
Johannesburg Stock Exchange

Trading and Information Solution

JSE Specification Document

Volume 00D – Trading and Information Overview for the Derivative Markets

TABLE OF CONTENTS

1	OVERVIEW	14
1.1	Nutron Way versus New Way to connect to the JSE Trading System	14
2	CONNECTING TO THE JSE TRADING SYSTEM.....	15
2.1	Gateways and Services	15
2.2	Connectivity requirements.....	16
2.3	Technical API specifications per Gateway and Service.....	16
2.4	Firm connectivity via ComplIDs	18
2.4.1	ComplIDs assigned on a Gateway level	19
2.4.2	Market-specific roles.....	20
2.4.3	ComplID known as a Default User.....	20
2.4.4	ComplID naming conventions	20
2.4.5	Trading Member connectivity to the JSE Trading System	22
2.4.6	Clearing Member connectivity to the JSE Trading System.....	23
2.4.7	Information Subscriber connectivity to the JSE Trading System.....	24
3	FIRM STRUCTURE LAYOUT PER THE JSE TRADING SYSTEM	25
3.1	Trading Member structure	25
3.2	Clearing Member structure	27
3.3	Clearing Member structure (CMs who trade on behalf of their clients)	28
3.4	Information Subscriber structure	30
4	INSTRUMENT MANAGEMENT	32
4.1	Unique Identification of Instruments	32
4.2	Types of Instruments.....	32
4.2.1	Futures	32
4.2.2	Options.....	35
4.2.3	Inverse Calendar Spreads.....	37
4.2.4	Forward Forwards	38
4.2.5	Delta Options	38
4.2.6	Structured Products	38
4.3	Instruments created intra-day	40
4.3.1	JSE-created Structured Products.....	40
4.3.2	JSE-created auto-generated Options	40
4.3.3	Client-created Instruments	40
4.4	Segments.....	49
4.4.1	Equity Derivatives Segments.....	49
4.4.2	Currency Derivatives Segments	49
5	TRADING SESSIONS	50
5.1	Normal Book Trading Sessions	50
5.2	Reported Trading Sessions	50
5.3	Trade Negotiation Sessions	50
5.4	Start of Trading Session.....	51
5.5	Opening Auction Call Session	51
5.6	Volatility Auction Call Session (triggered)	52
5.7	Intraday Auction Call Session	53
5.8	Closing Auction Call Session	54
5.9	Daily Trading Day Life Cycle.....	55
6	TRADING	58

6.1	Order Management.....	58
6.1.1	Cancel on Disconnect/Logout	58
6.1.2	Order Types.....	59
6.2	Quote Management	62
6.3	Trade and Drop Copy functionality	63
6.3.1	Trade and Drop Copy connection within a Firm	64
6.3.2	Trade and Drop Copy connection between Firms.....	65
6.4	Circuit Breakers and Price Bands.....	65
7	IMPLIED ORDERS	67
7.1	Three types of Implied Orders	67
7.2	Market Data Publication and Messaging regarding Implied Orders	67
7.3	Implied In Orders.....	68
7.3.1	Price derivation of Implied Orders	68
7.3.2	Quantity derivation of Implied Orders	68
7.3.3	Generation of Implied In Orders	68
7.3.4	Ownership of Implied In Orders.....	69
7.3.5	Price improvement on Implied In Order Executions	69
7.4	Implied Out Orders.....	69
7.4.1	Price derivation of Implied Out Orders	70
7.4.2	Quantity derivation of Implied Out Orders	70
7.4.3	Generation of Implied Out Orders	70
7.4.4	Ownership of Implied Out Orders	70
7.4.5	Execution of Implied Out Orders.....	70
7.4.6	Example of Implied Out Order price determination	70
7.4.7	Implied Across Orders	71
7.4.8	Price derivation of Implied Across Orders.....	72
7.4.9	Quantity derivation of Implied Across Orders	72
7.4.10	Generation of Implied Across Orders.....	73
7.4.11	Execution of Implied Across Orders	73
7.4.12	Price improvement on Implied Across Order executions	74
7.4.13	Leg Trade Pricing	75
7.5	Rules regarding Implied Order generation.....	75
7.5.1	Priority of Implied Order generation.....	75
7.5.2	Rules for Implied Order generation	75
7.5.3	Allocation of Base Order Quantity	76
7.5.4	Order Type and TIF.....	76
7.5.5	Deleting, re-evaluating and resizing of Implied Orders	76
7.5.6	Amendments/cancellations of Implied Orders	76
7.5.7	Special scenarios regarding Implied Order executions	76
7.5.8	Price Monitoring	76
7.5.9	Lot Size Violation	77
7.5.10	Tick Size Violation.....	77
7.5.11	Executions taking place with the same Base Order	77
7.6	On Book Strategy Trading	77
8	REPORTED TRADING	78
8.1	Reported Trade overview.....	78
8.2	Reported Trade Reporting Models.....	78
8.3	Reported Trade matching	78
8.3.1	FX – Currencies Market Reported Trade matching	79
8.3.2	EDM – Equity Derivatives Reported Trade matching	79
8.3.3	Backdated Reported trade submissions.....	79
8.3.4	Breached Price Bands.....	80
8.4	Trading Strategies using Reported trades	80

9	APPENDIX A – TRADE SUB-TYPES	81
10	APPENDIX B - IMPLIED ORDER EXAMPLES	83
10.1	Example 1: Implied orders can be generated only by the quantity at the best price point in the Spread Order Book	83
10.2	Example 2: Generating an Implied Out Order anchoring off the quantity at the best visible offer price.....	83
10.3	Example 3: Execution of an Implied Order	83
10.4	Example 4: Creation of implied buy and sell Orders against a specific Spread order	84
10.5	Example 5: Cumulating orders at best price in the anchoring Order Books to create an Implied Order	85
10.6	Example 6: Implied behaviour during order amendments (both in the Spread Books and the Outright Books)	85
10.7	Example 7: Implied orders are only created using the best bid and offer price points in the anchoring security Order Book.....	87
10.8	Example 8: Deletion of a spread order will result in the deletion of the Implied Orders	88
10.9	Example 9: A complete execution of a spread order in the spread Order Book results in the deletion of the Implied Orders	88
10.10	Example 10: A partial execution of a spread order in the spread Order Book results in the amendment of the Implied Orders	89
10.11	Example 11: All spread orders at the best price point will result in Implied Orders if sufficient quantity exists in the Leg Order Books.....	90
10.12	Example 12: Amendments to Implied Order due to a resultant loss of priority of a spread order	91
10.13	Example 13: An increase in size at the best price point of the anchoring Order Book will result in an increase of size of the Implied Order	91
10.14	Example 14: Generating an implied in order for the strategy anchoring the best visible orders in the Leg Instruments.....	92
10.15	Example 15: Generating implied across orders from spread to spread	93
10.16	Example 16: Generating implied on Implied Orders	93
10.17	Example 17: Generating Implied Across Orders on implied from spread to spread	94
10.18	Example 18: Creation of Implied Out Orders in an Inverse Order Book	95
11	APPENDIX C - EXAMPLES OF STOP ORDERS AND STOP LIMIT ORDERS.....	97
11.1	Stop Order example	97
11.2	Stop Limit Order example	98

Document Information

Drafted By	JSE Trading and Market Services
Status	Final
Version	1.03
Release Date	April 2018

Revision History

Date	Version	Description
January 2017	1.00	Initial Release
March 2017	1.01	Updates to Implied Order functionality Updates to Trade Sub Types table
November 2017	1.02	4.4 Update to Segment list for Equity and Currency Derivative - Removed EDMD01 and FXMD01 segments - Updated JSEDTOP segment name to JSEDTP 6.4 Update to include Circuit Breaker and Price Band values for each market
June 2018	1.03	6.5 Added Market Data Attribute section Added VWAP Added Open Interest

Contact Details

JSE Limited Trading and Market Services One Exchange Square Gwen Lane, Sandown South Africa Tel: +27 11 520 7000 www.jse.co.za	Client Services Centre Email: CustomerSupport@jse.co.za Tel: +27 11 520 7777
---	---

Disclaimer: All rights in this document vests in the JSE Limited ("JSE") and Millennium IT Software (Private) Limited ("Millennium IT"). Please note that this document contains confidential and sensitive information of the JSE and Millennium IT and as such should be treated as strictly confidential and proprietary and with the same degree of care with which you protect your own confidential information of like importance. This document must only be used by you for the purpose for which it is disclosed. Neither this document nor its contents may be disclosed to a third party, nor may it be copied, without the JSE's prior written consent. The JSE endeavours to ensure that the information in this document is correct and complete but do not, whether expressly, tacitly or implicitly, represent, warrant or in any way guarantee the accuracy or completeness of the information. The JSE, its officers and/or employees accept no liability for (or in respect of) any direct, indirect, incidental or consequential loss or damage of any kind or nature, howsoever arising, from the use of, or reliance on, this information.

Glossary

Definition	Description
Automated Trades (AT)	Automated Trades refer to Central Order Book Trades that are executed automatically during the Continuous Trading Session.
Base Orders	Orders that are used to generate Implied Orders are termed Base Orders.
Business Day	A Business Day is any day except Saturday, Sunday, a public holiday, or any other day that the JSE is closed.
Central Order Book	The Central Order Book is the Order Book of the JSE Trading System in which Automated Trades, and Auction Trades, occur.
Circuit Breaker (CB)	A Circuit Breaker prevents unnatural price movements on an instrument by triggering a Volatility Auction Call Session. Circuit Breakers are measures that are implemented to curb panic-selling and excessive volatility in individual securities. Circuit Breakers temporarily halt trading on an Exchange, or in individual securities, when prices hit pre-defined tripwires. This provides traders with an opportunity to correct the order price, if necessary, or to adjust the market sentiment.
Circuit Breaker Tolerance	Circuit Breaker Tolerance defines the maximum allowed change, as a percentage, of the next possible trade's price from the Static or Dynamic Reference Price. If the difference between the price of the next trade and the Static Reference Price or Dynamic Reference Price is equal or greater than that permitted by the Circuit Breaker Tolerance, defined for the relevant session, the instrument will automatically be moved into a Volatility Auction Call session.
CompID	Refer to the section Firm connectivity via CompIDs for a complete description of a CompID.
Confirmed Reported Trade	Transactions that are reported to the JSE Systems as valid Reported Trades.
Continuous Trading Session	The Continuous Trading Session defines a session where the orders are continuously executed on a price-visibility-time priority. During this period, orders are executed immediately.
Default User	A "Default User" is a specific CompID that is used to allow Firms to perform Reported Trading functionality.
Dynamic Reference Price	The Dynamic Reference Price applicable to an instrument is updated continuously during the course of a day and serves as a reference point when calculating the price of an instrument during either an Auction or Continuous Trade. At the start of the day, the Dynamic Reference Price for an instrument will be the previous day's closing price.

Definition	Description
Elected Order	An Elected Order is any order that has moved from a parked state into an active state, be it through a Stop Limit being triggered or a session coming into effect, for which certain conditions apply.
Execution Report	An Execution Report is the acknowledgement by the JSE Trading System of either the acceptance or rejection of a new order or an order amendment and the indication of the order status. Each Execution Report displays a status, which specifies whether the order is filled, suspended, cancelled, expired, partially filled, new or rejected.
Firm ID	A Firm ID is an identification code that uniquely identifies a Firm, and is used for inter-Firm trade reporting. This is the same code as a PIC (Firm Identification Code).
Implied Chain	An Implied Chain is a mechanism by which the JSE Trading System tracks the explicit, that is, non-implied/trader-submitted, Base Orders that contribute to an Implied Order. The number of such explicit orders, that contribute to the Implied Chain, is known as the Implied Chain Length.
Implied Order	An Implied Order is an Order generated synthetically from two outright regular orders that are already registered in the Order Book. These two Orders could be constituted from either two individual legs or one individual leg and a strategy involving that leg.
Incoming Order	An Incoming Order is an Order that is submitted to the JSE Trading System.
Indicative Auction Information	The Indicative Auction Price (if any) and the Indicative Auction Volume (if any) at the Indicative Auction Price.
Indicative Auction Price (IAP)	The Indicative Auction Price is the price at which orders, participating in an auction, are at that moment in time, expected to 'uncross'. The Indicative Auction Price is calculated throughout the auction using the Volume Maximising Auction Algorithm (relevant to each auction), which is applied to orders for an instrument. If the JSE Trading System cannot determine an Auction Uncrossing Price, then no Indicative Auction Price will be published.
Indicative Auction Volume	This is the expected tradable volume at the Indicative Auction Price, using the Volume Maximizing Auction Algorithm, at that moment in time, should an 'uncrossing' take place.
Information Subscriber	An Information Subscriber has 'access privileges' to receive Market Operations news and Market Data updates from the Exchange. An Information Subscriber does <u>not</u> have access to the Trading Gateways.

Definition	Description
Instrument	An Instrument refers to a unique tradable entity. All trading takes place at an instrument level. This includes all types of Derivative Markets instrument types, for example, Futures, Options, Inverse Calendar Spreads, etc.
Inter-day	This is the period outside of the Intra-day period.
Intra-day	This period falls within the normal trading periods of the markets.
Inverse Calendar Spread	An instrument that allows a strategy where the Firm trades on the spread of the same underlying instrument, resulting in a buy of the far expiry, and a sell of the near expiry.
IOC (Immediate or Cancel)	An 'immediate or cancel' order (IOC) is an order to buy or sell an instrument that must be executed immediately, and any portion of the order that cannot be immediately filled is cancelled. An IOC order is use to specify how long the order remains active in the market and under what conditions the order is cancelled.
ISIN	International Securities Identification Number
JSE	Johannesburg Stock Exchange
JSE Trading System	The JSE Trading System refers to the JSE Derivatives and Bond Market Trading and Information Solution.
Leg Instrument	A leg is one component of a derivatives trading strategy, in which a trader combines multiple options contracts or multiple futures contracts (or rarely, combinations of both) in an attempt to hedge a position, benefit from arbitrage, or profit from a spread. Within these strategies, each derivative contract or position in the underlying security is called a leg.
Limit Order	A Limit Order refers to an order where the number of shares, and price (the 'limit'), are specified. Limit Orders are used by investors who have decided on the price at which they are willing to trade. A Limit Order sets the maximum price at which an investor will pay for a security, or the minimum at which an investor will sell a security. A Limit Order is not an immediate order - rather it requires the Broker to hold the security until such time that the desired price is reached.
Lot Size	This is the minimum order size of an instrument.
Market	The JSE supports the Equity, Interest Rate and Currency Derivative, Equity Derivative and Commodity Derivative Markets, as well as the Bond Market.
Market Data	All information about the Market, Prices and Sessions available throughout a trading day. This information is common to the whole market.

Definition	Description
Market End	Market End refers to the close of the current trading day. The Market End is published through the Market Data Gateways . Any remaining orders, that are only valid for the current day, will be expired during this period.
Market Operations Announcements	These are Exchange announcements disseminated to all Firms connected to the Derivatives Market Data Gateways. An announcement can relate to the market in general, for example, a market-wide halt, or to a particular instrument, for example, a suspension. Market Operations Announcements can also be sent directly to Trading Member Firms directly connected to the Trading Gateways. These are private messages and are not visible to the public.
Market Order	A Market Order refers to an order where no Limit Price is specified, and only the volume of shares, to be executed, is specified on the order. A Market Order will execute against as many orders on the opposite side of the Order Book as are necessary in order to fill the order.
Market Order Extension	A Market Order Extension refers to a time extension to an Auction Call Session. A Market Order Extension, to an Auction Call Session, will be triggered if there are Market Orders within the Order Book that are not executable or only partially executable, that is, there is a Market Order surplus at the end of the Auction Call Session.
Market Start	Market Start refers to the time that the Market opens on the current trading day.
Maximum Quantity	The Maximum Quantity is also known as the Maximum Order Size, and defines the maximum allowed quantity of an order.
Negotiated Order Book	This is the Order Book which provides 'Request for Quote' functionality. All trades executed through this mechanism are considered negotiated trades.
Reported trade	This is a trade that is negotiated outside of the JSE Trading System, yet reported to the JSE Trading System, in accordance with the JSE Rules and Directives.
On-Book trade	An On-Book trade is automatically executed in the JSE Trading System. It can either be an Automated Trade or an Uncrossing Trade.
<u>Open Interest</u>	<u>The number of contracts (Options and/or Futures) both long and short that are held by market participants on the JSE Trading System at any given time.</u>
Open Order	An Open Order identifies an order that has a remaining quantity in the Order Book. An amendment or a cancellation can be done for an Open Order.
Opening Auction Uncrossing Trade Price	The opening price of an instrument will be determined by the first trade.
Order Book	An order book is the list of orders that the exchange uses to record the interest of buyers and sellers in a particular instrument.

Definition	Description
	It is an order matching facility where members participate on equal terms, competing for execution on the basis of strict price visibility time rules. The JSE trading engine determines which buy and sell orders can be matched. When order matching occurs, a trade is executed. Trading is anonymous and neither buyer nor seller will ever know who their order was matched against
Order Quantity	The Order Quantity refers to the quantity of instruments being bought or sold. This should be a whole number that is greater than zero and a multiple of the instrument's Lot Size.
Overall BBO (Best Bid Offer)	The Overall Best Bid Offer refers to the best buy order price and the best sell order price out of all existing orders.
Parked Order	An order that is submitted by a Firm will be held in the JSE Trading System until the applicable period is reached, at which point it is passed on to the Order Book. GFA, GFX, ATC and CPX orders will be parked until the relevant auction call phase is started. Unelected Stop Orders and Stop Limit Orders are parked until the Stop Price is reached. Whilst the order is held by the JSE Trading System it is not publicly visible and does not participate in continuous trading/ inapplicable Auction Call sessions. Parked orders may still be modified and deleted. The ability to park orders prior to the period they are intended for, ensures that they have a higher priority when going into the period. Parked orders that are not matched at the end of the Auction Call session will be parked until the next Auction Call session. The orders will then be deleted at the end of the day.
Participant Identification Code (PIC)	A Participant Identification Code uniquely identifies a Firm, and is used for inter-Firm trade reporting. This is the same as a Firm ID.
Passive Order	A Passive Order is an order that resides in the Order Book. It is non-aggressive and waits on the Order Book to be executed.
Price Monitoring Extension	A Price Monitoring Extension to an Auction Call Session will be triggered if the likely Auction Uncrossing Price of an Auction Call Session will breach the defined circuit breaker tolerances. If trades cannot be executed during the uncrossing, it is not possible to have a price monitoring extension.
Published	The term Published refers to the disclosure of the price and quantity of an instrument traded on a Reported Trade, by the JSE.
Quote	A Quote allows Market Makers, and other Firms, to use a single message to submit and manage interest for both sides of the Order Book.

Definition	Description
Reference Price	The Reference Price refers to the last auction price, or the automated trade price, or the previous closing price, whichever is the most recent. The Reference Price will be determined by the JSE in the absence of any of the above prices.
RFQs	A Request for Quotation (RFQ) is a standard business process whereby a Trader elicits interest from the market by requesting quotes to be submitted. This activity forms part of the Negotiated Order Book.
Single Transaction	A single transaction defines the life cycle of an aggressing order where there may be multiple executions
Start of Day	Defines the period when the JSE Trading System's processes are activated.
Static Reference Price	At the beginning of the day, the Static Reference Price for an instrument will be its previous closing price. The Static Reference Price will be updated after each auction.
Stop Limit Order	This pertains to a Limit Order that remains unelected, without entering the Order Book, until the Stop Price (Trigger Price) is reached. Once elected, a Stop Limit Order is treated similar to a regular new Limit Order.
Stop Order	A Stop Order is an order that remains unelected (without entering the Order Book) until the Stop Price (Trigger Price) is reached. Once elected, a Stop Order will be treated similar to a regular new Market Order.
Synthetic Instrument	A Synthetic Instrument is a new net position created as a result of two or more real positions in the market. A Synthetic Instrument is not aimed at hedging - but at creating a new and financially positive investment or borrowing situation. A Synthetic Instrument can be created by one of the following processes: 1) Two or more conventional instruments can be combined to create a synthetic that has certain desired characteristics. The sought after characteristics may be cash-flow pattern, safety, volatility, financial efficiency, the meeting of legal criteria, etc. 2) One instrument may be split into two or more elements for the purpose of 'boutique-ing' them or achieving some desired result.
Tick Size	It is the minimum price difference that must exist at all times between consecutive bid and offer prices. In other words, it is the minimum increment in which prices can change.
Time in Force (TIF)	This is a special instruction that is used when placing an order to indicate how long an order will remain active before it is executed, expired, or deleted. The purpose of the TIF is to direct orders to the appropriate trading session with the current day.

Definition	Description
Trade Cancellation	This pertains to the cancellation of an On-Book trade or a Reported trade, on the same business day, or the next business day.
Trader (Dealer)	A trader is registered with the JSE and has access to the JSE Trading System in order to manage orders/trades. A trader is also known as a User. A Trader can: • submit orders on the JSE Central Order Book, • submit specific user-created instruments to the JSE Trading System. • submit buy and sell orders, as well as quotes into the JSE Trading System, • submit Reported trades to the JSE Trading System, • manage orders/quotes existing on the JSE Trading System through amendment or cancellation, • interact with other Traders by participating in the negotiated trade process by either submitting or responding to RFQs.
Trader ID	A Trader Identification Number identifies a Trader who executes a trade, using the JSE Trading System.
Trader Group	A Trader Group is a group to which a trader belongs. This is also known as a Node.
Trade Capture Report (TCR)	Trade Capture Reports are generated messages that provide details regarding On-Book Trades and Reported Trades. Separate Trade Capture Reports are generated for each side of an On-Book Trade, and each side of a Reported Trade.
Trading Cycle	A Trading Cycle defines a list of trading sessions during a trading day.
Trading Member	A Trading Member is also known as a Trading Services Provider who has been authorised by the JSE to perform trading services.
Trading Session	A Trading Session defines a set of trading rules executed during a particular phase of a trading day.
Visible Order	A Visible Order is an order that is visible to the market. The order has a Visible Size that is equal to the Order Quantity.
Volatility Auction Call Session	The Volatility Auction Call Session defines a session where a security is automatically moved, after a Circuit Breaker has been triggered.
VWAP	Volume Weighted Average Price

1 OVERVIEW

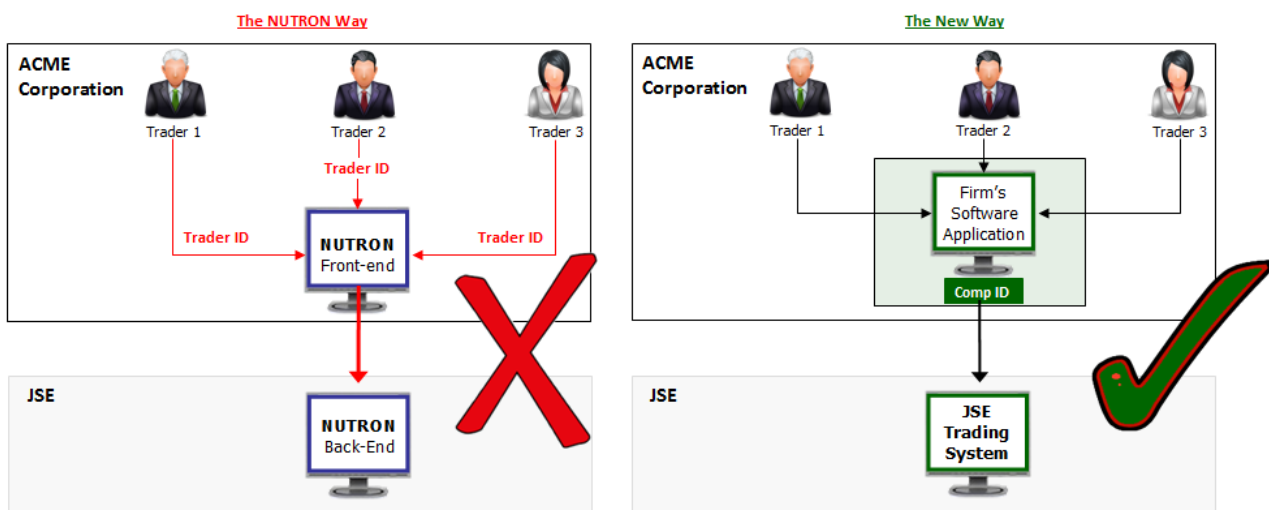
The purpose of this document is to provide an overview to the Derivatives and Bond Markets Trading and Information Solution ("JSE Trading System").

