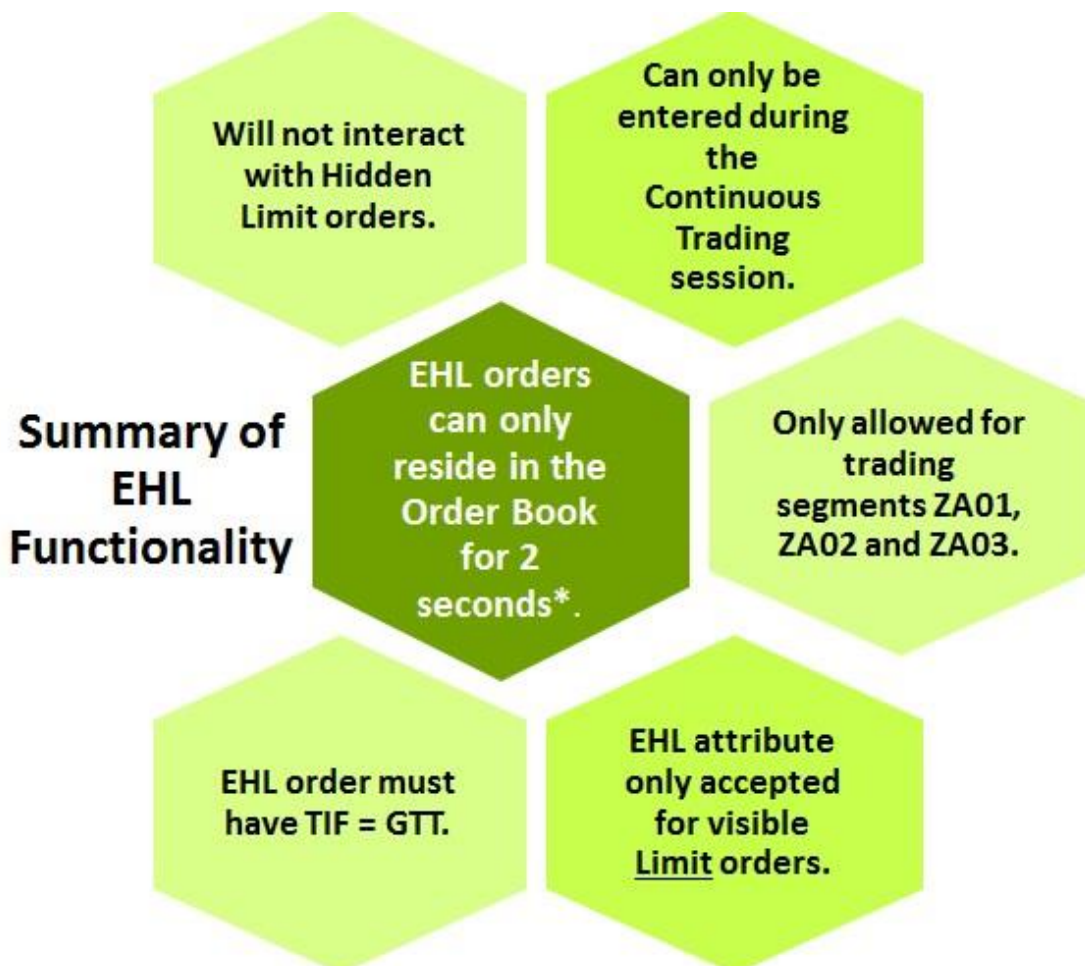
3.1.3.4 If the order book is locked/crossed due to Pegged Hidden Limit orders not being met prior to the aggression and the resulting execution price is going to trade through the best Visible Order(s) on the same side as the aggressing order (i.e. execution price is going to be at or outside the BBO), then the executions should not be carried out as per the price-visibility-time execution priority but the following should occur.

(a) If the aggressing order is an EHL order, there should be no change to the passive execution price. This would mean that the execution would be carried out at the passive price of the order book.

Limit orders and the limit price of the aggressing order is better than the limit price of the same side best Visible Order (which is not an EHL order) or if the aggressing order is a market order, the executions should be carried out at a defined number of ticks better than the best passive order (which is not an EHL order) on the same side.