This document describes the functionality of the JSE Trading System that support the JSE Derivatives and Bond Markets.

The JSE Trading System provides Trading, Drop and Trade Copy, Market Data and Reference Data for trading.

Information regarding the above functionality is available in the [Trading API Volumes](https://www.jse.co.za/services/itac) located on the JSE website at <https://www.jse.co.za/services/itac>.

1.1 Nutron Way versus New Way to connect to the JSE Trading System



2 CONNECTING TO THE JSE TRADING SYSTEM

2.1 Gateways and Services

The JSE provides numerous ways in which a Firm can connect to the JSE Trading System in order to perform all trade related activities.

Trading Gateways

The **Trading Gateways** allow for On-Book submission and management of orders, as well as the creation of instruments by Trading Member Firms.

The Trading Gateways are accessed via **TCP protocol**.

Post Trade Gateway

The **Post Trade Gateway** is used to process and publish On-Book trades and Reported trades. It is also used for trade reporting and trade management.

The Post Trade Gateway provides Firms with the ability to receive **Trade Capture Reports** each time a trade execution occurs in real-time.

- Trading Members will only receive TCRs specific to their Firm.
- Clearing Members have the option to receive TCRs for each Firm for which they perform clearing.

The Post Trade Gateway is also referred to as the **Private Data Gateway**.

This gateway is accessed via **TCP protocol**.

Drop Copy Gateway

The **Drop Copy Gateway** offers real-time copy functionality of all order activities.

The **Drop Copy Gateway** provides Firms with the ability to receive **Execution Reports**, which detail the status of all Orders that are available, in real-time.

- Trading Members will only receive Execution Reports specific to their Firm.
- Clearing Members have the option to receive Execution Reports for each Firm for which they perform clearing.

The Drop Copy Gateway is accessed via **TCP protocol**.

Refer to the section “[Trade and Drop Copy functionality](#)” for additional information.

MITCH Market Data Gateways

The MITCH Market Data Gateways provide all session, order, trade and statistical information.

The MITCH Market Data Gateways are also referred to as **Public Data Gateways**.

Instruments that are available for trading are published through the **MITCH Market Data Gateways**.

These gateways use a **Multicast service protocol** and are subscribed to as a service.

Reference Data Service

The **Reference Data Service** provides the detailed JSE Trading System setup, as well as embellished instrument details that are critical for trading and information services.

2.2 Connectivity requirements

The manner in which Firms connect to the JSE Trading System is documented in the [Client Connectivity Standards and Requirements document](#), which is located on the JSE website at <https://www.jse.co.za/services/itac>.

2.3 Technical API specifications per Gateway and Service

All technical API documentation is located on the JSE website at <https://www.jse.co.za/services/itac> under the section named “Trading Documentation”. Each document pertains to a specific Gateway or Service and should be read in conjunction with this document.

Volume 02	FIX Trading Gateway ONLY applicable for JSE Equity Market trading connectivity.
Volume 03	Post Trade Gateway
Volume 04	Drop Copy Gateway
Volume 05	Market Data Gateway (MITCH - UDP)
Volume 06	Market Data Gateway (FAST - UDP) ONLY applicable for JSE Equity Market trading connectivity
Volume 07	Indices Feed (FAST - UDP)
Volume 08	Regulatory News Feed (FAST - UDP)
Volume 09D	JSE Reference Data Management (Derivatives Market)
Volume 09E	JSE Reference Data Management (Equity Market)
Volume 10	Reject Codes and Reasons

2.4 Firm connectivity via CompIDs

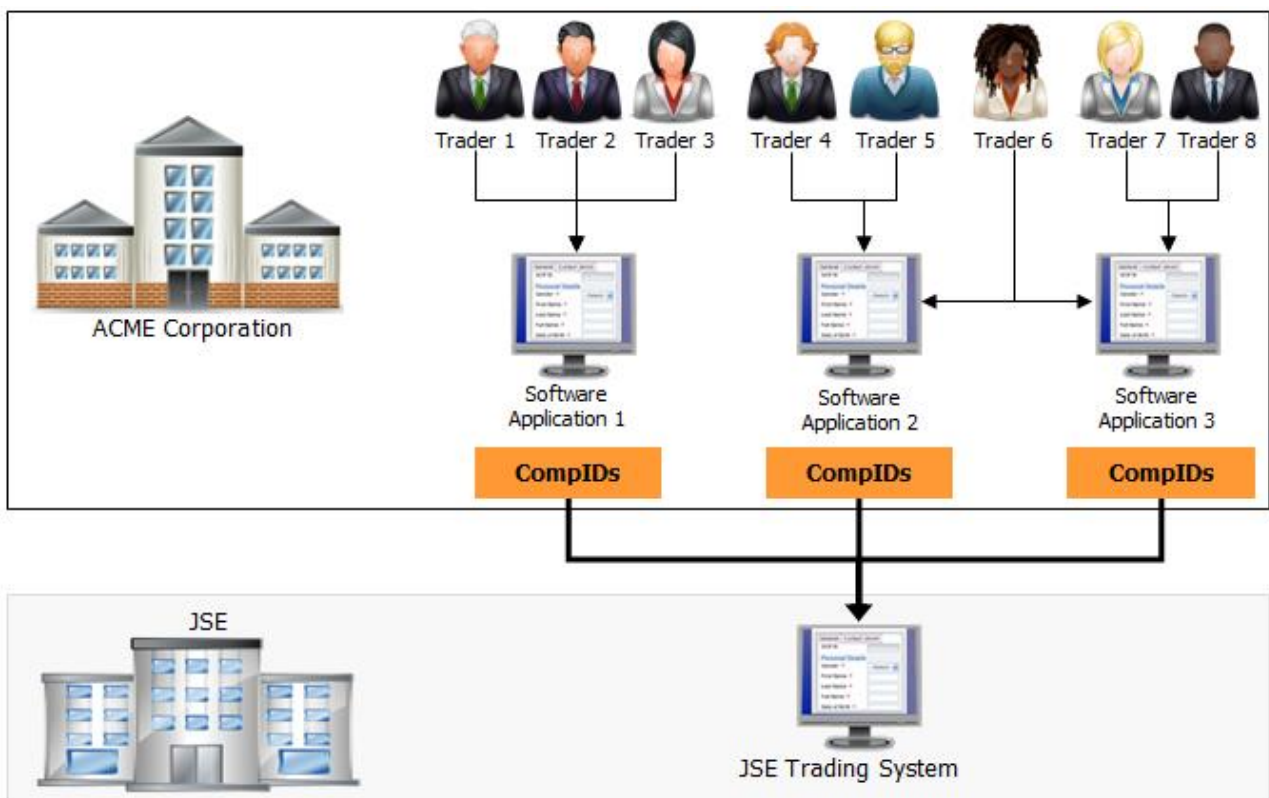
A CompID is also known as an **Interface User**.

A CompID is allocated per software application that a Firm uses to connect to a Gateway on the JSE Trading System. The CompID is used to create a channel that creates a physical connection between the Firm's software application and the JSE Trading System.

Once a connection is established, at start of day, no further logon or connection needs to be made, and Traders are free to interact with the JSE Trading System throughout the trading day.

Important: Trader IDs are not used to connect to the JSE Trading System

The configuration of CompIDs are Firm-specific. They are defined and configured, as per the Firm's requirements, during the enablement process, that is, when a Firm is granted 'access permissions' to connect to the JSE Trading System. This is achieved by contacting the JSE Client Services Centre.



2.4.1 CompIDs assigned on a Gateway level

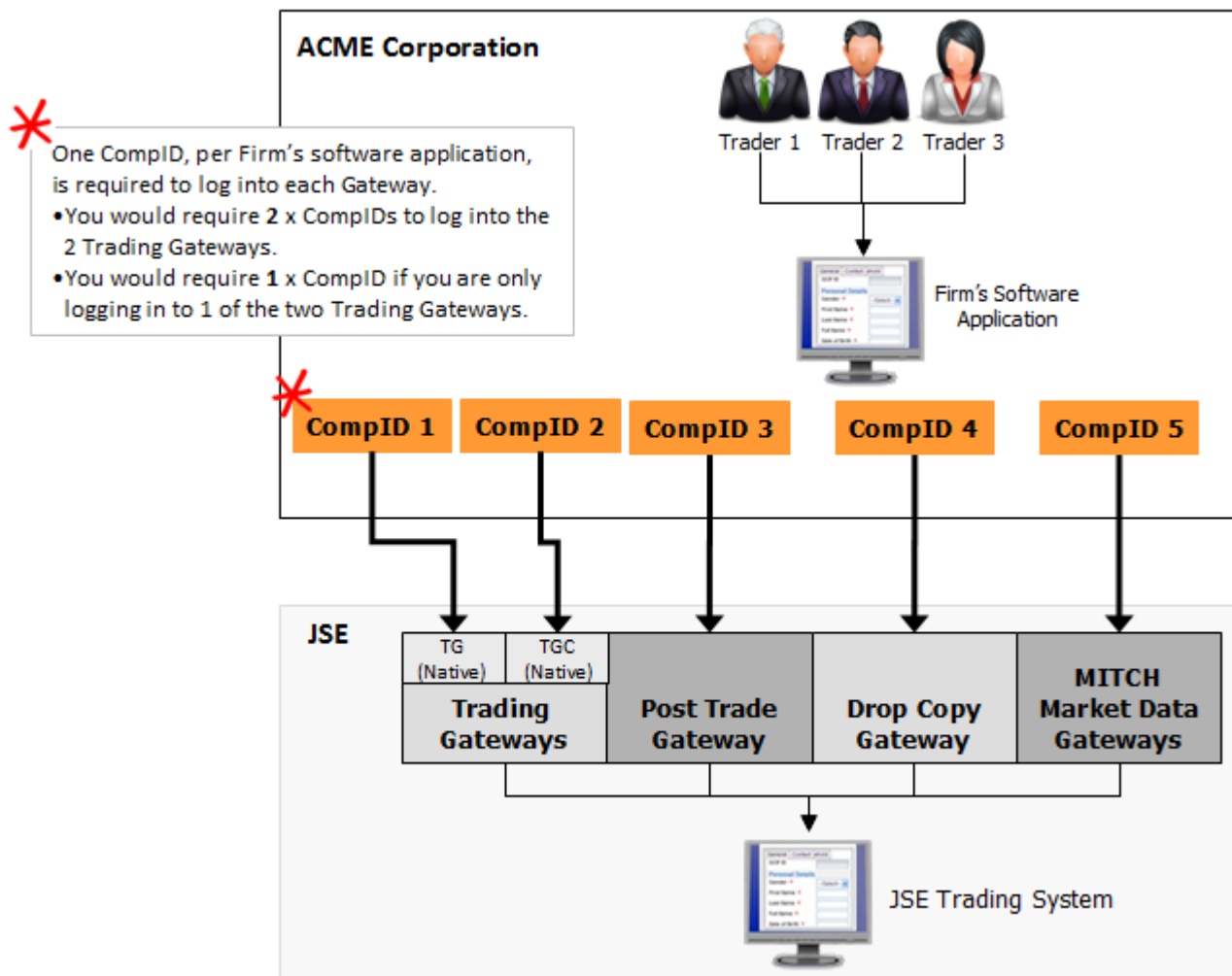
A CompID connects a Firm's software applications to the JSE Trading System via Gateways. CompIDs are allocated per Gateway and are the points where all connectivity logic will reside.

CompIDs are assigned on a Gateway level, for both the **Trading Gateways** and the **Market Data Gateways**, and as such, are used to log into these Gateways.

CompIDs on the **Drop Copy Gateway** and the **Post Trade Gateway** can be configured to receive a real-time copy of all order-related messages (**Execution Reports**), and all trade-related messages (**Trade Capture Reports**) respectively. Refer to [Section 5](#) for a full functional breakdown.

It is on the CompID that the risk-mitigating **Cancel on Disconnect/Logout** functionality is applied. Refer to [Section 4](#) for a detailed description.

Each Gateway will have a specific CompID assigned to it in order to mitigate any negative cross-Gateway activity.



2.4.2 Market-specific roles

CompIDs are further assigned with Market-specific roles, for example, a CompID will connect to the Equity Derivatives Market, but not to the Interest Rate and Currency Markets. This design further alleviates cross-market activity.

CompIDs are only assigned on a Gateway level. This ensures that Market level connectivity is not limited.

Clearing-specific CompIDs are provided per Market.

2.4.3 CompID known as a Default User

In order for a Firm to connect to the JSE Trading System, they must have one CompID created. This CompID is known as the “Default User”.

Without a “Default User CompID”, no Reported Trading can occur.

2.4.4 CompID naming conventions

CompIDs are easily recognised through a specific naming convention.

CompIDs allocated to Firms

Firm Alpha Code (3) + Gateway/Type Identifier (1) + Number (2)

Example: SBGP01

ABC (Trading Firm) + **P** (Post Trade Gateway) + **incremental number** (between 01 and 99)

ABC (Trading Firm) + **X** (on behalf of Post Trade) + **incremental number** (between 01 and 99)

CompID naming convention per Firm/Market

The incremental number at the end of the CompID is used to uniquely identify a specific Firm or Market.

Example:

Equities Market - ABCABCP01, ABCP02, ABCP03, ...ABCP49

Derivatives Market - ABCP50, ABCP51, ABCP52, ...ABCP79

Clearing Member CompIDs - ABCP80, ABCP81, ABCP82, ...ABCP99

Gateway naming convention

P – Post Trade Gateway

D – Drop Copy Gateway

N – Native Trading Gateway

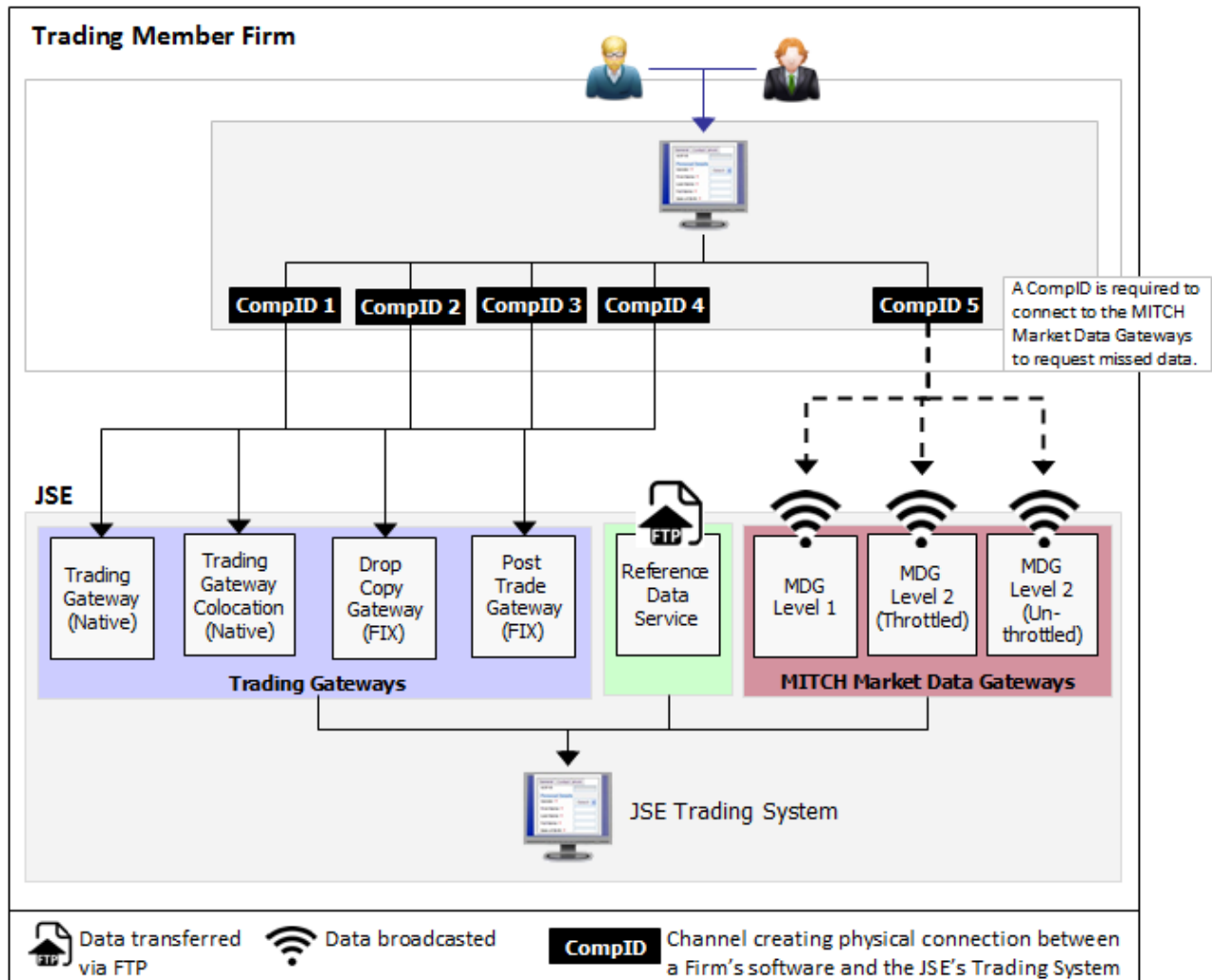
M – MITCH Full Depth Market Data Gateway (throttled)

U – MITCH Full Depth Market Data Gateway (unthrottled)

L – MITCH Top of Book Market Data Gateway

2.4.5 Trading Member connectivity to the JSE Trading System

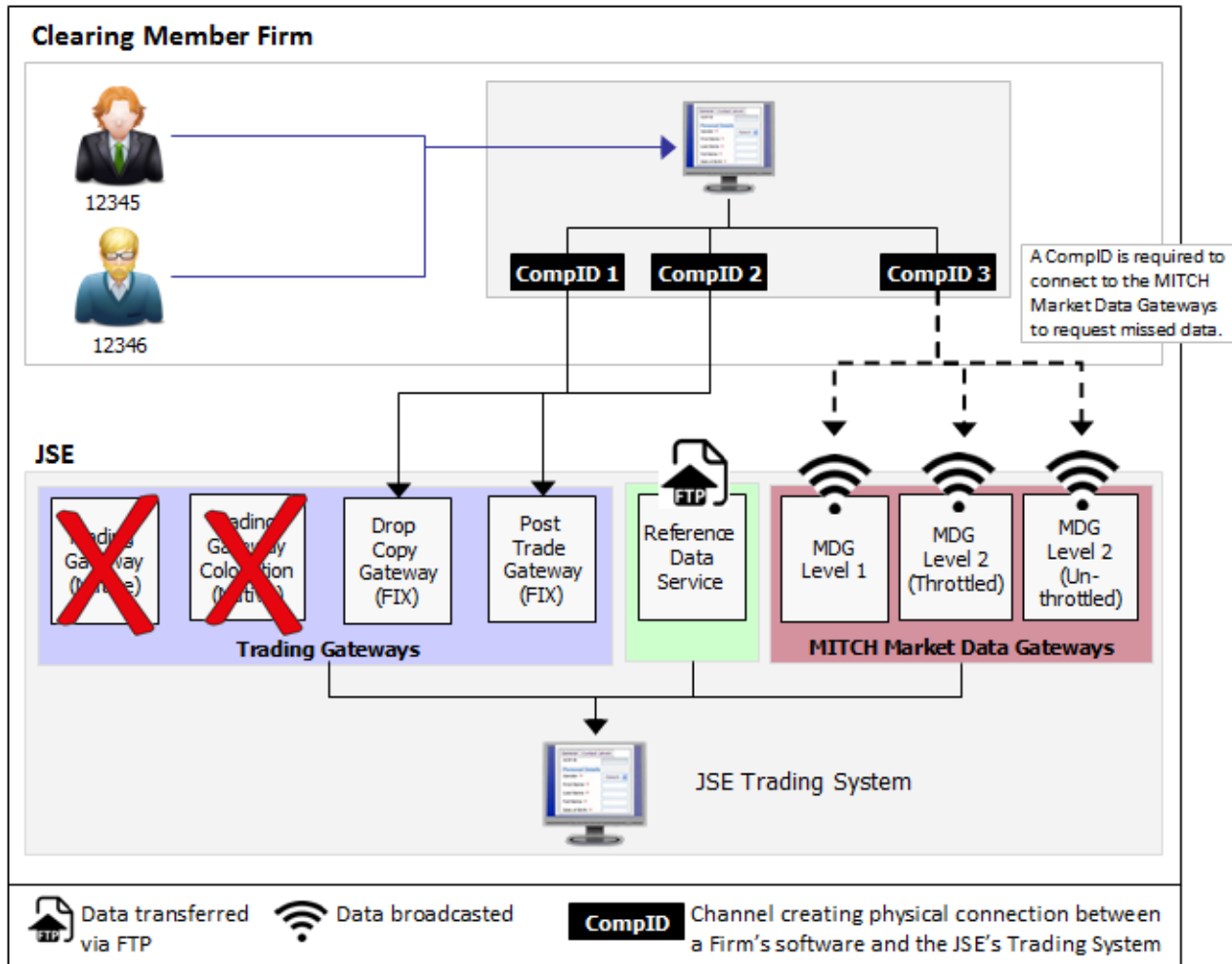
A Trading Member will need to establish connections to **ALL** Gateways in order to perform trading on behalf of their Firm.



2.4.6 Clearing Member connectivity to the JSE Trading System

Clearing Members have the option to connect to the following Gateways and Services:

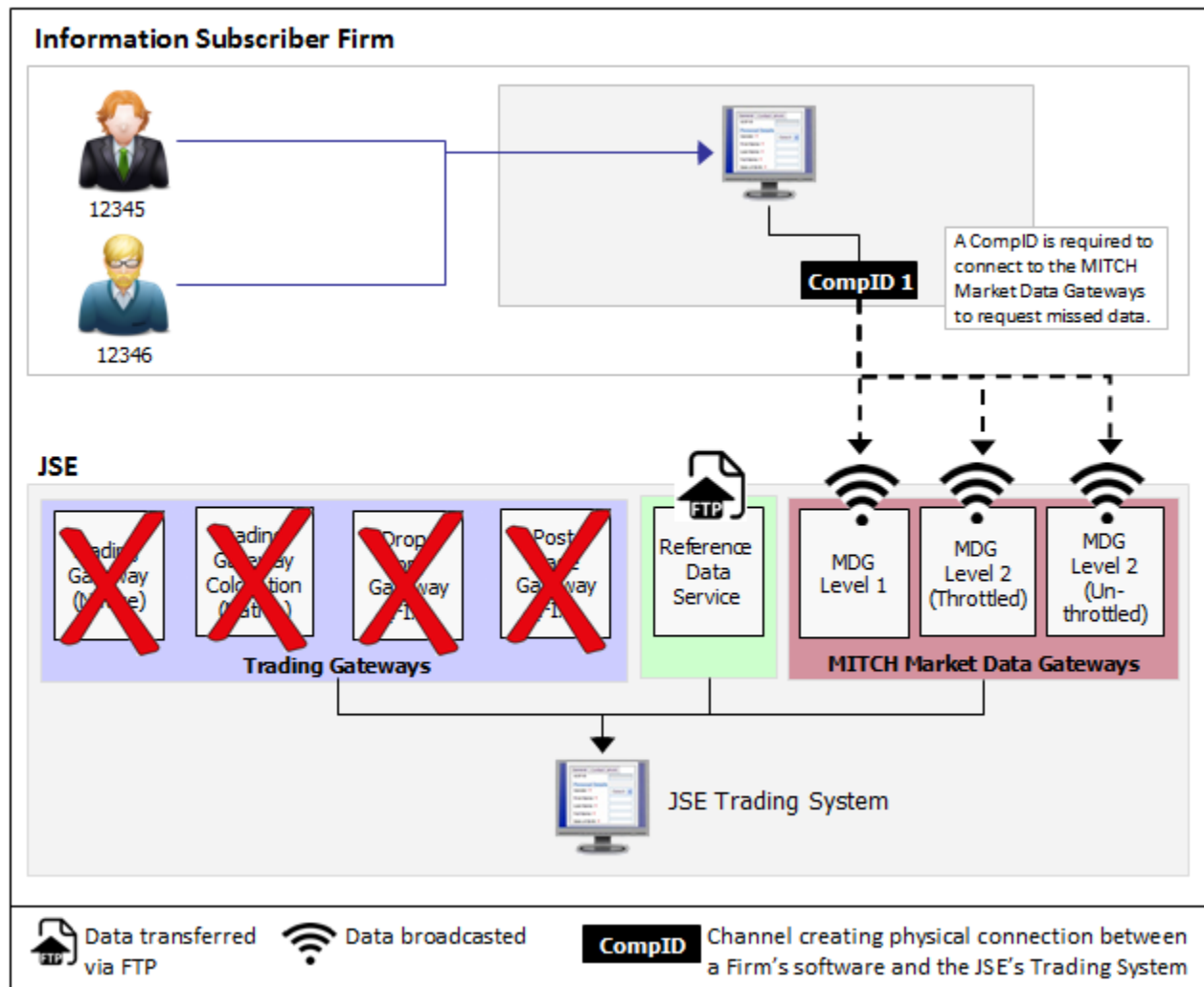
- Post Trade Gateway
- Drop Copy Gateway
- MITCH Market Data Gateways
- Reference Data Service



2.4.7 Information Subscriber connectivity to the JSE Trading System

Information Subscribers will only connect to the following Gateways and Services:

- MITCH Market Data Gateways
- Reference Data Service



3 FIRM STRUCTURE LAYOUT PER THE JSE TRADING SYSTEM

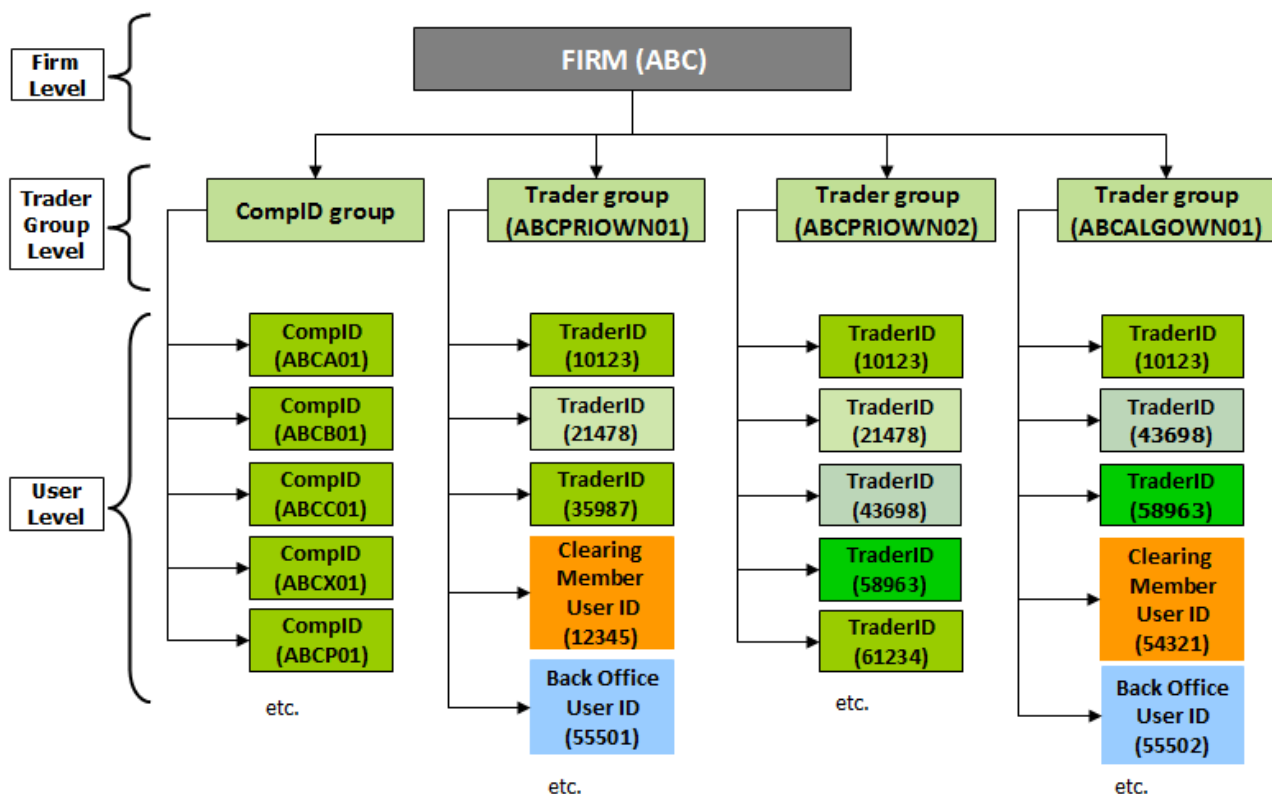
Firms are set up in a hierarchical fashion in the JSE Trading System. This structure is defined as follows:

- Firm level,
- Trader Group level, and
- User level.

The structure will vary depending on the type of Firm being set up. The following 4 structures are discussed below:

- Trading Member structure
- Clearing Member structure
- Clearing Member structure (Clearing Members who trade on behalf of their clients)
- Information Subscriber structure

3.1 Trading Member structure



3.1.1.1 Firm level

The Firm level is the highest level for depicting a Firm. This level is intended to correspond to the Firm's highest entity and will be denoted by the Firm's PIC.

3.1.1.2 Trader Group level

The Trader Group level is configured to meet a Firm's specific trading configuration. Each Firm is allocated a CompID Group and one or more Trader Groups, as per the Firm's requirements.

The CompID Group will contain all CompIDs and each Trader Group will contain all Trader IDs, Clearing Member IDs and Back Office User IDs of the selected Firm. It is up to the Firm to decide which IDs are active under which Trader Groups.

3.1.1.3 User level

Users have a multitude of roles and privileges assigned to them. All Users exist on the same level, however, it is their role that distinguishes them.

Below is a list of the various User Types that have access to the JSE Trading System:

Trader IDs

Trader IDs are assigned to all registered Traders, so that they can perform On-Book and Reported trading functionality.

Note: Each Trader must be registered with the JSE per Market. Upon registration, each Trader is assigned a unique Trader ID, which is included in all order, quote and trade messages, submitted by a Firm to the JSE Trading System.

CompIDs

Refer to the section [“Firm connectivity via CompIDs”](#) for a comprehensive explanation of CompIDs.

Clearing Member User IDs

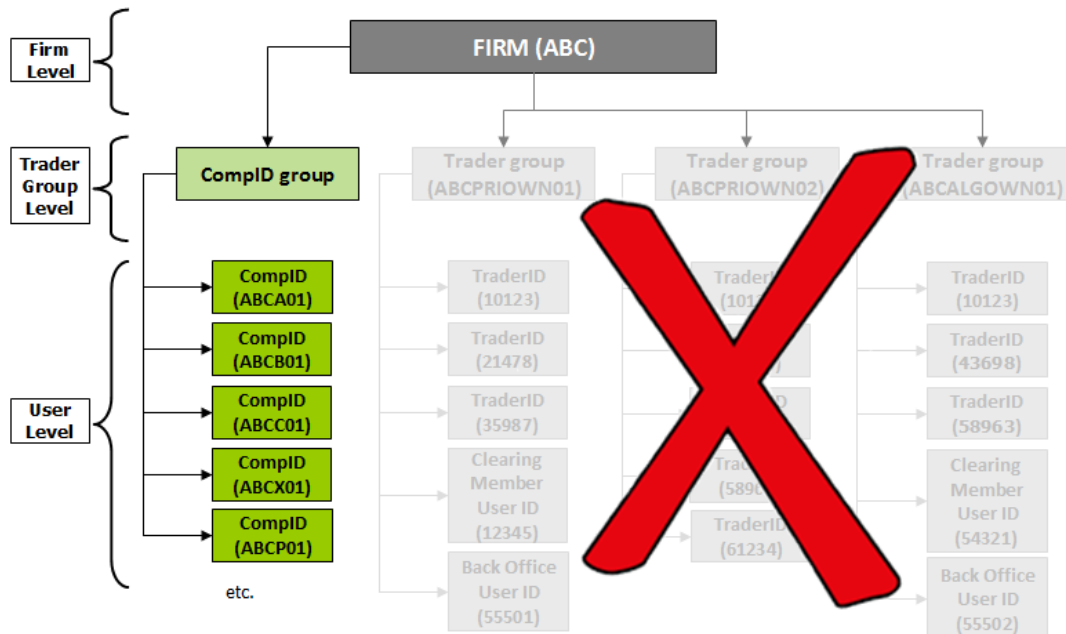
- Clearing Member Users are allocated Clearing Member User IDs.
- Clearing Member Users are able to report Reported trades to the JSE Trading System.
- They do not, however, have the ability to submit any Orders onto the Central Order Book, nor participate in RFQs.
- The JSE Trading System caters for certain Reported trading activity performed by Clearing Member Users on behalf of Trading Member Firms.

Back Officer User IDs

- Back Office Users are allocated Back Office User IDs.
- Back Office Users have the ability to report Reported trades to the JSE Trading System.
- Back Office Users do not, however, have the ability to submit any Orders onto the Central Order Book, nor to participate in RFQs.

3.2 Clearing Member structure

Since a Clearing Member does not directly perform trading functionality within their Firm, no Trader Groups are set up, and as such, no Trader IDs are created.



3.2.1.1 Firm level

The Firm level is the highest level for depicting a Firm. This level is intended to correspond to the Firm's highest entity and will be denoted by the Firm's PIC.

3.2.1.2 Trader Group level

The Trader Group level is configured to meet a Firm's specific requirements. The ComplID Group will contain all ComplIDs.

3.2.1.3 User level

Users have a multitude of roles and privileges assigned to them. All Users exist on the same level, however, it is their role that distinguishes them.

Below is a list of the various User Types that have access to the JSE Trading System:

Trader IDs

Not applicable to Clearing Members.

ComplIDs

Refer to the section "[Firm connectivity via ComplIDs](#)" for a comprehensive explanation of ComplIDs.

Clearing Member User IDs

Not applicable to Clearing Members.

Back Officer User IDs

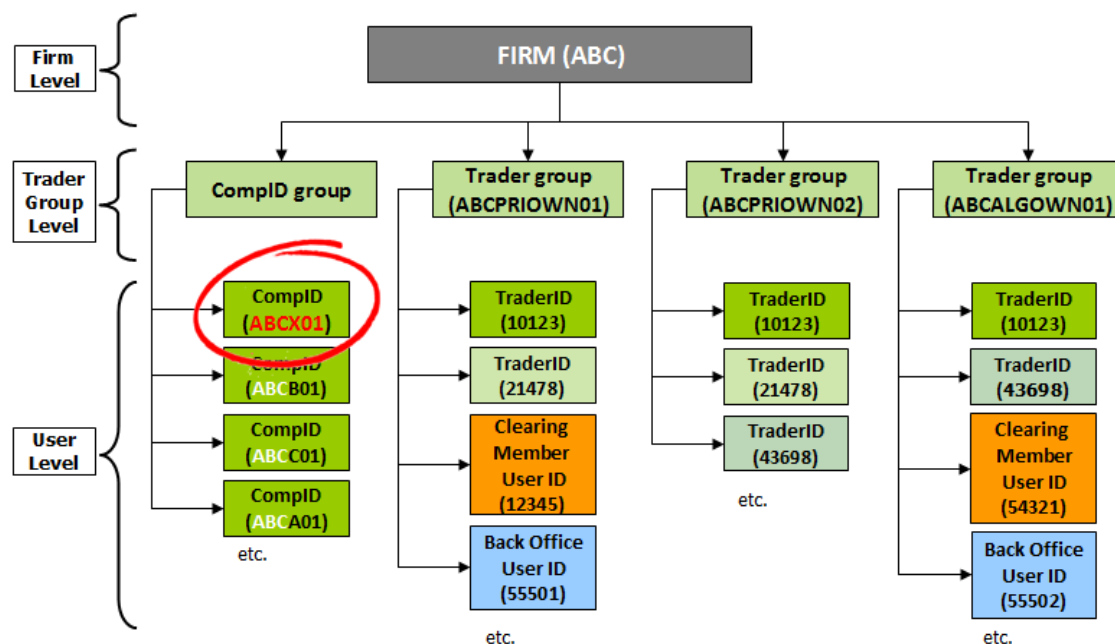
Not applicable to Clearing Members.

3.3 Clearing Member structure (CMs who trade on behalf of their clients)

Certain Clearing Members submit Reported Trades on behalf of their clients. This allows Clearing Members to manage the risk of their direct clients by allowing order-related messages and trade-related messages to be sent directly to them. This also allows for real-time alignment with Trading Members, and allows for instant risk management activities.

Based on the above, a Clearing Member will require access to the Trading Gateways. In these instances, a Trading Member will provide the Clearing Member with one of their CompIDs. **Note:** The JSE will use a specific naming convention to create this CompID. Refer to the section “[CompID naming convention](#)” for additional information.

In this instance, the Clearing Member structure will contain Trader Groups, Trader IDs, Clearing Member User IDs and Back Office User IDs.



3.3.1.1 Firm level

The Firm level is the highest level for depicting a Firm. This level is intended to correspond to the Firm’s highest entity and will be denoted by the Firm’s PIC.

3.3.1.2 Trader Group level

The Trader Group level is configured to meet a Firm’s specific trading configuration. Each Firm is allocated a CompID Group and one or more Trader Groups, as per the Firm’s requirements.

The CompID Group will contain all CompIDs and each Trader Group will contain all Trader IDs, Clearing Member IDs and Back Office User IDs of the selected Firm. It is up to the Firm to decide which IDs are active under which Trader Groups.

3.3.1.3 User level

Users have a multitude of roles and privileges assigned to them. All Users exist on the same level, however, it is their role that distinguishes them.

Below is a list of the various User Types that have access to the JSE Trading System.

Trader IDs

Trader IDs are assigned to all registered Traders, so that they can perform Reported Trading functionality.

Note: Each Trader must be registered with the JSE per Market. Upon registration, each Trader is assigned a unique Trader ID, which is included in all order, quote and trade messages, submitted by a Firm to the JSE Trading System.

CompIDs

Refer to the section “[Firm connectivity via CompIDs](#)” for a comprehensive explanation of CompIDs.

Clearing Member User IDs

- Clearing Member Users are allocated Clearing Member User IDs.
- Clearing Member Users are able to report Reported trades to the JSE Trading System. They do not, however, have the ability to submit any orders onto the Central Order Book, nor participate in RFQs.
- The JSE Trading System caters for certain Reported trading activity performed by Clearing Member Users on behalf of Trading Member Firms.

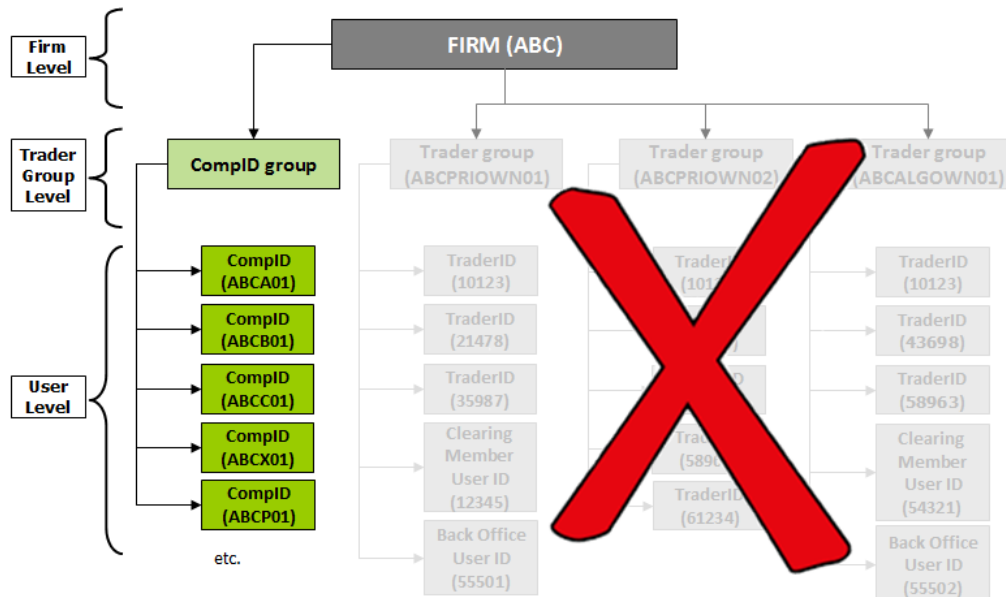
Back Officer User IDs

- Back Office Users are allocated Back Office User IDs.
- Back Office Users have the ability to report Reported trades to the JSE Trading System.
- Back Office Users do not, however, have the ability to submit any Orders onto the Central Order Book, nor to participate in RFQs.

3.4 Information Subscriber structure

Since an Information Subscriber does not directly perform trading functionality within their Firm, no Trader Groups are set up, and as such, no Trader IDs are created.

An Information Subscriber can only subscribe to the **MITCH Market Data Gateways**, as well as the **Reference Data Service**.



3.4.1.1 Firm level

The Firm level is the highest level for depicting a Firm. This level is intended to correspond to the Firm's highest entity and will be denoted by the Firm's PIC.

3.4.1.2 Trader Group level

The Trader Group level is configured to meet a Firm's specific requirements. The ComplID Group will contain all ComplIDs.

3.4.1.3 User level

Users have a multitude of roles and privileges assigned to them. All Users exist on the same level, however, it is their role that distinguishes them.

Below is a list of the various User Types that have access to the JSE Trading System.

Trader IDs

Not applicable to Information subscribers.

ComplIDs

Refer to the section "[Firm connectivity via ComplIDs](#)" for a comprehensive explanation of ComplIDs.

Clearing Member User IDs

Not applicable to Information subscribers.

Back Officer User IDs

Not applicable to Information subscribers.

4 INSTRUMENT MANAGEMENT

4.1 Unique Identification of Instruments

An Instrument ID is used to uniquely identify each listed instrument on the JSE Trading System. The Instrument ID is automatically assigned to an instrument when it is created by the JSE or a Firm.

If the Symbol is changed, any open Orders, associated with that instrument, will automatically be deleted.

The JSE does not envisage changing the Instrument ID of an instrument intra-day. Any reference data changes will be made inter-day and fed into the 'client reference data' csv files.

All information relating to instruments is available in the [Volume 09D – JSE Reference Data Management document](#).

4.2 Types of Instruments

4.2.1 Futures

A futures contract is a legally binding agreement that gives the investor the right to buy or sell an underlying listed share at a fixed price on a future date. A futures contract can protect buyers and sellers from price volatility by locking in on a pre-agreed price of the underlying asset. The underlying asset can be an equity, currency, commodity, bond or any other financial instrument.

The buyer of a future contract has the obligation to purchase the underlying asset at the pre-agreed price stated in the contract on the date of the expiry.

Future contracts are usually defined on a quarterly basis but can also be defined as non-standardised contracts.

4.2.1.1 Equity Derivatives Market Futures Asset Classes

The following Futures instrument types are available in the Equity Derivatives Market:

- Index Futures

Index Futures are derivatives instruments that give investors exposure to price movements on the underlying share.

Symbol Naming Convention:

Instrument Type	Convention	Example 1 (Contract Size = Base)
Index Future	<Underlying (6)> + <First 3 characters of the Instrument Category (3)> + <Expiry Date (6)> + <Universal Instrument ID (9)>	ALSIFUT201215001234567

- Single Stock Futures

Single Stock Futures are derivatives instruments that give investors exposure to price movements on the underlying share. A futures contract is a legally binding agreement that gives the investor the ability to buy or sell an underlying listed share at a fixed price on a future date. SSF's can be easily accessed via JSE equity derivatives members. Contracts are predominantly physically settled however cash settles versions are also available.