- (b) If the aggressing order is not an EHL order, and it has sufficient quantity to match the Pegged Hidden Limit orders and the limit price of the aggressing order is better than the limit price of the same side best Visible Order (which is not an EHL order) or if the aggressing order is a market order, the executions should be carried out at a defined number of ticks better than the best passive order (which is not an EHL order) on the same side.
- (c) If the aggressing order is not an EHL order, and its limit price is the same as the limit price of the same side best Visible Order (which is not an EHL order), the executions should be carried out at the aggressing order's limit price following the execution of the best priced Visible Order (which is not an EHL order).
- (d) If the aggressing order is not an EHL order, and its limit price is worse than the limit price of the same side best Visible Order (which is not an EHL order), the executions will not happen and the aggressing order will either be added to the order book or expired (depending on the time in force).

3.2 Summary of Functionality



*Although EHL expiry time is defined as 2 seconds, orders will then expire between 2- 3 seconds.

3.3 Trading Schedules

3.3.1. Normal Day

NORMAL DAY

	START OF TRADING	OPENING AUCTION CALL	CONTINUOUS TRADING	CONTINUOUS TRADING 1	INTRADAY AUCTION CALL	CONTINUOUS TRADING 2	CLOSING AUCTION CALL	CLOSING PRICE PUBLICATION	CLOSING PRICE CROSS	EOD VOLUME AUCTION	POST CLOSE	TRADE REPORTING
ZA01	07:00 - 08:30	08:30 - 09:00	09:00 - 16:50				16:50 - 17:00	17:00 - 17:05	17:05 - 17:10	17:10 - 17:15	17:15 - 18:15	08:00 - 18:15
ZA02	07:00 - 08:30	08:30 - 09:00	09:00 - 16:50				16:50 - 17:00	17:00 - 17:05	17:05 - 17:10	17:10 - 17:15	17:15 - 18:15	
ZA03	07:00 - 08:30	08:30 - 09:00		09:00 - 12:00	12:00 - 12:15	12:15 - 16:50	16:50 - 17:00	17:00 - 17:05	17:05 - 17:10	17:10 - 17:15	17:15 - 18:15	
ZA06	07:00 - 08:30	08:30 - 09:00	09:00 - 16:50				16:50 - 17:00	17:00 - 17:05	17:05 - 17:10	17:10 - 17:15	17:15 - 18:15	
ZA12	07:00 - 08:30	08:30 - 09:00	09:00 - 17:00				17:00 - 17:10	17:10 - 17:15	17:15 - 17:20		17:20 - 18:15	
ZA11	07:00 - 08:30	08:30 - 09:00		09:00 - 12:00	12:00 - 12:15	12:15 - 16:50	16:50 - 17:00	17:00 - 17:05	17:05 - 17:10		17:10 - 18:15	
ZA04	07:00 - 08:30	08:30 - 09:10	09:10 - 16:49					16:49 - 16:50			16:50 - 18:15	
Functionality allowed	View open/expired orders; manage Off Book trades.	Order entry/amendment/deletion; manage Off Book trades.	Order entry/amendment/deletion; submission of orders with EHL flag; automatic matching; manage Off Book trades	Order entry/amendment/deletion; submission of orders with EHL flag; automatic matching; manage Off Book trades	Order entry/amendment/deletion; manage Off Book trades	Order entry/amendment/deletion; submission of orders with EHL flag; automatic matching; manage Off Book trades	Order entry/amendment/deletion; manage Off Book trades; unexecuted orders with EHL flag are expired	Closing price publication; order deletion; manage Off Book trades	Order entry, order modification (except price), order deletion; manage Off Book trades	Order entry at the closing price only / amendment of the size only / deletion	Order deletion; GTT orders are expired; manage Off Book trades	Manage Off Book trades