Symbol Naming Convention:

Instrument Type	Convention	Example 1 (Contract Size = Base)
Single Stock Future	<Underlying(6)> + <First 3 characters of the Instrument Category(3)> + <Expiry Date(6)> + <Universal Instrument ID(9)>	AGLFUT171215001234567

- IDX Futures

The JSE's International Derivatives give investors exposure to the price movements of internationally listed blue chip shares through Single Stock Futures (SSFs). Investors do not require exchange control permissions or the foreign trading accounts. Contracts are cash settled in rands

Symbol Naming Convention:

Instrument Type	Convention	Example 1 (Contract Size = Base)
International Equity Future	<Underlying(6)> + <First 3 characters of the Instrument Category(3)> + <Expiry Date(6)> + <Universal Instrument ID(9)>	GOOGLFUT171215001234567

- Dividend Neutral Futures

Dividend Neutral Stock Futures (DNSFs) are Derivatives Instruments that give investors exposure to the price movements of an underlying Share while stripping out inherent risk in dividend assumptions and Futures pricing. The contract brings together a Single Stock Futures (SSFs) Contract and a Dividend Futures Contract.

Symbol Naming Convention:

Instrument Type	Convention	Example 1 (Contract Size = Base)
Dividend Neutral Future	<Underlying(6)> + <First 3 characters of the Instrument Category(3)> + <Expiry Date(6)> + <Universal Instrument ID(9)>	AGLFUT171215001234567

- CFDs

A Contract for Difference (CFD) is listed and traded on the Exchange and cleared by the appointed clearing house for the JSE. The underlying asset is an Equity that is cash settled on expiry. A CFD is defined as an agreement to exchange the difference in value of a particular asset between the time at which a contract is opened and the time at which it is closed. Dividends are taken into account unlike a Standard Single Stock Future. A funding spread is charged on a daily basis and paid from the long to the short holder.

Symbol Naming Convention:

Instrument Type	Convention	Example 1 (Contract Size = Base)
CFD	<Underlying(6)> + <First 3 characters of the Instrument Category(3)> + <Expiry Date(6)> + <Universal Instrument ID(9)>	AGLCFD171215001234567

- AnyDay Future

Any-Day Futures are futures that have all the parameters of a standard derivative but expire on non-standard dates.

Symbol Naming Convention:

Instrument Type	Convention	Example 1 (Contract Size = Base)
Anyday Future	<Underlying(6)> + <First 3 characters of the Instrument Category(3)> + <Expiry Date(6)> + <Universal Instrument ID(9)>	ALSIANY201215001234567 AGLANY171215001234567

4.2.1.2 Currency Derivatives Market Futures Asset Classes

4.2.1.3 The following Futures instrument types are available for the Currency Derivatives Market

- Currency Futures

A Currency Futures (CFs) Contract is an agreement that gives the investor the right to buy or sell and underlying currency at a fixed exchange rate at a specified date in the future. One party to the agreement agrees to buy (longs) the Future at a specified exchange rate and the other agrees to sell (shorts) it at the expiry date. The underlying instrument of a CFs Contract is the rate of exchange between one unit of foreign currency and the South African rand. Contracts are cash settled in rands and no physical delivery of the foreign currency takes place.

Symbol Naming Convention:

Instrument Type	Convention	Example 1 (Contract Size = Mini)
Forex Future	<Underlying(6)> + <First 3 characters of the Instrument Category(3)> + <Expiry Date(6)> + <Universal Instrument ID(9)>	USD/ZAFUT060217001000507
Quanto Forex Future	<Underlying(6)> + <First 3 characters of the Instrument Category(3)> + <Expiry Date(6)> + <Universal Instrument ID(9)>	USD/ZAFUT060217001000507
Inverted Currency Future	<Underlying(6)> + <First 3 characters of the Instrument Category(3)> + <Expiry Date(6)> + <Universal Instrument ID(9)>	ZAR/USFUT060217001000507

- Currency Any Day Futures

Currency Any-Day Futures are Currency futures that have all the parameters of a standard Currency Future but expire on non-standard dates.

Symbol Naming Convention:

Instrument Type	Convention	Example 1 (Contract Size = Mini)
Forex Anyday Future	<Underlying(6)> + <First 3 characters of the Instrument Category(3)> + <Expiry Date(6)> + <Universal Instrument ID(9)>	USD/ZAANY060217001000507

4.2.2 Options

An option provides the right but not the obligation for the buyer of the contract to exercise and buy or sell the underlying asset. The seller of an options contract can write the contract to either buy (call) or sell (put) the underlying asset and the buyer of the options contract will have the right but not the obligation to honour the contract. The price at which the underlying asset is transacted is referred to as the strike price.

American options can be exercised on or before the expiry date of the option whilst the European option can only be exercised on the expiry day itself. Options are usually traded on price, however options based on futures contracts may also be traded on volatility. Options may be used by both speculators and hedgers. Speculators that are looking to gain large profit margins based on the movement of the underlying asset prices may invest in an option whilst hedgers may chose an option to hedge the risk of the price movement on their current position.

Since in options the buyer is not obliged to honour the contract, a premium is charged for the contract. The value of the premium depends on many factors and is determined based on the underlying asset price, the strike price, the volatility of the underlying and the time to maturity.

4.2.2.1 Equity Derivatives Market Options Asset Classes

- Index Options

Index Options are Derivative Instruments that give investors the right, but not the obligation to buy (Call Option) or sell (Put Option) shares at a fixed price at a future date. Index Options are options based on Index Futures listed. The instruments are cash settled.

Symbol Naming Convention:

Instrument Type	Convention	Example 1 (Contract Size = Base)
Index Option	<Underlying(6)> + <First 3 characters of the Instrument Category(3)> + <Expiry Date(6)> + <Universal Instrument ID(9)> + <Call/Put(1)>	ALSIOPT171215001234567C

- Single Stock Options

Equity Options are Derivative Instruments that give investors the right, but not the obligation to buy (Call Option) or sell (Put Option) Shares at a fixed price at a future date. Equity Options are options based on Single Stock Futures listed. The instruments can be either physically settled or cash settled.

Symbol Naming Convention:

Instrument Type	Convention	Example 1 (Contract Size = Base)
Single Stock Option	<Underlying(6)> + <First 3 characters of the Instrument Category(3)> + <Expiry Date(6)> + <Universal Instrument ID(9)> + <Call/Put(1)>	AGLOPT171215001234567C

- **IDX Options**

IDX Options are Derivative Instruments that give investors the right, but not the obligation to buy (Call Option) or sell (Put Option) Shares at a fixed price at a future date. IDX Options are options based on IDX Futures listed. The instruments are cash settled.

Symbol Naming Convention:

Instrument Type	Convention	Example 1 (Contract Size = Base)
International Equity Option	<Underlying(6)> + <First 3 characters of the Instrument Category(3)> + <Expiry Date(6)> + <Universal Instrument ID(9)> + <Call/Put(1)>	GOOGLOPT171215001234567C

- **AnyDay Option**

Any-Day Options are options that have all the parameters of a standard derivative but expire on non-standard dates.

Symbol Naming Convention:

Instrument Type	Convention	Example 1 (Contract Size = Base)
Anyday Option	<Underlying(6)> + <First 3 characters of the Instrument Category(3)> + <Expiry Date(6)> + <Universal Instrument ID(9)> + <Call/Put(1)>	AGLOPT171215001234567C

4.2.2.2 Currency Derivatives Market Options Asset Classes

- **Currency Option**

A Currency Options (CO) Contract is an agreement that gives investors the right, but not the obligation, to buy or sell a Currency Futures Contract on a future date at a fixed price. COs give investors the right to buy the underlying Currency Future. Put Options give them the right to sell it. Investors are required to pay a

premium for choice of exercising the Option or not. The premium is calculated based on the volatility of the underlying exchange rate.

Symbol Naming Convention:

Instrument Type	Convention	Example 1 (Contract Size = Mini)
Forex Option	<Underlying(6)> + <First 3 characters of the Instrument Category(3)> + <Expiry Date(6)> + <Universal Instrument ID(9)> + <Call/Put(1)>	USD/ZAOPT171215001234567C

- Currency Any Day Options

Currency Any-Day Options are Currency options that have all the parameters of a standard Currency option but expire on non-standard dates.

Symbol Naming Convention:

Instrument Type	Convention	Example 1 (Contract Size = Mini)
Forex Anyday Option	<Underlying(6)> + <First 3 characters of the Instrument Category(3)> + <Expiry Date(6)> + <Universal Instrument ID(9)> + <Call/Put(1)>	USD/ZAANY171215001234567C

4.2.3 Inverse Calendar Spreads

A Calendar Spread is a two legged futures strategy where the first leg of the instrument denotes the Near Month Future and the second leg of the instrument denotes the Far Month Future.

Buying a Calendar Spread implies the intention to sell the first leg of the instrument and buy the second leg of the instrument.

The size of the Calendar Spread being bought denotes an equal size of the leg 1 instrument being bought and an equal size of the leg 2 instrument being sold.

The price of the Calendar Spread denotes the difference of prices between leg 1 instrument and leg 2 instrument. On execution, the trading engine fixes the price of the leg 1 instrument to the Leg 1 Reference Price of the Calendar Spread.

Symbol Naming Convention:

Instrument Type	Convention	Example 1 (Contract Size = Base)
Inverse Calendar Spread (JSE Equity)	<Underlying(6)> + <Near Month Year(5)> + <Far Month Year(5)> + <Universal Instrument ID(9)>	AGLDEC15MAR16123456789

4.2.4 Forward Forwards

A Forward Forward is a future dated contract made up of two trade legs in the same underlying currency, for two different expiry dates and traded simultaneously as a package. It allows the market an opportunity to take a view on the three month forward rate starting on a predetermined future date.

Symbol Naming Convention:

Instrument Type	Convention	Example 1 (Contract Size = Mini)
FWDFWDFX	<Underlying(6)><NearExpiry Date(6)><Tenor(4)*><Universal Master Id(9)>	USD/ZA3112152124123456789

* The Tenor will be the Near Month Type and Far Month Type concatenated, e.g. if it is a 21 x 24 the Tenor will be 2124.

4.2.5 Delta Options

A Delta Option is an option strategy which involves delta hedging a buy or sell option position by buying or selling an equivalent amount of futures contracts which offsets the delta risk.

Symbol Naming Convention:

Instrument Type	Convention	Example 1 (Contract Size = Base)
Delta Option (JSE Equity)	<Underlying(6)> + < First 3 characters of the Instrument Category(3)> + <Expiry Date(6)> + <Universal Instrument ID(9)> + <Call/Put(1)>	USD/ZADEL171215123456789C

4.2.6 Structured Products

Can Do products are non- standard, derivative products that are customisable for clients specific requirements.

Symbol Naming Convention:

Instrument Type	Convention	Example 1 (Contract Size = Base)
Basket Future	<Underlying(6)> + <First 3 characters of the Instrument Category(3)> + <Expiry Date(6)> + <Universal Instrument ID(9)>	BSK001STR311215001234567
Exotic Future	<Underlying(6)> + <First 3 characters of the Instrument Category(3)> + <Expiry Date(6)> + <Universal Instrument ID(9)>	AGLSTR311215001234567
Exotic Option	<Underlying(6)> + <First 3 characters of the Instrument Category(3)> + <Expiry Date(6)> + <Universal Instrument ID(9)>	SOLSTR311215001234567

Variance Future	<Underlying(6)> + <First 3 characters of the Instrument Category(3)> + <Expiry Date(6)> + <Universal Instrument ID(9)>	ALSISTR311215001234567
Option on Basket Future	<Underlying(6)> + <First 3 characters of the Instrument Category(3)> + <Expiry Date(6)> + <Universal Instrument ID(9)> + <Call/Put(1)>	BSK004OPT160317001003110P
Option on Exotic Future	<Underlying(6)> + <First 3 characters of the Instrument Category(3)> + <Expiry Date(6)> + <Universal Instrument ID(9)> + <Call/Put(1)>	ACEOPT151216001002007P

4.3 Instruments created intra-day

Instruments, on the JSE Derivative Markets, can be created intra-day.

Any instruments created intra-day will be communicated to the market via the **MITCH Market Data Gateways**. Refer to the [Volume 05 – Market Data Gateway \(MITCH - UDP\) document](#) for additional information.

Instruments can be created in numerous ways:

- JSE-created Structured Products
- JSE-created auto-generated Options
- Client-created Instruments

4.3.1 JSE-created Structured Products

Structured Products are created intra-day by the JSE and disseminated together with a Market Notice detailing the product.

4.3.2 JSE-created auto-generated Options

Options are automatically created intra-day by the JSE. This ensures that there is a wide array of Option instruments available at various Strike Prices. Options are created to ensure that there are at least one in-the-money contract, out-the-money contracts, as well as an at-the-money contract, at all times. Should the underlying price change so that there are no longer the applicable options available, the JSE Trading System will automatically generate the required option.

4.3.3 Client-created Instruments

The JSE provides Trading Members with the capability to create customised instruments based on existing listed instruments.

The following types of user-defined Instruments are permitted:

AnyDay Futures	A user can select their own non-standard expiry dates for an AnyDay Future.
AnyDay (Naked) Options	A user can select non-standard expiry dates for an AnyDay (Naked) Option.
Delta Options	A user can create Delta Neutral instruments based on listed Options (and underlying Futures) instruments.
Forward/Forward FX	These contracts may only be created and traded by Banks. They involve the simultaneous purchase and sale of a particular Currency Expiry for another Currency Expiry, where both transactions are Forward Contracts.

Firms can identify the instruments that are eligible for user-creation within the 'client reference data' files. These files are discussed in the [Volume 09D – JSE Reference Data Management document](#). This document is split according to the different types of instruments and clearly identifies which instruments can be used as a base for user-created instruments.

Firms will only be able to create a Futures instrument if existing Futures Contracts already exist on the same underlying instrument. If no Futures Contract is available, the JSE Trading System will reject the request. Any user-created instrument can only be created with a date before that of the furthest expiry.

4.3.3.1 AnyDay Futures

Trading Members are able to submit requests for new AnyDay Futures via the Trading Gateways, using a **Security Definition Request Message**. This message is detailed in the [Volume 01 – Native Trading Gateway – Security Definition Request document](#).

AnyDay instrument requests should be based on an existing Futures instrument, which is referred to as the “**Reference Instrument**”.

Step 1: Identify an eligible Reference Instrument

Eligible Reference Instruments can be identified as follows:

- There must be a value displayed in the *Expiry Group* field, and
- The *User Creation Allowed* field must have a value of either ‘1’ (AnyDay Future Only) or ‘3’ (AnyDay Future and Naked Option)

Refer to the [Volume 09D – JSE Reference Data Management document](#) for additional information.

Step 2: Creating an AnyDay Future

The Trading Member is required to provide the information below when submitting a **Security Definition Request Message**. The fields below are key fields that must be populated. Refer to the [Volume 01 - Native Trading Gateway document](#) to complete all other mandatory fields.

1.	Reference Instrument	This is the existing Futures instrument on which the new AnyDay Future will be based.
2.	Maturity Date	This is the user-specified Expiry Date of the AnyDay Future.
3.	Reference Price	This is the user-specified Reference Price for the AnyDay Future. This may be the price at which the trader is intending to submit the trade.
4.	Security Type	The <i>Security Type</i> of the AnyDay instrument should be set to ‘Future’.

Step 3: Validations performed by the JSE Trading System

Once the JSE Trading System receives the **Security Definition Request Message**, it will perform a set of validations.

1. Validate that there are no existing instruments with the same Underlying, Instrument Category, Sub-Category, and Expiry Date.
 - This is detailed in the [Volume 09D – JSE Reference Data Management document](#).
 - If the above validations fail, the request is rejected with **error code 162015 – Instrument Creation Common Validation Failed**.
2. Validate that the selected Expiry Date of the AnyDay Future is before the Expiry Date of the last standard contract in a series.
 - If the above validations fail, the request is rejected with **error code 162014 – Expiry Date should be less than the maximum Expiry Date in the same series**.

3. Validate that the selected Expiry Date of the AnyDay Future is not a South African holiday, nor a non-standard Expiry Date, that is, not a Futures Close Out Day.
 - If the above validations fail, the request is rejected with **error code 162013 – Maturity Date is a Non-Trading Date**.
4. Validate that the selected Reference Instrument is a valid source instrument for the AnyDay Future.
 - The JSE Trading System confirms this by ensuring that a value is displayed in the *Expiry Group* field.
 - If the *Expiry Group* field is blank, for the selected Reference Instrument, then the request will be rejected with **error code 162012 – Not a Valid Future to create an AnyDay**.
5. Validate that the Expiry Group is valid.
 - The *Expiry Group* field identifies a group of Futures. This is detailed in the [Volume 09D – JSE Reference Data Management document](#).

If a Firm receives one or more of the above validation errors, they must resubmit the same AnyDay Futures 'creation request' with the correct data.

Step 4: JSE Trading System will source additional information and update the newly created Instrument

Once all the above validations have passed, the JSE Trading System will source additional information from the Reference Instrument, and update the following fields on the new AnyDay Future.

1.	Instrument Category	Set to 'AnyDay'.
2.	Instrument ID	JSE Trading System generated identification number.
3.	Symbol	Constructed using <Underlying Instrument ID (6)> + <"ANY" (3)> + <Expiry Date (6)> + <Instrument ID (9)> <u>Example of a newly constructed Symbol:</u> Underlying (6) + First 3 characters of the Instrument Category (3) + Expiry Date (6) + Universal Instrument ID (9) JSEABCANY171218000004123

4.3.3.2 AnyDay (Naked) Options

Trading Members are able to submit requests for new AnyDay Futures via the Trading Gateways, using a **Security Definition Request Message**. This message is detailed in the [Volume 01 – Native Trading Gateway – Security Definition Request document](#).

AnyDay Option instrument requests should be based on an existing underlying Futures instrument, which is referred to as the “**Reference Instrument**”.

Step 1: Identify an eligible Reference Instrument

Eligible Reference Instruments can be identified as follows:

- There must be at least one Options Expiry Date populated, for example, *OptionsExpiry1*, *OptionsExpiry2*, *OptionsExpiry3*, *OptionsExpiry 4*, and
- The *User Creation Allowed* field must have a value of either ‘2’ (Naked Option Only) or ‘3’ (AnyDay Future and Naked Option)

Refer to the [Volume 09D – JSE Reference Data Management document](#) for additional information.

Step 2: Create an AnyDay Option

The Trading Member is required to provide the information below when submitting a **Security Definition Request Message**. The fields below are key fields that must be populated. Refer to the [Volume 01 - Native Trading Gateway document](#) to complete all other mandatory fields.

1.	Reference Instrument	This is the existing Futures instrument which will be the Underlying instrument of the AnyDay Option.
2.	Maturity Date	This is the user-specified Expiry Date of the AnyDay Option. This date should be one of the four Option Expiry Dates associated to the underlying Reference Instrument.
3.	Reference Price	This is the user-specified Reference Price for the AnyDay Option. This may be the price at which the trader is intending to submit the trade.
4.	Strike Price	This is the user-defined Strike Price of the AnyDay Option. The Strike Price should be a multiple of the Option’s Strike Interval, associated with the underlying Reference Instrument.
5.	Security Type	Indicate whether the AnyDay Option should be a Call Option or a Put Option.

Step 3: Validations performed by the JSE Trading System (AnyDay Option)

Once the JSE receives the **Security Definition Request Message**, the JSE Trading System will perform a set of validations.

1. Validate that there are no existing instruments with the same Underlying, Expiry Date, Strike Price and Option Type (Call/Put).
 - If the request does not pass validation it will be rejected with **error code 162015 – Instrument Creation Common Validation Failed**.

2. Validate that the Strike Price of the AnyDay Option is a multiple of the Options Strike Interval attached to the underlying Reference Instrument.
 - If the request does not pass validation it will be rejected with **error code 162022 – Strike Price of the Options should be multiplication of Option Strike Interval in the Underlying.**
3. If the underlying Reference Instrument is a standard Exchange-created Future - as opposed to being a user-created AnyDay Future - the JSE Trading System will validate that the specified Maturity Date of the AnyDay Option is one of the four possible Option Expiry Dates linked to the underlying Reference Instrument.
 - If the request does not pass validation it will be rejected with error code 162020 – Option Expiries do not match the Maturity Date specified in the underlying Future.
4. If the underlying Reference Instrument is a user-created AnyDay Future, the JSE Trading System will validate that the selected Expiry Date of the AnyDay Option is equal to that of the underlying Future.
 - If the request does not pass validation it will be rejected with **error code 152021 – Maturity Date should be equal to underlying instrument.**

If a Firm receives one or more of the above validation errors, they must resubmit the same AnyDay Option 'creation request' with the correct data.

Step 4: JSE Trading System will source additional information and update the newly created Instrument (AnyDay Option)

Once all the above validations have passed, the JSE Trading System will source additional information and update the following fields accordingly.

1.	Instrument Category	Set to 'Option'.
2.	Instrument ID	JSE Trading System generated identification number.
3.	Symbol	Constructed using <Underlying(6)> + < First 3 characters of the Instrument Category(3)> + <Expiry Date(6)> + <Universal Instrument ID(9)> + <Call/Put(1)> <u>Example of a newly constructed Symbol:</u> Underlying (6) + First 3 characters of the Instrument Category (3) + Expiry Date (6) + Universal Instrument ID (9) + Call/Put (1) JSEABCANY1712180000041231
4.	Exercise Style	This will default to 'American'.
5.	Security Description	This will be copied from the Reference Instrument.

4.3.3.3 Delta Options

Trading Members are able to submit requests for new Delta Options via the Trading Gateway, using a **Security Definition Request Message**. This is detailed in the [Volume 01 – Native Trading Gateway – Security Definition Request document](#).

Delta Options may be created on all existing, or user-created, Option instruments, except those which are derivatives of a Structured Product. Refer to the [Volume 09D – JSE Reference Data Management document](#) for additional information. **Delta Options are currently not allowed to be created on Structured Products.**

Step 1: Identify an eligible Reference Instrument

Eligible Reference Instruments can be identified as follows:

- There must be at least one Options Expiry Date populated, for example, *Options Expiry1, Options Expiry2, Options Expiry3, Options Expiry 4*, and
- The *User Creation Allowed* field must have a value of either '2' (Naked Option Only) or '3' (AnyDay Future and Naked Option)

Refer to the [Volume 09D – JSE Reference Data Management document](#) for additional information.

Step 2: Create a Delta Option

The Trading Member is required to provide the information below when submitting a **Security Definition Request Message**. The fields below are key fields that must be populated. Refer to the [Volume 01 - Native Trading Gateway document](#) to complete all other mandatory fields.

1.	Reference Instrument	This is the existing Option instrument which will be the second Leg instrument of the Delta Option.
2.	Security Type	This should be set to 'Delta Option'.

Step 3: Validations performed by the JSE Trading System (Delta Option)

Once the JSE receives the **Security Definition Request Message**, the JSE Trading System will perform a set of validations.

1. Validate that the Option's Strike Interval of the 'Leg 1 Futures instrument' - linked to the Delta Option - is not null or zero.
 - If the request does not pass validation it will be rejected with **error code 162023 – Option Strike Interval should have a valid value in Leg 1.**
2. Validate that there are no existing instruments with identical legs.
 - If the request does not pass validation it will be rejected with **error code 162015 – Instrument creation common validation failed.**

If a Firm receives one or more of the above validation errors, they must resubmit the same Delta Option 'creation request' with the correct data.

Step 4: JSE Trading System will source additional information and update the newly created Instrument (Delta Option)

Once all the above validations have passed, the JSE Trading System will create the Delta Option with the following fields.

1.	Expiry Date	This will be the same Expiry Date as the 'Leg 2 Options instrument'.
2.	Instrument Category	Set to 'Delta_Opt'.
3.	Instrument ID	JSE Trading System generated identification number.
4.	Symbol	Constructed using <Underlying(6) - [symbol of underlying spot instrument of the Future instrument]> + < First 3 characters of the Instrument Category(3)> + <Expiry Date(6)> + <Universal Instrument ID(9)> + <Call/Put(1)> <u>Example of a newly constructed Symbol:</u> Underlying (6) + First 3 characters of the Instrument Category (3) + Expiry Date (6) + Universal Instrument ID (9) + Call/Put (1) JSEABCANY1712180000041231
5.	<i>Leg 1 Instrument</i>	Underlying of the Option Instrument which will be the Future Instrument.
6.	<i>Leg 2 Instrument</i>	The selected Option Reference Instrument.
7.	<i>Security Description</i>	This is copied from the underlying Option.
8.	<i>Option Type</i>	The Option type of the Delta Option will depend on the Option Type of the Reference Instrument, that is, if Leg 2 is a Call Option, the user created Delta Option will be a Call Delta. Conversely, if the Leg 2 instrument is a Put Option, then the Delta Option will be a Put Delta.

4.3.3.4 Forward Forward FX

Trading Members are able to submit requests for new Forward Forward FX instruments via the Trading Gateway, using a **Security Definition Request Message**. This is detailed in the [Volume 01 – Native Trading Gateway – Security Definition Request document](#).

Step 1: Identify an eligible Reference Instrument

Eligible Reference Instruments can be identified as follows:

- The *User Creation Allowed* field must have a value of '1' (Allowed)

Refer to the [Volume 09D – JSE Reference Data Management document](#) for additional information.

Step 2: Create a Forward Forward

The Trading Member is required to provide the information below when submitting a **Security Definition Request Message**. The fields below are key fields that must be populated. Refer to the [Volume 01 - Native Trading Gateway document](#) to complete all other mandatory fields.

1.	Reference Instrument	The symbol of the FwdFwd future expiry that has been created for the given currency pair and time difference
2.	Security Type	This should be set to 'FwdFwd'
3.	Maturity Date (Near)	The earliest expiry date of the FwdFwd contract
4.	Far Maturity Date	The latest expiry date of the FwdFwd contract
5.	Near Month Type	Indicates the time difference (in months) between date of creation and the near expiry date
6.	Far Month Type	Indicates the time difference (in months) between the date of creation and the far expiry date

Step 3: Validations performed by the JSE Trading System (FwdFwd)

Once the JSE receives the **Security Definition Request Message**, the JSE Trading System will perform a set of validations.

1.	Validate that there are no existing instruments with identical legs
	If the request does not pass validation it will be rejected with error code 162015 – Instrument creation common validation failed.
2.	Validate that the reference instrument is a valid FwdFwd instrument.
	If the request does not pass validation it will be rejected with error code 162007 – Instrument creation common validation failed.
3.	Validate that the Far Month Maturity Date is less than the Near Month Maturity Date of the reference instrument.
	If the request does not pass validation it will be rejected with error code 162024 – Invalid Far Month Expiry.
4.	Validate that the Time difference field in the reference instrument matches the request
	If the request does not pass validation it will be rejected with error code 162025 – Near Month and Far Month Type does not match the time difference in the Reference Instrument

If a Firm receives one or more of the above validation errors, they must resubmit the same FwdFwd 'creation request' with the correct data.

Step 4: JSE Trading System will source additional information and update the newly created Instrument (FwdFwd)

Once all the above validations have passed, the JSE Trading System will create the Delta Option with the following fields.

1.	Time Difference	This is copied from the Reference Instrument
2.	Instrument Category	Set to 'FwdFwd.
3.	Symbol	Constructed using <Underlying(6) [Will be the reference instrument]><Near Expiry Date(6)><Tenor(4)><Universal Master Id(9)> where <i>Tenor</i> is calculated as <Near month type of the reference instrument(2 characters)><Far month type of the reference instrument (2 characters)> Example of a newly constructed Symbol: Underlying (6) + Near Expiry (6) + Tenor (4) + Universal Instrument ID (9) USD/ZA3112172124123456789

4.4 Segments

Segments will be created for the Derivative Markets to differentiate various groups of instruments depending on their type, style, or trading characteristic.

4.4.1 Equity Derivatives Segments

Code	Name
EDMF01	EDM Index Futures
EDMF02	EDM Single Stock Futures
EDMF03	EDM ALSI Futures
EDMF04	EDM ALMI Futures
EDMF05	EDM IDX Futures
EDMP01	EDM Standard Options
JSEDTP	EDM DTOP Futures
EDMMIS	EDM Miscellaneous

4.4.2 Currency Derivatives Segments

Code	Name
FXMF01	FXM Standard Futures
FXMF02	FXM Extended Futures
FXMP01	FXM Standard Options
FXMP02	FXM Extended Options
FXMMIS	FXM Miscellaneous

5 TRADING SESSIONS

Trading Sessions are used to define different types of trading activity for an instrument. Trading Sessions are also used to move instruments, through the trading day, in an orderly manner.

5.1 Normal Book Trading Sessions

The trading cycle, to which the Normal Order Books are attached, has the following sessions:

1. Start of Trading
2. Opening Auction Call – Applicable only for the FTSE/JSE ALSI and ALMI Top 40 Index Futures
3. Continuous Trading
4. Closing Auction Call
5. Post Close
6. Re-opening Auction Call
7. Halt
8. Halt and Close
9. Pause
10. Volatility Auction Call
11. EOD Volume Auction Call
12. Intraday Auction Call

5.2 Reported Trading Sessions

The trading cycle, to which the Off-Book Order Books are attached, has the following sessions:

1. Trade Reporting
2. Post Close
3. Halt

5.3 Trade Negotiation Sessions

The trading cycle, to which the Negotiated Trades Order Books are attached, has the following sessions.

1. Start of Trading
 2. Continuous Trading
 3. Halt
 4. Post Close
- The **Start of Trading** session, **Continuous Trading** session and **Post Close** session are scheduled sessions.
 - The **Continuous Trading** session is dedicated for trade negotiations. Trade negotiations are no longer possible at the end of the Continuous Trading session.
 - The **Halt** session is an unscheduled session.

5.4 Start of Trading Session

This session will typically be the first session for an instrument following the successful start of day process.

Start / End Times

The Start and End times of this session will be scheduled and will be automatically initiated.

Executions

No automatic executions will take place during this session.

Order Management

Traders will not be able to submit, cancel, or amend Orders during this session.

The GTC/GTD Orders, carried forward from the previous trading day (including unelected Stop Orders and Stop Limit orders), will be the only Orders in the Order Book.

Market Data

The start of this session will be published through the **MITCH Market Data Gateways**, including any updates performed by the JSE to the Order Book.

5.5 Opening Auction Call Session

The Opening Auction Call Session is only applicable for FTSE/JSE ALSI and ALMI Top 40 Index Futures and will be scheduled immediately after the Start of Trading session.

Start / End Times

This session will have a scheduled Start Time and End Time.

Executions

- The Orders accumulated during this session will be executed at the uncrossing, based on the Volume Maximizing Algorithm, following any Price Monitoring or Market Order Extensions.
- Any existing Hidden Orders will participate during the uncrossing of the auction.

Order Management

- All Orders accepted during this session will be added to the Order Book.
- Traders will be able to submit, cancel, or amend Orders during this session.
- Limit Orders or Market Orders, with IOC or FOK time qualifiers, will not be accepted during this session.
- Valid Stop Orders and Stop Limit Orders (including those that are electable and those with the time qualifier IOC or FOK) will be stored in an unelected state until the end of the session, at which point they may, if applicable, be elected.
- Any remaining Market Orders will expire following the uncrossing of the auction.
- Any remaining OPG Orders will expire following the uncrossing of the auction.
- Any remaining GFA Orders will be parked for the next auction.
- GTT Orders will not be expired during this session prior to the uncrossing.
- Any remaining GTT Orders, whose expiry times have elapsed, will expire following the uncrossing of the auction.

- If the JSE manually invokes a different session, then this is considered a session change, and all OPG Orders will expire.

Market Data

- The start of this session will be published through the MITCH Market Data Gateways.
- Order updates will be published through the MITCH Market Data Gateways.
- Indicative Auction information will be published through the MITCH Market Data Gateways.
- Trades executed at the uncrossing will be published through the MITCH Market Data Gateways.
- Statistical updates will be published through the MITCH Market Data Gateways.

Price Monitoring and Market Order Extensions

The Opening Auction Call Session may be followed by a series of Market Order and Price Monitoring Extensions. The number of extensions and duration of these extensions is defined per Market Segment in each trading session.

5.6 Volatility Auction Call Session (triggered)

Start / End Times

This session will only trigger when an instrument's 'circuit breaker tolerance level' has been breached. Volatility Auction Call sessions last for a scheduled period of 5 minutes.

Executions

The Orders accumulated during this session will be executed at the uncrossing, based on the Volume Maximizing Algorithm, following any Price Monitoring or Market Order Extensions.

Order Management

- All Orders accepted during this session will be added to the Order Book.
- Traders will be able to submit, cancel or amend orders during this session.
- Entry of Market Orders, Limit Orders, Stop Orders, and Stop Limit Orders will be allowed during this session.
- Limit Orders or Market Orders with IOC or FOK time qualifiers will not be accepted during this session.
- Valid Stop Orders and Stop Limit Orders (including those that are electable and those with the time qualifier IOC or FOK) will be stored in an unelected state until the end of the session at which point they may, if applicable, be elected.
- Parked GFA Orders if any, will be injected into the Order Book at the start of this session.
- Any remaining Market Orders will expire following the uncrossing of the auction.
- Any remaining GFA Orders will be parked (for the next auction) if the applicable GFA Policy is "Multiple Auctions", otherwise they will be expired following the uncrossing of the auction.
- GTT Orders will not be expired during this session prior to the uncrossing.
- Any remaining GTT Orders whose expiry times have elapsed will expire following the uncrossing of the auction.

Market Data

- The start of this session will be published through the MITCH Market Data Gateways.

- Order updates will be published through the MITCH Market Data Gateways.
- Trades executed at the uncrossing will be published through the MITCH Market Data Gateways.
- Statistical updates will be published through the MITCH Market Data Gateways.
- Indicative Auction information will be published through the MITCH Market Data Gateways.

Market Order Extensions

The Volatility Auction Call Session can be followed by a series of Market Order Extensions. The behaviour of the Market Order Extensions will be the same as for any other Auction Call Session.

5.7 Intraday Auction Call Session

Start End Time

This session will have a scheduled Start Time and End Time.

Executions

- The Orders accumulated during this session will be executed, based on the Volume Maximizing Algorithm, following any Price Monitoring or Market Order Extensions.
- Any existing Hidden Orders should participate during the uncrossing of the auction.

Order Management

- All Orders accepted during this session will be added to the Order Book.
- Traders will be able to submit, cancel or amend Orders during this session.
- Entry of Market Orders, Limit Orders, Stop Orders, and Stop Limit orders will be allowed during this session.
- Limit Orders or Market Orders with IOC or FOK time qualifiers will not be accepted during this session.
- Valid Stop Orders and Stop Limit Orders (including those that are electable and those with the time qualifier IOC or FOK) will be stored in an unelected state until the end of the session, at which point they may, if applicable, be elected.
- Parked GFA and GFX Orders if any will be injected into the Order Book at the start of this session.
- Any remaining Market Orders will expire following the uncrossing of the auction.
- Any remaining GFX Orders will expire following the uncrossing of the auction.
- Any remaining GFA Orders will be parked (for the next auction) if the applicable GFA Policy is "Multiple Auctions", otherwise they will be expired following the uncrossing of the auction.
- GTT Orders will not be expired during this session prior to the uncrossing.
- Any remaining GTT Orders, whose expiry times have elapsed, will expire following the uncrossing of the auction.
- If the JSE manually invokes a different session, then it is considered a session change, and all GFX Orders will expire.

Market Data

- The start of this session will be published through the MITCH Market Data Gateways.
- Order updates will be published through the MITCH Market Data Gateways.
- Trades executed at the uncrossing will be published through the MITCH Market Data Gateways.
- Statistical updates will be published through the MITCH Market Data Gateways.

- Indicative Auction information will be published through the MITCH Market Data Gateways.

Price Monitoring and Market Order Extensions

- The Intraday Auction Call session may be followed by a series of Market Order and Price Monitoring Extensions, where applicable.
- The behaviour of the Market Order and Price Monitoring Extensions is the same as any other Auction Call session.

5.8 Closing Auction Call Session

The Closing Auction Call session will be scheduled after the end of the Continuous Trading session. This session may also be triggered if a Circuit Breaker is breached within the Early Close Threshold.

Start End Time

This session will have a scheduled Start Time and End Time.

The Closing Auction Call session could, however, begin earlier (by the duration of the Early Close Threshold, which is determined by the JSE) if an instruments' Circuit Breaker is triggered.

The Early Close Threshold duration has been configured to last a period of 2 minutes. If the Early Close Threshold period is triggered for an instrument, the Closing Auction Call session will then begin 2 minutes earlier, but the session will end at the scheduled time.

Executions

The Orders accumulated during this session will be executed based on the Volume Maximizing Algorithm following any Price Monitoring or Market Order Extensions.

Order Management

- All Orders accepted during this session will be added to the Order Book.
- Traders will be able to submit, cancel or amend Orders during this session.
- Entry of Market Orders, Limit Orders, Stop Orders, Stop Limit Orders will be allowed during this session.
- Limit Orders or Market Orders with IOC or FOK time qualifiers will not be accepted during this session.
- Valid Stop Orders and Stop Limit Orders (including those with the time qualifier IOC or FOK) will be stored in an unelected state until the end of the uncrossing at which point they will be expired.
- Parked GFA and ATC Orders, if any, will be injected into the Order Book at the start of this session.
- GFX Orders can be entered at any time during the day, and they are parked and injected in the Intra Day auction. GFX Orders entered prior to the Intraday Auction will expire at the end of the uncrossing. GFX Orders entered after the Intraday Auction will expire at Market End.
- Any remaining Market Orders will expire following the uncrossing of the auction.
- Any remaining ATC Orders will expire following the uncrossing of the auction.
- Any remaining GFA Orders will be parked and expired at Market End, if the applicable GFA Policy is "Multiple Auctions", otherwise they will be expired following the uncrossing of the auction.
- GTT Orders will not be expired during this session prior to the uncrossing.
- Any remaining GTT Orders, whose expiry times have elapsed, will expire following the uncrossing of the auction.
- If the JSE manually invokes a different session, then it is considered a session change, and all ATC Orders will expire.

Market Data

- The start of this session will be published through the MITCH Market Data Gateways.
- Order updates will be published through the MITCH Market Data Gateways.
- Trades executed at the uncrossing will be published through the MITCH Market Data Gateways.
- Statistics updates will be published through the MITCH Market Data Gateways.
- Indicative Auction information will be published through the MITCH Market Data Gateways.

Price Monitoring and Market Order Extensions

- The Closing Auction Call session may be followed by a series of Market Order and Price Monitoring Extensions, where applicable.
- The behaviour of the Market Order and Price Monitoring Extensions is the same as any other Auction Call Session.

5.9 Daily Trading Day Life Cycle

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	
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				16:50 - 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		
EDM_FUTURES	07:00 - 08:15	08:15 - 08:30 *	08:30 - 17:30							17:30 - 18:30	08:00 - 18:30	
EDM_OPTIONS	07:00 - 08:15	08:15 - 08:30 *	08:30 - 17:30							17:30 - 18:30	08:00 - 18:30	
FX_FUTURES	07:00 - 09:00		09:00 - 17:00							17:00 - 18:00	08:00 - 18:00	
FX_OPTIONS	07:00 - 09:00		09:00 - 17:00							17:00 - 18:00	08:00 - 18:00	
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

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	
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	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 - 13:00		
ZA04	07:00 - 08:30	08:30 - 09:10	09:10 - 11:49					11:49 - 11:50		11:50 - 13:00		
EDM_FUTURES	07:00 - 08:15	08:15 - 08:30 *	08:30 - 12:15							12:15 - 12:30	08:00 - 12:30	
EDM_OPTIONS	07:00 - 08:15	08:15 - 08:30 *	08:30 - 12:15							12:15 - 12:30	08:00 - 12:30	
FX_FUTURES	07:00 - 09:00		09:00 - 12:00							12:00 - 12:15	08:00 - 12:15	
FX_OPTIONS	07:00 - 09:00		09:00 - 12:00							12:00 - 12:15	08:00 - 12:15	
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

Futures Close Out Day

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				
EDM FUTURES	07:00 - 08:15	08:15 - 08:30 *	08:30 - 12:00								12:00 - 18:30	08:00 - 18:30			
EDM_OPTIONS	07:00 - 08:15	08:15 - 08:30 *	08:30 - 12:00								12:00 - 18:30	08:00 - 18:30			
Functionality allowed	View open/expired orders; manage O f Book trades	Order entry/amendment /deletion; manage O f Book trades	Order entry/amendment/ deletion; submission of orders with EHL flag; automatic matching; manage O f Book trades	Order entry/amendment/ deletion; submission of orders with EHL flag; automatic matching; manage O f Book trades	Order entry/amendment/ deletion; manage O f Book trades	Order entry/amendment/ deletion; submission of orders with EHL flag;automatic matching; manage O f Book trades	Order entry/amendment/ deletion; manage O f Book trades; unexecuted orders with EHL flag are expired	Closing price publication; order deletion; manage O f Book trades	Order entry, order modification (except price), order deletion; manage O f Book trades	Order entry at the closing price only / amendment of the size only / deletion	Order deletion; GTT orders are expired; manage O f Book trades	Manage O f Book trades			

Daylight Saving

DAYLIGHT SAVING

	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
FX FUTURES	07:00 - 09:00		09:00 - 16:00								16:00 - 18:30	08:00 - 16:00
FX_OPTIONS	07:00 - 09:00		09:00 - 16:00								16:00 - 18:30	08:00 - 16:00
Functionality allowed	View open orders; view expired orders; manage O f Book trades	Order entry; amend orders; order deletion; manage O f Book trades	Order entry; order modification, order deletion, manage O f Book trades, automatic matching	Order entry; order modification, order deletion, manage O f Book trades, automatic matching	Order entry; amend orders; order deletion; manage O f Book trades	Order entry; order modification, order deletion, manage O f Book trades, automatic matching	Order entry; amend orders; order deletion; manage O f Book trades	Order deletion, manage O f Book trades	Order entry, amend orders, order deletion, Manage O f Book trades	Order entry at the closing price only / amendment of the size only / deletion	Order deletion; GTT orders are expired; manage O f Book trades	Manage O f Book trades

6 TRADING AND MARKET DATA

This section describes the core order-driven trading functionality that is available to support trading in the JSE Markets.

6.1 Order Management

6.1.1 Cancel on Disconnect/Logout

The JSE Trading System offers the functionality to expire all open Orders/Quotes, including Stop Orders and Stop Limit Orders, should the CompID disconnect/logout from the Trading Gateways.

This is to ensure that during periods where the Firm is not connected, that there are no Orders/Quotes that can potentially be filled.

This preference is set per CompID, within the Firm, and will apply to all Orders that are submitted through the specific CompID.

The preferences on the CompID have the additional ability to:

- Expire all Orders,
- Do not expire Orders, or
- Expire Orders excluding GTC/GTD Orders.

When submitting a new Order, Firms have the option to specify whether each single Order should conform to the user's preferences. For example, even if a user's configuration is set to 'cancel on disconnect/logout', an Order can still be flagged so that it is not cancelled when the user disconnects/logs out.

Note: It is not possible to flag an Order for cancellation if the CompID is configured to not cancel Orders on disconnect/logout.

Disconnect Delay

As 'connection breaks' occur in fractions of a second, a CompID is set up with a Disconnect Delay (specified in milliseconds). This feature specifies how long the JSE Trading System will wait before expiring open Orders/Quotes.

If the CompID logs back in, within the specified 'delay duration period', open Orders/Quotes will not be expired. If no value is sent in the initial message, defining the cancellation preference, the JSE Trading System will consider the Order as 'Do Not Cancel'. Please refer to the table below for specific scenarios.

Mass Cancel on Disconnect/Logout	User-specified value in Order/Quote	Action performed
Yes	Do Not Cancel	No Cancellation
No	Do Not Cancel	No Cancellation
No	Cancel	No Cancellation
Yes	Cancel	Cancellation effective
Yes	Unset Not set	No Cancellation
No	Unset	No Cancellation

6.1.2 Order Types

6.1.2.1 Market Order (MO)

Market Orders only stipulate the volume of shares for trade. They do not specify any Limit Price.

A Market Order will be executed against all the possible price levels on the contra side.

Market Orders submitted during the Continuous Trading Session will execute against each Contra Order in the Order Book until it is fully filled. If, after executing against all Orders in the Order Book there is a remainder, it will expire.

Market Orders that are submitted during an Auction Call Session will reside in the Order Book until the uncrossing is performed, at which point the remainder of unexecuted Market Orders will be expired.

6.1.2.2 Limit Order (LO)

Limit Orders stipulate both Volume and Limit Price. A Limit Order may execute at prices equal to or better than its Limit Price.

If after executing against all appropriately priced Orders in the Order Book, there is a remainder, it will be added to the Order Book or expired based on the Time in Force (TIF).

6.1.2.3 Stop Order (SO)

A Stop Order is a Market Order that will remain unelected, without entering the Order Book, until the Stop Price is reached.

Once a Stop Order is elected, it will be treated similar to a regular new Market Order.

- A Stop Order with a 'Time in Force' of OPG, GFA, GFX ATC and CPX will be rejected.
- A Stop Order with a 'Time in Force' of DAY, GTC, GTD and GTT can be entered during the Auction Call Sessions, but will only be elected in the Continuous Trading Session, following the Auction Call Session in which it was entered.

6.1.2.4 Stop Limit Order (SL)

A Stop Limit Order is a Limit Order that will remain unelected, that is, without entering the Order Book, until the Stop Price is reached.

Once elected, a Stop Limit Order will be treated similar to a regular new Limit Order.

- A Stop Limit Order with a 'Time in Force' of OPG, GFA, GFX ATC and CPX will be rejected.
- A Stop Limit Order with a 'Time in Force' of DAY, GTC, GTD and GTT can be entered during the Auction Call Sessions, but will only be elected in the Continuous Trading Session, following the Auction Call Session in which it was entered.