3.3.2. Early Close Day

EARLY CLOSE DAY

	START OF TRADING	OPENING AUCTION CALL	CONTINUOUS TRADING	CONTINUOUS TRADING 1	INTRADAY AUCTION CALL	CONTINUOUS TRADING 2	CLOSING AUCTION CALL	CLOSING PRICE PUBLICATION	CLOSING PRICE CROSS	EOD VOLUME AUCTION	POST CLOSE	TRADE REPORTING
ZA01	07:00 - 08:30	08:30 - 09:00	09:00 - 11:50				11:50 - 12:00	12:00 - 12:05	12:05 - 12:10	12:10 - 12:15	12:15 - 13:00	08:00 - 13:00
ZA02	07:00 - 08:30	08:30 - 09:00	09:00 - 11:50				11:50 - 12:00	12:00 - 12:05	12:05 - 12:10	12:10 - 12:15	12:15 - 13:00	
ZA03	07:00 - 08:30	08:30 - 09:00		09:00 - 11:00	11:00 - 11:15	11:15 - 11:50	11:50 - 12:00	12:00 - 12:05	12:05 - 12:10	12:10 - 12:15	12:15 - 13:00	
ZA06	07:00 - 08:30	08:30 - 09:00	09:00 - 11:50				11:50 - 12:00	12:00 - 12:05	12:05 - 12:10	12:10 - 12:15	12:15 - 13:00	
ZA12	07:00 - 08:30	08:30 - 09:00	09:00 - 12:00				12:00 - 12:10	12:10 - 12:15	12:15 - 12:20		12:20 - 13:00	
ZA11	07:00 - 08:30	07:00 - 08:30		09:00 - 11:00	11:00 - 11:15	11:15 - 11:50	11:50 - 12:00	12:00 - 12:05	12:05 - 12:10		12:10 - 13:00	
ZA04	07:00 - 08:30	08:30 - 09:10	09:10 - 11:49					11:49 - 11:50			11:50 - 13:00	
Functionality allowed	View open/expired orders; manage Off Book trades	Order entry/amendment/deletion; manage Off Book trades	Order entry/amendment/deletion; submission of orders with EHL flag; automatic matching; manage Off Book trades	Order entry/amendment/deletion; submission of orders with EHL flag; automatic matching; manage Off Book trades	Order entry/amendment/deletion; manage Off Book trades	Order entry/amendment/deletion; submission of orders with EHL flag; automatic matching; manage Off Book trades	Order entry/amendment/deletion; manage Off Book trades; unexecuted orders with EHL flag are expired	Closing price publication; order deletion; manage Off Book trades	Order entry, order modification (except price), order deletion; manage Off Book trades	Order entry at the closing price only / amendment of the size only / deletion	Order deletion; GTT orders are expired; manage Off Book trades	Manage Off Book trades

3.3.3. FCO Day

Schedule for instruments participating in the FCO Auction Call session:

FUTURES CLOSE OUT DAY SCHEDULE FOR INSTRUMENTS THAT WILL PARTICIPATE IN THE FCO AUCTION CALL SESSION

	START OF TRADING	OPENING AUCTION CALL	CONTINUOUS TRADING	CONTINUOUS TRADING 1	FCO AUCTION CALL	CONTINUOUS TRADING 2	CLOSING AUCTION CALL	CLOSING PRICE PUBLICATION	CLOSING PRICE CROSS	EOD VOLUME AUCTION	POST CLOSE	TRADE REPORTING
ZA01	07:00 - 08:30	08:30 - 09:00		09:00 - 12:00	12:00 - 12:15	12:15 - 16:50	16:50 - 17:00	17:00 - 17:05	17:05 - 17:10	17:10 - 17:15	17:15 - 18:15	08:00 - 18:15
ZA02								17:00 - 17:05	17:05 - 17:10	17:10 - 17:15	17:15 - 18:15	
ZA03								17:00 - 17:05	17:05 - 17:10	17:10 - 17:15	17:15 - 18:15	
ZA06								17:00 - 17:05	17:05 - 17:10	17:10 - 17:15	17:15 - 18:15	
Functionality allowed	View open/expired orders; manage Off Book trades	Order entry/amendment /deletion; manage Off Book trades	Order entry/amendment/ deletion; submission of orders with EHL flag; automatic matching; manage Off Book trades	Order entry/amendment/ deletion; submission of orders with EHL flag; automatic matching; manage Off Book trades	Order entry/amendment/ deletion; manage Off Book trades	Order entry/amendment/ deletion; submission of orders with EHL flag; automatic matching; manage Off Book trades	Order entry/amendment/ deletion; manage Off Book trades; unexecuted orders with EHL flag are expired	Closing price publication; order deletion; manage Off Book trades	Order entry, order modification (except price), order deletion; manage Off Book trades	Order entry at the closing price only / amendment of the size only / deletion	Order deletion; GTT orders are expired; manage Off Book trades	Manage Off Book trades