Election Rules for Stop Orders and Stop Limit Orders

The trigger for electing Stop Orders, and Stop Limit Orders, will be the Last Traded Price.

- **Stop Orders** and **Stop Limit Buy Orders** will be elected if the Last Traded Price is equal to or greater than the Stop Price.
- **Stop Orders** and **Stop Limit Sell Orders** will be elected if the Last Traded Price is equal to or less than the Stop Price.

An incoming Stop Order or Stop Limit Order may be immediately elected on receipt, if the Stop Price has already been reached.

If the Triggering Price is not available, for example, the Last Traded Price does not exist, then the incoming Stop Orders and Stop Limit Orders will not be elected on entry, and will be parked.

Stop Orders and Stop Limit Orders will be elected only at the end of the execution of an Order, for example, if an Aggressing Order is sweeping multiple price points on the Order Book, Stop Orders and Stop Limit Orders are elected only once the Aggressing Orders have completed their execution.

Election Priority for Stop Orders and Stop Limit Orders

If there are multiple Stop Orders or Stop Limit Orders to be elected, after a trade has occurred, the election priority will be as follows:

- Orders will be elected in terms of the difference between their Stop Price and the Auction Price.
- The Buy Order, or Sell Order, with the greatest difference between its Stop Price and the Auction Price, will be elected first.
- If multiple Orders are at the same difference (buy and sell), the oldest Order will be elected first.

Refer to APPENDIX C - EXAMPLES OF STOP ORDERS AND STOP LIMIT ORDERS for examples of a Stop Order and Stop Limit Order.

6.1.2.5 Market If Touched (MIT) Orders

Market If Touched (MIT) orders allow an order to be parked up until a certain price condition is met. Once the price condition is met, the order will be entered in to the order book.

While in this sense, MIT orders are similar to Stop orders, MIT orders intend to achieve the exact opposite of the Stop orders; Stop orders are used to exit from a loss making position. MIT orders are used to book a profit.

MIT orders are essentially market orders. MIT orders cannot be entered with a Limit Price. Booking a profit better than the current market with a Limit price can be achieved by entering a limit order.

The Price or trigger condition for MIT orders is similar to Stop orders, i.e. they are triggered based on the last traded price. Buy MIT orders are elected if the reference price is equal to or below the trigger price. Sell MIT orders are elected if the reference price is equal to or above the trigger price.

Similar to other parked orders, parking and election of MIT orders are communicated to clients via order management gateways.

6.1.2.6 Market to Limit Orders (ML)

A Market To Limit (MTL) order allows the user to aggress the contra-side of an order book as a market order but convert the remaining quantity at the end of aggression to a limit order. An unexecuted MTL order can also get converted to a limit order.

An MTL order will behave as a market order if entered during an auction call session. At the end of the auction, if there is left over quantity with the order, it is converted to a limit order at the available dynamic reference price of the instrument. An MTL order can be entered with any TIF (subject to some conditions).

An MTL order can have any TIF except ATC and GFA. However, only an order with a TIF of DAY/GTD/GTC/GTT can be amended.

If the MTL order is submitted during an auction call and has a TIF that is either IOC or FOK, that order is rejected. If the MTL order is submitted during continuous trading and has a TIF that is either IOC or FOK, then the order is treated as a market order. It is either completely filled or expired, in the case of a FOK or filled as much as possible and expired, in the case of an IOC. The order is never added to the order book with a limit price.

Similar to a Market Order, an MTL order is entered without a limit price and the order aggresses through all match-able orders on the contra-side. If there is left over quantity of the MTL order at the end of the aggression, then the MTL order is assigned with a limit price equal to the last execution it received and is added to the order book. The order type of the order is changed to "Limit" when adding the order to the book. If the order did not receive any execution the MTL order is added to the order book with a limit price equal to the Dynamic Reference Price. The order type of the order is changed to "Limit" when adding the order to the book. If the Dynamic Reference Price is not defined, then the order is expired at the end of the aggression without being converted to a limit order.

If entered during an auction call, an MTL order behaves as a market order up until the end of auction uncrossing. If an uncrossing is performed, the order is converted to a limit order (provided there is left over quantity) with a limit price of auction price at the end of the uncrossing. If there is no uncrossing, at the end of the auction call, the MTL order is converted to a limit order with the instrument's Dynamic Reference Price as its limit price.

6.2 Quote Management

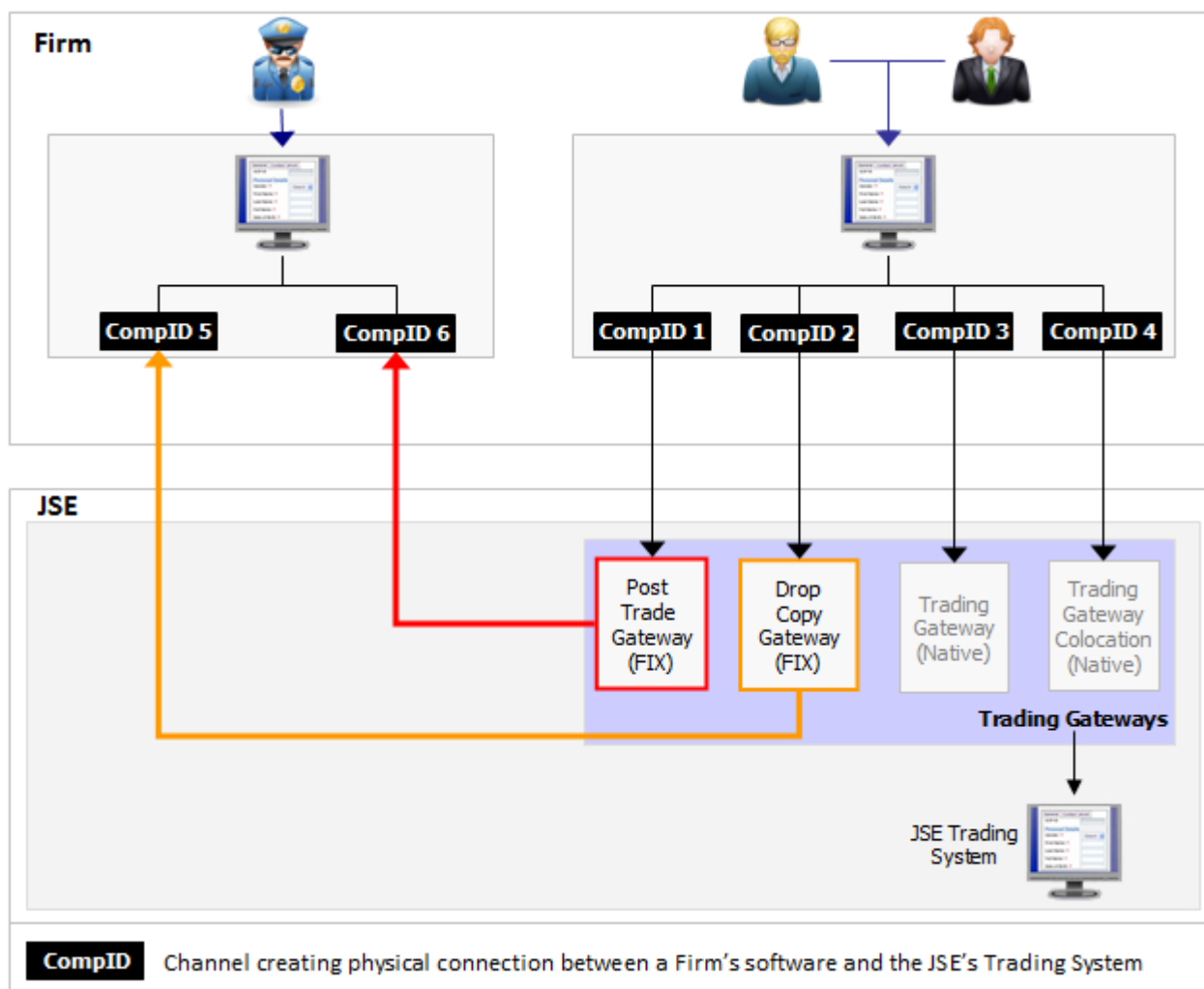
The JSE Trading System offers the added functionality of Quotes. These are essentially doubles (buy and sell side Orders) that are submitted through the use of one **Quote message**. Firms are able to cut down on their inbound Order rate by submitting a single **Quote message** instead of individual buy and sell messages. Both sides of the Quote will reside on the Order Book as two independent Orders. A Quote is not cancelled if either the buy or sell side is executed against.

Refer to the [Volume 01 – Native Trading Gateway document](#) for additional information.

6.3 Trade and Drop Copy functionality

The JSE Trading System offers real-time Trade and Drop Copy functionality.

This functionality permits any CompID an instantaneous view of the status of Orders and Trades in the market, in the fastest way possible, by receiving them directly from the JSE Trading System. This is achieved by connecting to the **Drop Copy Gateway** in order to receive **Execution Reports**, and the **Post Trade Gateway** in order to receive **Trade Capture Reports**.



This functionality allows a Firm to receive **Execution Reports** or **Trade Capture Reports** on a separate CompID for independent risk management or order management. These reports are sent in real-time.

- The **Execution Reports** indicate the status of every Order.
- The **Trade Capture Reports** indicate the status of each successful trade for both On-Book trades and Reported trades, as well as the Negotiated Order Book.

There are numerous ways to utilise this functionality:

- Directly as a Trading Member,
- A Risk or Regulatory Division within a trading Firm,
- A Clearing Member wishing to receive real-time updates on Trading Member positions.

All applicable settings are linked to the role and parameters of the CompID.

6.3.1 Trade and Drop Copy connection within a Firm

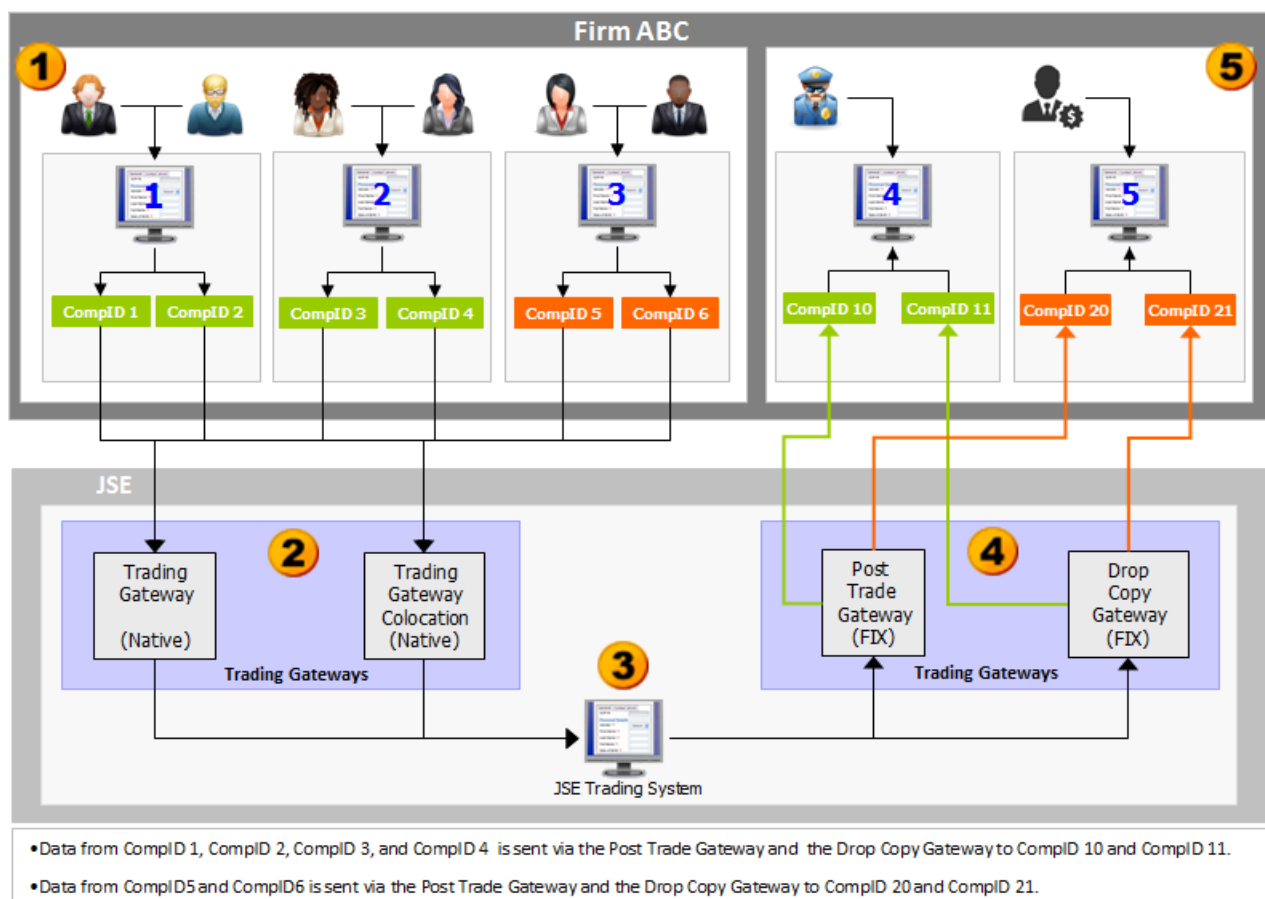
Firms can request a real-time connection to be set up on a **Firm Level** or a **CompID level**.

The most common practice is to receive a copy of all **Execution Reports** or **Trade Capture Reports** for the whole Firm.

The JSE Trading System can be configured in order for Users, within a Firm, to receive a subset of Orders that were submitted via certain CompIDs.

Example: Trade and Drop Copy connection

Please note that the diagram below is merely one example of how this functionality can be implemented. Please contact the JSE for further information on this functionality.



6.3.2 Trade and Drop Copy connection between Firms

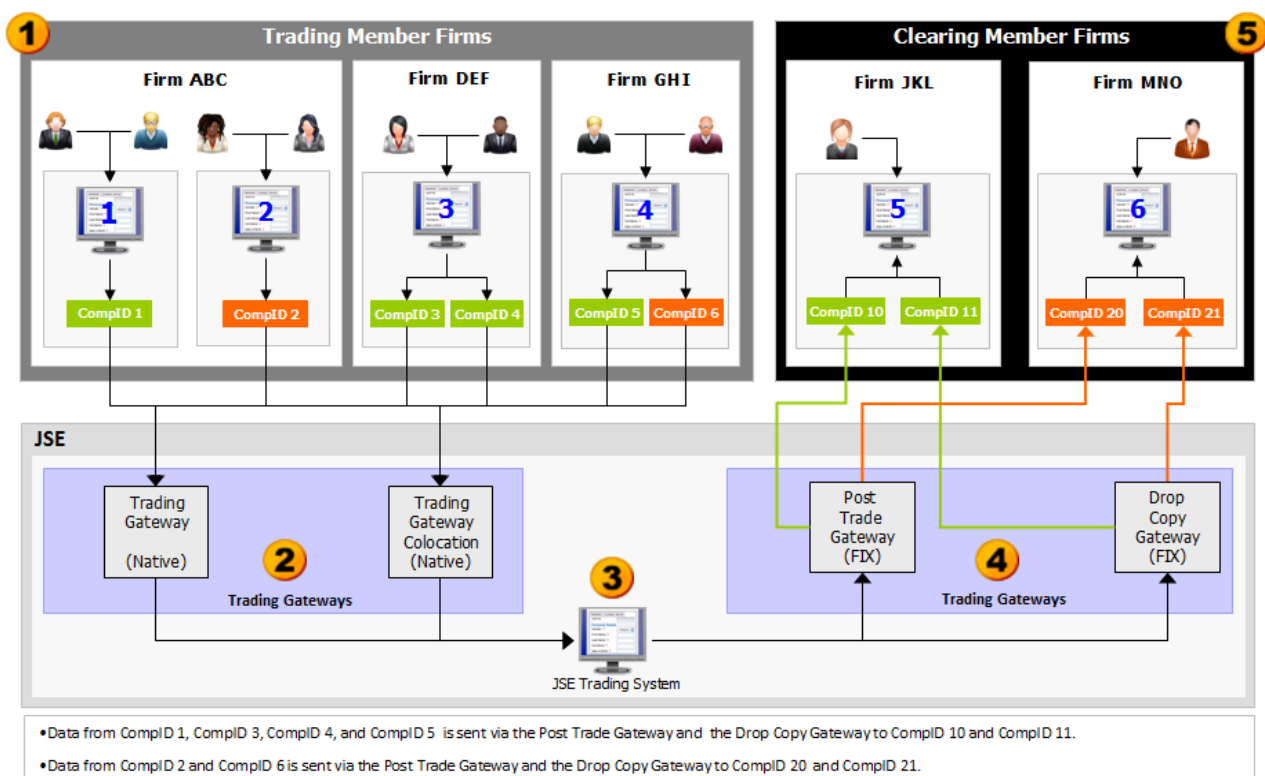
Firms can request a real-time connection to be set up on a **Firm Level** or a **ComplID level**.

The JSE Trading System can be configured in order for **Execution Reports** and **Trade Capture Reports** to be sent between Firms.

Note: A Clearing Member can receive a copy of real-time data.

Example: Trade and Drop Copy connection

Please note that the diagram below is merely one example of how this functionality can be implemented. Please contact the JSE for further information on this functionality.



6.4 Circuit Breakers and Price Bands

Circuit breaker tolerance is defined as a percentage in relation to the Static Reference Price and / or Dynamic Reference Price. If the difference between the price of the next trade and the Static Reference Price or Dynamic Reference Price is equal or greater than that permitted by the circuit breaker tolerance defined for the relevant session the instrument will automatically be moved into a Volatility Auction Call session. Circuit breaker tolerances are defined at a trading session level.

Instruments trading in the Equity Derivative Market will be subject to circuit breakers and if triggered will move the instrument into a Volatility Auction.

The following percentages have been defined for the Equity Derivatives Market:

	Single Stock Futures	Index Futures
Trading Session	Static Circuit Breaker %	Dynamic Circuit Breaker %

Continuous Trading	8%	4%
Opening Auction Call	8%	4%
Volatility Auction Call	8%	4%
Re-Opening Auction Call	8%	4%

Instruments trading in the Currency Market will be subject to Price Bands. These limit entry of an order that may breach certain thresholds set in the trading system. The price bands do not limit orders that are entered far away from the current market price, only should they aggress the order book and breach the price band.

The following price bands have been defined for the Currency Derivatives Market:

Currency Derivatives Market	
Priceband Inner Limit %	4%
Priceband Outer Limit %	8%

6.5 Market Data Attributes

Market Data is published through the MITCH Market Data Gateway, please refer to [Volume 05 – Market Data Feed \(MITCH – UDP\)](#) for full details of the service offering. Highlighted below are some statistics for further information.

6.5.1 VWAP

Volume Weighted Average Price (VWAP) is calculated by the system and published via the Market Data Gateways per instrument whenever there is a trade. The VWAP formula is defined as follows:

$$\text{VWAP} = \text{Sum of (Executed Price * Executed Size)} / \text{Sum of (Executed Size)}$$

6.5.2 Open Interest

The Open Interest of an instrument will be published through the Market Data Gateway at 30min intervals starting from around 07:00 SAST before market trading sessions begin until around 18:30 SAST after the markets have closed. Please refer to [Volume PT00 – Post-Trade Services Overview](#) for more information on the calculation of Open Interest.

7 IMPLIED ORDERS

Implied Orders (similar in concept to Phantom Orders) are supported by the JSE in order to increase the probability of an Order being executed.

This concept is useful in trading Synthetic Instruments where an Order in the Synthetic Instrument, in reality, represents the intention to trade the Leg Instruments in a single execution. This is accomplished through the generation of Implied Orders, which represent the liquidity present in Leg Instruments resulting from Orders placed in Synthetic Instruments and vice-versa.

Implied Orders can be generated at all price points in the Order Book, and are created using both real Orders, as well as other Implied Orders. These Orders, which are used to generate Implied Orders are termed Base Orders. The Execution Reports will advise the Firm of a trade that occurs either in a Synthetic Instrument or a Leg Instrument.

Settlement and clearing will occur only on trades resulting from Leg instruments, and not Synthetic Instruments.

7.1 Three types of Implied Orders

The JSE Trading System caters for three types of Implied Orders, named from the perspective of the Synthetic instrument.

Implied In Orders	Implied In Orders are generated into Synthetic Instruments using the liquidity present in Leg Instruments. Implied In Orders are derived from regular posted Orders on individual Legs. Implied In Orders create a synthetic strategy market available for trading to all market Firms.
Implied Out Orders	Implied Out Orders are generated into Leg Instruments using the liquidity present in the Synthetic Instrument and other Leg Instruments, that is, generated out of the Strategy Instrument. In other words, Implied Out Orders are derived from a combination of an existing regular spread Order and an existing outright Order in one of the underlying individual legs. This type of Order creates a synthetic market on the other underlying leg.
Implied Across Orders	Implied Across Orders are generated into Synthetic Instruments using liquidity present in other Synthetic Instruments, that is, generated across Strategy Instruments.

7.2 Market Data Publication and Messaging regarding Implied Orders

Execution Reports generated for Implied Orders, for which an 'Owner' can be assigned, are disseminated back to Firms. The **Execution Report** will have the following features/exceptions:

- The 'Time in Force' of the Order is always set to DAY.
- The Client Order ID is not set.
- Any additional fields which are completed on the Order Entry, by the Firm, will not be populated in the **Execution Report** that is generated for an Implied Order.

Implied Orders are disseminated via the MITCH Market Data Gateways as they would for any normal Order. Implied Order executions are disseminated via the Trade Message on the MITCH Market Data Gateways. Refer to [Volume 5 - Market Data Gateway \(MITCH - UDP\) document](#) for additional information.

7.3 Implied In Orders

Implied In Orders will be generated into Synthetic Instruments using the liquidity present in the associated Leg Instruments.

Orders present in two Futures Instruments offer an opportunity for a Trader to sell one of the Futures Instruments and buy the other. This corresponds to a trade on a Synthetic instrument.

The JSE Trading System displays this liquidity on the Synthetic Instrument using an Implied In Order. The side of the Synthetic Instrument, to which the Implied In Order will be generated, is determined as follows, where Leg 1 is assumed to be the nearest expiry of the Futures Instrument:

Leg 1	Leg 2	Spread
Sell	Buy	Implied Buy
Buy	Sell	Implied Sell

7.3.1 Price derivation of Implied Orders

The following formulae can be applied to determine the prices of Implied In Orders.

- Leg1 Price = Leg2 Price - Spread Price
- Leg2 Price = Leg1 Price + Spread Price

7.3.2 Quantity derivation of Implied Orders

Implied Orders may be derived from 2 Base Orders of differing quantities. In general, the minimum quantity from the Base Orders will be taken as the Implied Order Quantity. More specifically, the following formulae will be applied to determine the quantities of Implied In Orders.

- Spread Order Size = Min(Leg1 Order Size, Leg2 Order Size)

7.3.3 Generation of Implied In Orders

Implied In Orders are generated into a Synthetic Instrument using either outright Orders or other Implied Orders that are present in the Leg Instruments of the Synthetic Instrument.

Example of an Implied In Order:

MAR16FUT				JUN16FUT			
	98.30	5	TR1	TR2	5	98.31	
MARJUN16INV							
SYS	5	0.01					

In the above example, the outright Orders in the Futures Instruments MAR16FUT and JUN16FUT result in an Implied In Order on the MARJUN16INV Synthetic Instrument.

7.3.4 Ownership of Implied In Orders

Since Implied In Orders represent interest from multiple Traders, it is not possible to identify the 'Owner' of the Implied In Order. As such, Implied In Orders are generated as JSE Trading System Orders, which do not have an 'Owner'.

Note: The 'Order Capacity' of Implied In Orders will always be 'Agency'.

7.3.4.1 Execution of Implied In Orders

Matching of Implied In Orders results in the JSE Trading System executing the Base Orders in the Leg Instruments to reflect the 'Implied Execution' on those Orders. Leg trades are generated using the prices of the Base Orders.

Example:

Trader TR1 submits a sell order on Future MAR16FUT.

Trader TR2 submits a buy order on Future JUN16FUT.

The JSE Trading System automatically generates an Implied Buy Order on the MARJUN16INV Synthetic Instrument to which the generic owner 'SYS' is assigned.

MAR16FUT				JUN16FUT			
	200	5	TR1	TR2	5	210	

MARJUN16INV			
SYS	5	10	

A Trader submits an outright sell Order on the MARJUN16INV Synthetic Instrument. This will result in the following executions in the Leg Instruments, resulting from the execution of the Implied In Order:

- Trade in *MAR16FUT* at 200 with a quantity of 5.
- Trade in *JUN16FUT* at 210 with a quantity of 5.

7.3.5 Price improvement on Implied In Order Executions

In cases where newly generated Implied In Orders execute against already existing orders, on the contra-side of the Synthetic Instrument, the Implied In Order may be executed at a better price than the price at which it was originally created. The price improvement received in such an execution is applied to the Base Order which belongs to the near month Futures Instrument. Therefore, in a 'price improvement' scenario, passive Base Orders in the Order Book may execute at a better price than the displayed price.

7.4 Implied Out Orders

An Implied Out Order is created on one of the Leg instruments of an Inverse Calendar Spread, that is, a Futures Instrument, using Orders that are present in the Synthetic Instrument, together with the other Leg of the Inverse Calendar Spread.

The side of the Leg Order Book to which the Implied Out Order will be generated is determined as follows, where Leg 1 is assumed to be the nearest expiry of the Futures Instrument:

Leg 1	Spread	Leg 2
Explicit Buy Order	Explicit Buy Order	Implied Buy
Implied Sell	Explicit Buy Order	Explicit Sell Order
Explicit Sell Order	Explicit Sell Order	Implied Sell
Implied Buy	Explicit Sell Order	Explicit Buy Order

7.4.1 Price derivation of Implied Out Orders

The following formulae can be applied to determine the prices of Implied Out Orders.

- Spread Price = Leg2 Price - Leg1 Price

7.4.2 Quantity derivation of Implied Out Orders

Implied Out Orders may be derived from 2 Base Orders of differing quantities. In general, the minimum quantity from the Base Orders will be taken as the Implied Order Quantity. More specifically, the following formulae will be applied to determine the quantities of Implied Out Orders.

- Leg1 Size = Min(Spread Order Size, Leg2 Order Size)
- Leg2 Size = Min(Spread Order Size, Leg1 Order Size)

7.4.3 Generation of Implied Out Orders

Implied Out Orders are generated into a Leg of a Synthetic Instrument by using Orders that are present in the Synthetic Instrument and the other Leg of the Synthetic Instrument. Only the unallocated visible quantities of Orders, that are present in the Order Book, will be used to generate Implied Out Orders.

Note: Implied Out Orders are not generated if an 'owner' cannot be determined by the JSE Trading System.

7.4.4 Ownership of Implied Out Orders

The owner of an Implied Out Order is always the Owner of the Base Order in the Synthetic Instrument that was used to generate the Implied Out Order.

If the Base Order in the Synthetic Instrument was a System order (that is, an Implied In Order or an Implied Across Order), then the Implied Out Order is treated as a System order.

7.4.5 Execution of Implied Out Orders

If any Order matches with the Synthetic Instrument Order itself (that is, on the Inverse Calendar Spread Order Book), the Order is executed as a normal Synthetic Order. Leg trades are generated using the applicable reference prices in the Leg Order Books together with the quoted price of the Synthetic. Refer to the examples below.

7.4.6 Example of Implied Out Order price determination

MAR16FUT			JUN16FUT		
TR1	5	200	TR2	5	210

MARJUN16INV		
TR2	5	10

The outright Orders in the MAR16FUT Futures Instrument and MARJUN16INV Synthetic instrument results in an Implied Out Order generated on the JUN16FUT Future Instrument.

A trader submits a sell order on MARJUN16INV Synthetic Instrument, which matches with TR2. This will result in the following executions in the Leg Instruments:

- Trade in *MAR16FUT* at 200 with a quantity of 5.
- Trade in *JUN16FUT* at 210 with a quantity of 5.

If any of the Implied Out Orders are executed, then the JSE Trading System executes the Base Orders to reflect the 'Implied Execution' of those Orders. Leg trades are generated using the prices of the Base Orders and the Implied Out Orders.

7.4.6.1 Example of an Implied Out Order execution

MAR16FUT				JUN16FUT			
TR1	5	200		TR2	5	210	

MARJUN16INV			
TR2	5	10	

Using the Order Books illustrated above, prior to execution, suppose a Trader submits a sell order on the JUN16FUT Order Book which matches with the Implied Out Order. This will result in the following executions:

- Trade in *JUN16FUT* at 210 with a quantity of 5.
- Trade in *MARJUN16INV* at 10 with a quantity of 5.
- Trade in *MAR16FUT* at 200 with a quantity of 5.

7.4.6.2 Price improvement on Implied Out Order executions

It is possible that the Implied Out Orders, generated into the Leg instruments of a Synthetic Instrument, can be executed against already existing Orders on the contra-side of the Leg instrument.

In such cases, the Implied Out Order may be executed at a better price than the price when it was initially created. The price improvement, received in such an execution, is applied to the Base Order in the Synthetic Instrument.

7.4.7 Implied Across Orders

Implied Across Orders can be generated through a set of Synthetic instruments which share a common Leg instrument.

Implied Across Orders are created from Synthetic instruments into other Synthetic instruments only, where all instruments have one common Leg with each of the other instruments.

Synthetic instruments which share a common Leg instrument can imply a price difference between the other two distinct Legs of the two Synthetic Instruments. This, therefore, implies an opportunity for a trader of a third Synthetic Instrument, which consists of the said two Legs, to execute against the implied liquidity.

To illustrate this, consider a scenario where there are 3 Futures instruments on the same Underlying Instrument.

- The Futures instrument which expires earliest is known as the **Near Month**.
- The next Futures instrument to expire is known as the **Middle Month**.
- The last Futures instrument to expire is known as the **Far Month**.

If two Synthetic Instruments are set up using these three Futures, and share the Middle Month Future, then buying the two Synthetic Instruments implies buying the Near Month Future and selling the Far Month Future. This is because the Middle Month Future will be bought and sold by the two Synthetic Instruments, resulting in a zero position on this Future.

This provides an opportunity to execute against a seller of a Synthetic Instrument consisting of the Near Month and a Far Month. This liquidity is displayed on the third Synthetic Instrument as an Implied Across Order.

The side of the **Spread Order Book**, into which the Implied Across Order is created, will be determined as follows:

Example 1:

Base 1 – AB	Base 2 – BC	Destination – AC
Buy	Buy	Implied Buy
Sell	Sell	Implied Sell

Example 2:

Base 1 – AC	Base 2 – BC	Destination – AB
Sell	Buy	Implied Sell
Buy	Sell	Implied Buy

Example 3:

Base 1 – AB	Base 2 – AC	Destination – BC
Buy	Sell	Implied Sell
Sell	Buy	Implied Buy

7.4.8 Price derivation of Implied Across Orders

The following formulae can be applied to determine the prices of Implied Across Orders.

-

Example 1

- Price of Spread1 + Price of Spread2 = Price of Spread3

Example 2:

- Price of Spread1 - Price of Spread2 = Price of Spread3

Example 3:

- Price of Spread2 - Price of Spread1 = Price of Spread3

7.4.9 Quantity derivation of Implied Across Orders

Implied Across Orders may be derived from two Base Orders of differing quantities. In general, the minimum quantity from the Base Orders will be taken as the Implied Order Quantity. More specifically, the following formulae will be applied to determine the quantities of the Implied Across Orders.

- Spread3 Order Size = Min(Spread1 Order Size, Spread2 Order Size)

7.4.10 Generation of Implied Across Orders

Implied Across orders may be generated from two Synthetic Instruments to another Synthetic Instruments. Both of the Synthetic Instruments share one of the legs with the other Synthetic Instrument the Implied order is generated to. .

The initial Order Book is illustrated below:

MARJUN16INV				JUNSEP16INV			
TR1	5	0.30					
MARSEP16INV							

A trader (TR2) submits a buy order on the JUNSEP16INV Order Book. This will result in the generation of an Implied Across Order on the MARSEP16INV Order Book.

MARJUN16INV				JUNSEP16INV			
TR1	5	0.30		TR2	10	0.20	
MARSEP16INV							
MARSEP16INV							
SYS	5	0.50					

7.4.10.1 Ownership of Implied Across Orders

As a single Implied Across Order represents execution interests from multiple parties, Implied Across Orders are not assigned with an 'Owner'. Instead, Implied Across Orders are generated as System Orders, which do not have an 'Owner'.

Note: The 'Order Capacity' of Implied Across Orders will always be 'Agency'.

7.4.11 Execution of Implied Across Orders

If any of the Implied Across Orders are executed, the JSE Trading System will execute the Base Orders to reflect the 'Implied Execution' of those Orders.

The **MITCH Market Data Gateways** are updated for Implied Across Order executions for both Synthetic Instruments as well as Leg Instruments.

The **Trade Capture Reports** are updated for Implied Across Order executions for Synthetic Instruments as well as Leg Instruments.

In Implied Across Order executions, the 'aggressor' of the leg trades is determined in the following manner:

- If the order executing against the Implied Across order is an Implied In Order, then the passive side of each of the Leg trades will be the Base Order (of the Implied In Order) of each Leg.
- If the order executing against the Implied Across order is not an Implied In Order, then the passive side of each of the Leg trades will default to the sell side.

7.4.12 Price improvement on Implied Across Order executions

It is possible that the Implied Across Orders execute against existing Orders on the contra-side of the destination Synthetic instrument. In such cases, the Implied Across Order may be executed at a better price than the price when it was initially created.

When an Implied Across Order is created using Base Orders in two Synthetic Instruments (to another Synthetic Instrument), then the price improvement is granted to the Base Order in the Synthetic Instrument that has the closest Near Month Future. When both Synthetic Instruments have the same Near Month Future as a common Leg, then the price improvement is granted to the Base Order in the Synthetic Instrument that has the Leg with the next closest expiration date.

7.4.13 Leg Trade Pricing

When **Implied Across Orders** are executed, price determination for the Leg instruments will be calculated as discussed below.

Phase 1: The Base 1 Synthetic instrument is considered and the following methodology applied:

1. If the Base Order is an Implied In Order, the Legs of this instrument are priced as they would be in an Implied In execution, that is, the Leg trade price is equal to the Base Order prices of the particular Implied In Order. All other executions for the Implied Across Order chain are executed using this price as a reference.
2. If the Base Order is an Implied Across Order, the algorithm moves to that Implied Across Order chain, starting from point 1 (base 1) and applies the methodology in point 1 above.

Phase 2: If none of the Orders involved in the execution are Implied In Orders, the Leg 1 instrument of Base 1 is used as the Reference instrument.

1. Reference Price of the Leg 1 instrument is used to price Leg 2 of the Base 1 instrument.
2. The Price of Leg 2 of Base 1 (as derived in the above step) is used together with the price of Base 2 (that is, the Synthetic Instrument), to generate the price of Leg 1 of Base 3. This process continues until all legs in the chain are priced.

7.5 Rules regarding Implied Order generation

7.5.1 Priority of Implied Order generation

Implied Orders are ranked by Implied Type in the following order:

- Implied In Order : based on Order Book name (alphabetical)
- Implied Out Order: first by Synthetic symbol then by destination Leg
- Implied Across: Orders are evaluated based on how the order of the implied across table entries are listed. That is, generation is based on the order in which the table entries are placed.

7.5.2 Rules for Implied Order generation

The following general rules will apply when generating Implied Orders:

- Only the unallocated visible quantities of Orders, that are present in the Order Book, will be used to generate Implied Orders.
- The Synthetic instruments and the base instruments may have different lot sizes. In such instances, the size of the Implied Order will be rounded down according to the lot size of the instrument it is implied into.
- For Implied Orders to be created, all source Order Books and destination Order Books must be in the Continuous Trading Session.
- If any of the allocated quantities of Base Orders are reduced in size, due to a size amendment or a partial execution, then the associated Implied Orders are re-evaluated and amended to reflect the new available size.
- Execution Reports are **not** published for any Implied Across Orders where the owner of the Orders cannot be determined.
- Any trade involving an Implied In Order, Implied Out Order or Implied Across Order will update the market data in the instrument, that is, Leg instrument or Synthetic instrument.
- In the case of an execution of an Implied Across Order, where there are no orders in the Leg Instruments, only the number of trades and volume will be updated for the Leg Instruments.

- Implied orders are **not** subjected to Circuit Breaker validations.

7.5.3 Allocation of Base Order Quantity

On generating Implied Orders, using Base Orders, the JSE Trading System 'allocates' the quantity of each of the Base Orders to the Implied Orders that are generated.

Multiple Implied Orders, generated using the same set of Base Orders, will have a total size equal to or less than the total visible size of the Base Orders, that is, the quantity allocation to Implied Orders will only occur so long as there is quantity available on the Base Order, which has not been allocated to another Implied Order.

7.5.4 Order Type and TIF

The *Order Type* and *Time In Force* (TIF) of all Implied Orders, generated by the JSE Trading System, will be considered 'Limit Day Orders'.

For Orders that are generated due to an implied match, the 'Time in Force' will be 'Immediate or Cancel' (IOC). Implied Orders will always be visible to the Market, but the counterparties will remain anonymous.

7.5.5 Deleting, re-evaluating and resizing of Implied Orders

Implied Orders are deleted automatically due to any of the following actions:

- Destination Order Book is Halted or Paused
- Destination Order Book moves into an Auction Session

An Implied Order is re-evaluated or resized due to any of the following scenarios:

- The Size/Price of a Base Order, that contributes to the Implied Order, is amended.
- The Size of a Base Order reduces or changes due to an execution.
- The Base Order is cancelled or expired.
- A property of the Base Order, which causes the Order to be removed from the Order Book and re-aggress, is amended.

7.5.6 Amendments/cancellations of Implied Orders

Any amendment/cancellation to an Implied Order will not have any impact on the Base Orders, given that the Base Orders are *not* Implied Orders. In an 'implied on implied' Order situation, the Base Orders, which are also Implied Orders will be re-evaluated for removal. It should be noted that the JSE Trading System does not re-evaluate all the Implied Orders based on this Order Book and only re-evaluates the Implied Order that is affected by the amendment/cancellation.

7.5.7 Special scenarios regarding Implied Order executions

Implied Orders participate in executions just as outright Orders. Certain scenarios do exist where Implied Order execution is handled differently from outright Orders.

7.5.8 Price Monitoring

Implied Order executions are not subjected to Price Bands, Execution Limits, or Circuit Breakers.

Note: Circuit Breaker actions, such as moving to a Halt or a Re-Opening Auction, if the trade breaches or potentially breaches the Circuit Breaker limits, are also not carried out.

7.5.9 Lot Size Violation

If the Leg and Synthetic instruments are set up with different lot sizes, the implied trades may result in executions that do not conform to the lot size of the instrument where the implied execution takes place. If such a disparity causes a remainder of the Order to have an invalid lot size, the remainder is rounded down to the nearest lot size. If this causes a rounding down to zero, then the Order is expired.

7.5.10 Tick Size Violation

If the Leg and Synthetic instruments have incompatible tick sizes, the implied trades may result in executions that do not conform to the tick size of the instrument where the implied execution takes place.

7.5.11 Executions taking place with the same Base Order

If two Implied Orders are to execute, and they both share the same Base Order (anywhere in the implied chain), the aggressing order will expire.

7.6 On Book Strategy Trading

Refer to the section “Types of Instruments” for detailed information on the different On-Book Strategy Trading options available in the JSE Trading System.

8 REPORTED TRADING

IMPORTANT:

All section discussed below pertain to Trading Members, as well as Clearing Members who perform reporting/trading on behalf of their clients. For additional information, refer to the section “Clearing Member structure (CMs who trade on behalf of their clients)”.

8.1 Reported Trade overview

The JSE Trading System provides the ability to conduct reported trading. This concept is also referred to as Negotiated trading or Reported trading. Reported trading is conducted through the **Post Trade Gateway**. Refer to the [Volume 03 – Post Trade Gateway document](#) for additional information.

Irrespective of the Reported Trade reporting models available, it is mandatory for a Trading Member to submit a Reported Trade related to a particular ‘type of trade’, be it a late trade, exercised option, roll trade, etc.

The JSE Trading System segregates these trade sub-types in order to identify them for the purpose of statistics and reporting, fee charges, clearing and settlement related validations, and any other post trade related transaction.

Each Reported trade is published to the Market as soon as matching has occurred, and will detail the value, volume, and trade sub-type to which the successful transaction relates.

Reported trades can have a maximum of eight decimal places in the *Price* field. Not all eight decimal places have to be used, however, the option does exist.

8.2 Reported Trade Reporting Models

The following trade reporting models are currently supported by the JSE Trading System:

- Single Party Trade Reporting Model
- Dual Party (Alleged) Trade Reporting Model

8.3 Reported Trade matching

When submitting a Reported trade to the JSE Trading System, ensure that all the fields listed below are completed. This is achieved by using the **Trade Capture Report message**.

The details below must be submitted in a Reported trade:

- Instrument ID
- Size of the trade
- Price of the trade (Indicate the price for price traded instruments and yield for yield traded instruments.)
- Trade sub-type of the trade (Refer to Appendix A – Trade SUB-Types for a list of all Trade Sub-types.)
- Trade reporting model of the trade
- Date and time the trade was agreed between the two firms
- Trade Identifier that is assigned to the trade by counterparties

The details below must also be submitted in a Reported trade, in addition details mentioned above. These fields are not used to match a Buy and Sell side of a **Trade Capture Report message**.

- Firm
- Trader Group
- Trader ID
- Number of counterparty party identifiers included on the message (includes the following)
- Counterparty Firm ID
- Counterparty Trader Group
- Side of the submitting Firm, that is, buy or sell
- Side of the counterparty Firm, that is, sell or buy
- Trade report action, that is, Submit, Accept, Decline, Cancel, Notify
- Transaction identifier, that is, New submission, Withdrawal, Response

8.3.1 FX – Currencies Market Reported Trade matching

The JSE Trading System will match the following for the Futures and Options instruments defined in the JSE Trading System as FX, that is, belonging to the Currencies Market.

- Price or Volatility (LastPX (31) – Dependent on whether instruments are configured to trade on price or volatility. Value for price/yield or the volatility will be submitted via Tag LastPX (31).

The JSE Trading System will match the following if the Instrument is a Naked Option.

- Futures Price (810) – the underlying futures price of the Option being traded.

8.3.2 EDM – Equity Derivatives Reported Trade matching

The JSE Trading System will match the following for the Futures and Options instruments defined in the JSE Trading System as Equity Derivatives.

- Price or Volatility (LastPX (31) – Dependent on whether instruments are configured to trade on price or volatility. Value for price/yield or the volatility will be submitted via Tag LastPX (31).

The JSE Trading System will match the following if the Instrument is a Naked Option.

- Futures Price (810) – the underlying futures price of the Option being traded.

8.3.3 Backdated Reported trade submissions

The Derivative Markets will not allow any backdated Reported trade submissions to be captured. All Reported trades can only be booked on the same trading day.

8.3.4 Breached Price Bands

The JSE Trading System will notify all Firms involved in a particular Trade Reporting Process where a Reported trade occurs at a price that is 'far away' from the Market Reference Price.

This is indicated in the **Trade Capture Report message** by the *PBBreached* field, where a '0' (zero) indicates 'No Breach', and a '1' indicates 'Breach'. As such, this field indicates whether the trade has breached the assigned price band. Refer to the [Volume 03 – Post Trade Gateway document](#) for additional information.

8.4 Trading Strategies using Reported trades

Firms reporting Strategy trades, using the Trade Reporting functionality, are able to specify one of the following Strategy Types in the **Trade Capture Report message**:

- Delta Option
- Inverse Calendar Spread
- Splits
- Forward Forwards

A Firm can link numerous Reported trades, that constitute any of the above Strategies, via the *Strategy Link ID (27100)* field in the **Trade Capture Report message**. When this field is populated, it connects all the Reported trades together into a given Strategy.

9 APPENDIX A – TRADE SUB-TYPES

One of the following Trade Sub-types must be used to clearly identify the purpose of the Reported Trade, when it is submitted.