Schedule for instruments not participating in the FCO Auction Call session:

SCHEDULE FOR INSTRUMENTS THAT WILL NOT PARTICIPATE IN THE FCO AUCTION CALL SESSION

	START OF TRADING	OPENING AUCTION CALL	CONTINUOUS TRADING	CONTINUOUS TRADING 1	INTRADAY AUCTION CALL	CONTINUOUS TRADING 2	CLOSING AUCTION CALL	CLOSING PRICE PUBLICATION	CLOSING PRICE CROSS	EOD VOLUME AUCTION	POST CLOSE	TRADE REPORTING
ZA02	07:00 - 08:30	08:30 - 09:00	09:00 - 16:50				16:50 - 17:00	17:00 - 17:05	17:05 - 17:10	17:10 - 17:15	17:15 - 18:15	08:00 - 18:15
ZA03	07:00 - 08:30	08:30 - 09:00		09:00 - 12:00	12:00 - 12:15	12:15 - 16:50	16:50 - 17:00	17:00 - 17:05	17:05 - 17:10	17:10 - 17:15	17:15 - 18:15	
ZA06	07:00 - 08:30	08:30 - 09:00	09:00 - 16:50				16:50 - 17:00	17:00 - 17:05	17:05 - 17:10	17:10 - 17:15	17:15 - 18:15	
ZA11	07:00 - 08:30	08:30 - 09:00		09:00 - 12:00	12:00 - 12:15	12:15 - 16:50	16:50 - 17:00	17:00 - 17:05	17:05 - 17:10		17:10 - 18:15	
ZA04	07:00 - 08:30	08:30 - 09:10	09:10 - 16:49					16:49 - 16:50			16:50 - 18:15	
ZA12	07:00 - 08:30	08:30 - 09:00	09:00 - 17:00				17:00 - 17:10	17:10 - 17:15	17:15 - 17:20		17:20 - 18:15	
Functionality allowed	View open/expired orders; manage Off Book trades	Order entry/amendment /deletion; manage Off Book trades	Order entry/amendment/ deletion; submission of orders with EHL flag; automatic matching; manage Off Book trades	Order entry/amendment/ deletion; submission of orders with EHL flag; automatic matching; manage Off Book trades	Order entry/amendment/ deletion; manage Off Book trades	Order entry/amendment/ deletion; submission of orders with EHL flag; automatic matching; manage Off Book trades	Order entry/amendment/ deletion; manage Off Book trades; unexecuted orders with EHL flag are expired	Closing price publication; order deletion; manage Off Book trades	Order entry, order modification (except price), order deletion; manage Off Book trades	Order entry at the closing price only / amendment of the size only / deletion	Order deletion; GTT orders are expired; manage Off Book trades	Manage Off Book trades

4 SUMMARY OF IMPACT

4.1 Gateway Changes

Matching Engine	<ol style="list-style-type: none">1. Changes to MES validations, Filtering Algorithm, Uncrossing Algorithm and passive price determination for Pegged hidden order executions.2. New order attribute (EHL) introduced.
FIX Trading Gateway	<ol style="list-style-type: none">1. New field added to the New Order – Single and Execution Report messages.
Native Gateway	<ol style="list-style-type: none">1. New field added to the New Order and Execution Report messages.
Drop Copy Gateway	<ol style="list-style-type: none">1. New field added to the Execution Report message.

4.2 Reject Reasons

The following reject codes will be generated for EHL orders.

Reject Code	Reject Reason
134019	Invalid order type (not permitted for EHL orders)
134020	EHL is not permitted for this order book*
134021	EHL not allowed during this session
134022	EHL orders disabled for instrument
134023	Expiry time cannot be amended for EHL orders
134024	Invalid TIF (not permitted for EHL orders)
134025	Hidden order cannot be EHL

**Applicable to Bulletin Board functionality, this is not applicable to the JSE.*