TrdSubType (829) Value	Trade Name	Trade Type	Dealing Capacity	Reporting Model	Market	Published to Market Y/N	Include In Cumulative Statistics for Current Trading Day
1014	Automated Trade	AT	A-A, A-P, P-A, P-P	N/A	JSE_EDM JSE_FX	Y	Y
1015	Uncrossing Trade	UT	A-A, A-P, P-A, P-P	N/A	JSE_EDM JSE_FX	Y	Y
4001	Negotiated Trade	NT	A-A, A-P, P-A, P-P	Both	JSE_EDM JSE_FX	Y	Y
4002	Tap Issue	TI	A-A, A-P, P-A, P-P	Both	JSE_EDM JSE_FX	Y	Y
4003	Primary Trade	PT	A-A, A-P, P-A, P-P	Both	JSE_EDM JSE_FX	Y	Y
4004	Structured Trade	ST	A-A, A-P, P-A, P-P	Both	JSE_EDM JSE_FX	Y	Y
4005	Option Exercised	BX	A-A, A-P, P-A, P-P	Both	JSE_EDM JSE_FX	Y	Y
4006	Book Over	BV	A-A, A-P, P-A, P-P	Both	JSE_EDM JSE_FX	Y	Y
4007	Repo	RO	A-A, A-P, P-A, P-P	Both	JSE_FX	Y	Y
4008	Reverse Repo	RR	A-A, A-P, P-A, P-P	Both	JSE_FX	Y	Y
4009	Give-Up - Bonds and Der	GI	A-A, A-P, P-A, P-P	Both	JSE_EDM JSE_FX	Y	Y
4010	Exchange for Physical	EP	A-A, A-P, P-A, P-P	Both	JSE_EDM JSE_FX	Y	Y
4011	Exchange for Risk	ER	A-A, A-P, P-A, P-P	Both	JSE_EDM JSE_FX	Y	Y
4012	Professional Client	PO	A-A, A-P, P-A, P-P	Both	JSE_EDM JSE_FX	Y	Y
4013	Delta trades	DT	A-A, A-P, P-A, P-P	Both	JSE_EDM JSE_FX	Y	Y
4014	Late Trades	LD	A-A, A-P, P-A, P-P	Both	JSE_EDM JSE_FX	Y	Y
4015	Roll Trades	RT	A-A, A-P, P-A, P-P	Both	JSE_EDM JSE_FX	Y	Y
4016	Structured Option	Stop Order	A-A, A-P, P-A, P-P	Both	JSE_EDM JSE_FX	Y	Y

TrdSubType (829) Value	Trade Name	Trade Type	Dealing Capacity	Reporting Model	Market	Published to Market Y/N	Include In Cumulative Statistics for Current Trading Day
4017	Net Offs	NO	A-A, A-P, P-A, P-P	Both	JSE_EDM JSE_FX	Y	Y
4018	Non Standard Strategy Trade	NS	A-A, A-P, P-A, P-P	Both	JSE_EDM JSE_FX	Y	Y
4019	CFD Reported Trade	CD	A-A, A-P, P-A, P-P	Both	JSE_EDM JSE_FX	Y	Y
4020	Strategy Trade	SR	A-A, A-P, P-A, P-P	Both	JSE_EDM JSE_FX	Y	Y
4021	Bond Spread Trade	BS	A-A, A-P, P-A, P-P	Both	JSE_FX	Y	Y
4022	Trade Bust off book trade types	TA	A-A, A-P, P-A, P-P	Both	JSE_EDM JSE_FX	Y	Y
4023	Price Adjust	PA	A-A, A-P, P-A, P-P	Both	JSE_EDM JSE_FX	Y	Y
4024	Reported Trade	RP	A-A, A-P, P-A, P-P	Both	JSE_EDM JSE_FX	Y	Y

10 APPENDIX B - IMPLIED ORDER EXAMPLES

10.1 Example 1: Implied orders can be generated only by the quantity at the best price point in the Spread Order Book

Order book (ZGH8)	Order book (ZGZ8)
98.30 5 TR1	TR1 5 98.31
Order book ((ZGH8_ZGZ8))	
TR1 5 0.01	

Trader TR1 bid on ZGH8_ZGZ8 (Gold Future March 08 / December 08)

This would correspond to a simultaneous buy of 5 Contracts of ZGZ8 @ 98.31 and a sell of 5 Contracts of ZGH8@ 98.30 at a price difference of 0.01.

10.2 Example 2: Generating an Implied Out Order anchoring off the quantity at the best visible offer price

Implied generation parameter set up

- Generate Implied Out parameter is enabled for the Normal Order Book of ZGH8_ZGZ8.
- Act as Implied Base is enabled for the Normal Order Books of both ZGH8 and ZGH8_ZGZ8.
- All other implied generation parameters of the above instruments are disabled.

Trader TR1bid on ZGH8_ZGZ8 for 5 @ 0.01

A buy order resides in the ZGH8 Order Book for 5 contracts @ 98.30, which could be matched with sell ZGH8 Leg of the ZGH8_ZGZ8 fixing the price of the potential execution at 98.30.

The JSE Trading System generates an implied out buy order in the ZGZ8 Order Book to buy 5 contracts @ 98.31.

Order book (ZGH8)	Order book (ZGZ8)
TR2 5 98.30	TR1 5 98.31
Order book ((ZGH8_ZGZ8))	
TR1 5 0.01	

10.3 Example 3: Execution of an Implied Order

Implied generation parameter set up

- Generate Implied Out parameter is enabled for the Normal Order Book of ZGH8_ZGZ8.
- Act as Implied Base is enabled for the Normal Order Books of both ZGH8 and ZGH8_ZGZ8.
- All other implied generation parameters of the above instruments are disabled.

A buy order exists in the ZGH8 Order Book for 5 @ 98.30. A buy for 5 @ 0.01 enters the ZGH8_ZGZ8 Order Book. This results in the generation of implied out order in ZGZ8.

Order book (ZGH8)	Order book (ZGZ8)
TR2 5 98.30	TR1 5 98.31

Order book ((ZGH8_ZGZ8)			
TR1	5	0.01	

Trader TR3 enters a sell order for 5 @ 98.31 for ZGZ8. This executes with the implied buy order @ 98.31. Simultaneously the JSE Trading System will also generate a sell order in the ZGH8 Order Book which matches against TR2s buy order of 5 @ 98.30. The order in the ZGH8_ZGZ8 Order Book is filled outside the ZGH8_ZGZ8 Order Book, in the individual base entity Order Books. Market data for the ZGH8 and ZGZ8 Order Books are updated.

Executions Reported

Trader TR1 Buy ZGH8_ZGZ8 @ 0.01
 Trader TR3 Sell ZGZ8 @ 98.31
 Trader TR2 Buy ZGH8 @ 98.30

Further Trader TR1 receives a breakup confirmation
 Trader TR1 Buy ZGZ8 @ 98.31
 Trader TR1 Sell ZGH8 @ 98.30

10.4 Example 4: Creation of implied buy and sell Orders against a specific Spread order

If an entering explicit order can create an Implied Order and maintain the spread of the spreads order, an Implied Order will be generated anchored off quantity at the new explicit price point.

Implied generation parameter set up

- Generate Implied Out parameter is enabled for the Normal Order Book of ZGH8_ZGZ8.
- Act as Implied Base is enabled for the Normal Order Books of both ZGH8, ZHZ8 and ZGH8_ZGZ8.
- All other implied generation parameters of the above instruments are disabled.

Initial Order Books are as follows:

Order book (ZGH8)			
TR2	5	98.30	

Order book (ZGZ8)			
TR1	5	98.31	

Order book ((ZGH8_ZGZ8)			
TR1	5	0.01	

TR3 submits a sell for 5 @ 98.32 in the ZGZ8 Order Book. This results in the creation of an implied buy order in the ZGH8 Order Book for 5 @ 98.31.

Order book (ZGH8)			
TR2	5	98.30	98.31 5 TR1

Order book (ZGZ8)			
TR1	5	98.31	98.32 5 TR3

Order book ((ZGH8_ZGZ8)			
TR1	5	0.01	

10.5 Example 5: Cumulating orders at best price in the anchoring Order Books to create an Implied Order

Implied orders will be generated for the cumulative order size at the best price point of the anchoring Order Book, provided it is less than or equal to the spread order size.

Implied generation parameter set up:

- Generate Implied Out parameter is enabled for the Normal Order Book of ZGH8_ZGZ8.
- Act as Implied Base is enabled for the Normal Order Books of both ZGH8 and ZGH8_ZGZ8.
- All other implied generation parameters of the above instruments are disabled.

Traders TR2 and TR3 have resting orders in ZGH8:

TR2 → 5 @ 98.30

TR3 → 4 @ 98.30

Trader TR1 submits a buy order for 8 @ 0.01 for the spread ZGH8_ZGZ8

Two Implied Orders are created for the cumulative size of orders in ZGH8 (Leg 2) provided the size is less than or equal to the Base Order. The Implied Orders are created allocating the quantities based on the time priority of the Base Orders.

Order book (ZGH8)			
TR2	5	98.30	
TR3	4	98.30	

Order book (ZGZ8)			
TR1	5	98.31	
TR2	3	98.31	

Order book ((ZGH8_ZGZ8))			
TR1	8	0.01	

10.6 Example 6: Implied behaviour during order amendments (both in the Spread Books and the Outright Books)

Amendments to the spread order or subsequently to an order in the anchoring Order Book results in an amendment to the Implied Order. Amendments could be for price and size.

Implied generation parameter set up

- Generate Implied Out parameter is enabled for the Normal Order Book of ZGH8_ZGZ8.
- Act as Implied Base is enabled for the Normal Order Books of both ZGH8 and ZGH8_ZGZ8.
- All other implied generation parameters of the above instruments are disabled.

The initial Order Books are as follows:

Order book (ZGH8)			
TR2	5	98.30	
TR3	4	98.30	

Order book (ZGZ8)			
TR1	5	98.31	
TR1	4	98.31	

Order book ((ZGH8_ZGZ8))			
TR1	10	0.01	

If Trader TR1 now amends order size to 8 in ZGH8_ZGZ8, resulting in expiration restatement of the second Implied Order (TR1 4 98.31) in ZGZ8 with a size of 3. Revised Order Books are as follows:

Order book (ZGH8)				Order book (ZGZ8)			
TR2	5	98.30		TR1	5	98.31	
TR3	4	98.30		TR1	3	98.31	

Order book ((ZGH8_ZGZ8))			
TR1	8	0.01	

Trader TR2 now amends his size order size to 3 in ZGH8. No loss of priority for TR2 in the ZGH8 Order Book. This is resulting in restatement of the existing Implied Orders in ZGZ8 with a size of 7. Revised Order Books are as follows:

Order book (ZGH8)				Order book (ZGZ8)			
TR2	3	98.30		TR1	3	98.31	
TR3	4	98.30		TR1	4	98.31	

Order book ((ZGH8_ZGZ8))			
TR1	8	0.01	

Amend Trader TR1s order from 8 @ 0.01 to 8 @ 0.02 in the ZGH8_ZGZ8 Order Book. This is resulting in an expiration of the existing Implied Orders in ZGZ8 and creation of new Implied Orders with a size of 7 and a price of 98.32. Revised Order Books are as follows:

Order book (ZGH8)				Order book (ZGZ8)			
TR2	3	98.30		TR1	3	98.32	
TR3	4	98.30		TR2	4	98.32	

Order book ((ZGH8_ZGZ8))			
TR1	8	0.02	

Trader TR2 amends the buy order of 3 @ 98.30 to 3 @ 98.29 in ZGH8. This results in TR2s order losing priority. The existing Implied Orders will be expired and a new Implied Order will be generated in the ZGZ8 order to 4 @ 98.32. Revised Order Books are as follows:

Order book (ZGH8)				Order book (ZGZ8)			
TR3	4	98.30		TR1	4	98.33	
TR2	3	98.29					

Order book ((ZGH8_ZGZ8))			
TR1	8	0.02	

10.7 Example 7: Implied orders are only created using the best bid and offer price points in the anchoring security Order Book

Orders with price points other than the best price point in the anchoring Order Book will not be used to generate Implied Orders.

Implied generation parameter set up

- Generate Implied Out parameter is enabled for the Normal Order Book of ZGH8_ZGZ8.
- Act as Implied Base is enabled for the Normal Order Books of both ZGH8, ZGZ8 and ZGH8_ZGZ8.
- All other implied generation parameters of the above instruments are disabled.

The initial Order Books are as follows:

Order book (ZGH8)						Order book (ZGZ8)					
TR2	5	98.29	98.30	5	TR1	TR1	5	98.30	98.31	5	TR3
Order book ((ZGH8_ZGZ8))											
TR1	5	0.01									

Two Implied Orders have been created by the JSE Trading System: One based on the sell order of 5 @ 98.31 in the ZGZ8 Order Book and the other on the buy order of 5 @ 98.29 in the ZGH8.

Trader TR4 submits a buy 5 @ 98.28 in the ZGH8 Order Book

Trader TR5 submits a sell 5 @ 98.32 in the ZGZ8 Order Book.

These orders do not result in the creation of Implied Orders. Revised Order Books are as follows:

Order book (ZGH8)					
TR2	5	98.29	98.30	5	TR1
TR4	5	98.28			

Order book (ZGZ8)					
TR1	5	98.30	98.31	5	TR3
			98.32	5	TR5

Order book ((ZGH8_ZGZ8)					
TR1	5	0.01			

10.8 Example 8: Deletion of a spread order will result in the deletion of the Implied Orders

Implied generation parameter set up

- Generate Implied Out parameter is enabled for the Normal Order Book of ZGH8_ZGZ8.
- Act as Implied Base is enabled for the Normal Order Books of both ZGH8, ZGZ8 and ZGH8_ZGZ8.
- All other implied generation parameters of the above instruments are disabled.

The initial Order Books are as follows:

Order book (ZGH8)					
TR2	5	98.29	98.30	5	TR1
TR4	5	98.28			

Order book (ZGZ8)					
TR1	5	98.30	98.31	5	TR3
			98.32	5	TR5

Order book ((ZGH8_ZGZ8))					
TR1	5	0.01			

If Trader TR1 cancels spread order of 5 @ 0.01 both Implied Orders will be expired.

Order book (ZGH8)			
TR2	5	98.29	
TR4	5	98.28	

Order book (ZGZ8)			
	98.31	5	TR3
	98.32	5	TR5

Order book ((ZGH8_ZGZ8))			

10.9 Example 9: A complete execution of a spread order in the spread Order Book results in the deletion of the Implied Orders

Implied generation parameter set up

- Generate Implied Out parameter is enabled for the Normal Order Book of ZGH8_ZGZ8.
- Act as Implied Base is enabled for the Normal Order Books of both ZGH8, ZGZ8 and ZGH8_ZGZ8.
- All other implied generation parameters of the above instruments are disabled.

The initial Order Books are as follows:

Order book (ZGH8)				
TR2	5	98.29	98.30	5 TR1
TR4	5	98.28		

Order book (ZGZ8)				
TR1	5	98.30	98.31	5 TR3
			98.32	5 TR5

Order book ((ZGH8_ZGZ8))				
TR1	5	0.01		

Trader TR6 submits a sell order in ZGH8_ZGZ8 Order Book for 5 @ 0.01 and results in an execution with Trader TR1s buy of 5 @ 0.01. Implied orders in the ZGH8 and ZGZ8 are expired. Revised Order Books are as follows:

Order book (ZGH8)			
TR2	5	98.29	
TR4	5	98.28	

Order book (ZGZ8)			
		98.31	5 TR3
		98.32	5 TR5

Order book ((ZGH8_ZGZ8))			

10.10 Example 10: A partial execution of a spread order in the spread Order Book results in the amendment of the Implied Orders

Implied generation parameter set up

- Generate Implied Out parameter is enabled for the Normal Order Book of ZGH8_ZGZ8.
- Act as Implied Base is enabled for the Normal Order Books of both ZGH8, ZGZ8 and ZGH8_ZGZ8.
- All other implied generation parameters of the above instruments are disabled.

The initial Order Books are as follows:

Order book (ZGH8)			
TR2	5	98.29	
TR4	5	98.28	

Order book (ZGZ8)			
TR1	5	98.30	
		98.31	5 TR3
		98.32	5 TR5

Order book ((ZGH8_ZGZ8))			
TR1	5	0.01	

Trader TR6 submits a sell order in ZGH8_ZGZ8 Order Book for 2 @ 0.01 and results in an execution with Trader TR1 for 2 @ 0.01. Implied orders in the ZGH8 and ZGZ8 are restated as 3 @ 98.30 and 3 @ 98.30 respectively. Revised Order Books are as follows:

Order book (ZGH8)			
TR2	5	98.29	
TR4	5	98.28	

Order book (ZGZ8)			
TR1	3	98.30	
		98.31	5 TR3
		98.32	5 TR5

Order book ((ZGH8_ZGZ8))			
TR1	3	0.01	

10.11 Example 11: All spread orders at the best price point will result in Implied Orders if sufficient quantity exists in the Leg Order Books.

Implied generation parameter set up

- Generate Implied Out parameter is enabled for the Normal Order Book of ZGH8_ZGZ8.
- Act as Implied Base is enabled for the Normal Order Books of both ZGH8, ZGZ8 and ZGH8_ZGZ8.
- All other implied generation parameters of the above instruments are disabled.

The initial Order Books are as follows:

Order book (ZGH8)				
TR2	6	98.29	98.30	5 TR1
TR4	5	98.28		

Order book (ZGZ8)				
TR1	5	98.30	98.31	6 TR3
			98.32	5 TR5

Order book ((ZGH8_ZGZ8))				
TR1	5	0.01		

Trader TR6 submits a buy order for the spread Order Book for 5 @ 0.01 which rests below Trader TR1s order in the Order Book.

The JSE Trading System attempts to create Implied Orders for the new spread order, using the anchoring security Order Books. Revised Order Books are follows:

Order book (ZGH8)					
TR2	6	98.29	98.30	5	TR1
TR4	5	98.28	98.30	1	TR6

Order book (ZGZ8)					
TR1	5	98.30	98.31	6	TR3
TR6	1	98.30	98.32	5	TR5

Order book ((ZGH8_ZGZ8))					
TR1	5	0.01			
TR6	5	0.01			

Note that Trader TR2s and Trader TR3s orders have only 1 remaining as the rest has been used up for creation of Implied Orders for Trader TR1s spread order of 5 @ 0.01.

The JSE Trading System will use the 1 remaining at the best price in the ZGH8 Order Book creating a buy Implied Order in the ZGZ8 Order Book for 1 @ 98.30 (98.29+ 0.01). Similarly the JSE Trading System will look into the ZGZ8 Order Book sell side and will use the remaining 1 @ 98.31 to create a sell Implied Order in the ZGH8 Order Book for 1 @ 98.30 (98.31-0.01).

The JSE Trading System will not use Trader TR4s order @ 98.28 or Trader TR5s order @ 98.32 to create Implied Orders in the respective Order Books as they are not at the best price point.

10.12 Example 12: Amendments to Implied Order due to a resultant loss of priority of a spread order

Implied generation parameter set up

- Generate Implied Out parameter is enabled for the Normal Order Book of ZGH8_ZGZ8.
- Act as Implied Base is enabled for the Normal Order Books of both ZGH8, ZGZ8 and ZGH8_ZGZ8.
- All other implied generation parameters of the above instruments are disabled.

The initial Order Books are as follows:

Order book (ZGH8)						Order book (ZGZ8)					
TR2	6	98.29	98.30	5	TR1	TR1	5	98.30	98.31	6	TR3
TR4	5	98.28	98.30	1	TR6	TR6	1	98.30	98.32	5	TR5

Order book ((ZGH8_ZGZ8))			
TR1	5	0.01	
TR6	5	0.01	

Trader TR1 is now increased his existing order quantity to 8 @ 0.01 in the spread Order Book. This would result in a loss of priority for TR1's order. This leads to expiration of TR1's Implied Orders and a restatement of TR6's Implied Orders in the Order Books.

Trader TR6's Implied Orders are as follows;

ZGZ8 – Buy 5 @ 98.30

ZGH8 – Sell 5 @ 98.30

Trader TR1's Implied Orders are as follows;

ZGZ8 – Buy 1 @ 98.30 (Using Trader TR2 Buy for 6 @ 98.29 ZGH8)

ZGH8 – Sell 1 @ 98.30 (Using Trader TR3 Sell for 6 @ 98.31 ZGZ8)

Revised Order Books are as follows:

Order book (ZGH8)						Order book (ZGZ8)					
TR2	6	98.29	98.30	5	TR6	TR6	5	98.30	98.31	6	TR3
TR4	5	98.28	98.30	1	TR1	TR1	1	98.30	98.32	5	TR5

Order book ((ZGH8_ZGZ8))			
TR6	5	0.01	
TR1	8	0.01	

10.13 Example 13: An increase in size at the best price point of the anchoring Order Book will result in an increase of size of the Implied Order

Implied generation parameter set up

- Generate Implied Out parameter is enabled for the Normal Order Book of ZGH8_ZGZ8.
- Act as Implied Base is enabled for the Normal Order Books both ZGH8, ZGZ8 and ZGH8_ZGZ8.
- All other implied generation parameters of the above instruments are disabled.

Initial Order Book is as follows (continued from Example 12):

Order book (ZGH8)						Order book (ZGZ8)					
TR2	6	98.29	98.30	5	TR6	TR6	5	98.30	98.31	6	TR3
TR4	5	98.28	98.30	1	TR1	TR1	1	98.30	98.32	5	TR5

Order book ((ZGH8_ZGZ8))					
TR6	5	0.01			
TR1	8	0.01			

Trader TR7 submits a new buy order to the ZGH8 Order Book for 5 @ 98.29

Since the JSE Trading System has not created all the possible Implied Orders for Trader TR1s spread order for 8 @ 0.01, A new Implied Order will be generated with a quantity of 5.

Revised Order Books are as follows:

Order book (ZGH8)						Order book (ZGZ8)					
TR2	6	98.29	98.30	5	TR6	TR6	5	98.30	98.31	6	TR3
TR7	5	98.29	98.30	1	TR1	TR1	1	98.30	98.32	5	TR5
TR4	5	98.28				TR1	5	98.30			

Order book ((ZGH8_ZGZ8))					
TR6	5	0.01			
TR1	8	0.01			

10.14 Example 14: Generating an implied in order for the strategy anchoring the best visible orders in the Leg Instruments

Implied generation parameter set up

- Generate Implied In parameter is enabled for the Normal Order Book of ZGH8_ZGZ8.
- Act as Implied Base is enabled for the Normal Order Books of both ZGH8, ZGH8 and ZGH8_ZGZ8.
- All other implied generation parameters of the above instruments are disabled.

The initial Order Books are as follows:

Order book (ZGH8)						Order book (ZGZ8)					
			98.30	5	TR1						

Order book ((ZGH8_ZGZ8))					

A Sell order resides in the ZGH8 Order Book for 5 contracts @ 98.30. Trader TR2 submits a Buy order to the ZGZ8 instrument for 10 contracts at @ 98.50.

The JSE Trading System generates an implied in buy order in the ZGH8_ZGZ8 Order Book to buy 5 contracts @ 0.20, anchoring the visible best priced buy and sell orders in the Leg Instruments. The updated pictures of the Order Books are as follows:

Order book (ZGH8)						Order book (ZGZ8)					
-------------------	--	--	--	--	--	-------------------	--	--	--	--	--

	98.30	5	TR1		TR2	10	98.50	
--	-------	---	-----	--	-----	----	-------	--

Order book ((ZGH8_ZGZ8)				
SYSTEM	5	0.20		

10.15 Example 15: Generating implied across orders from spread to spread

Implied generation parameter set up

- The following entry is available in the Implied Across Table which defines the rules for implied across order generation for the given instruments.

Tabular Entry	Base 1	Base 2	Destination
1	ZGH8_ZGL8	ZGL8_ZGZ8	ZGH8_ZGZ8

- Generate Implied Across parameter is enabled for the Normal Order Book of ZGH8_ZGZ8.
- Act as Implied Base is enabled for the Normal Order Books of both ZGH8_ZGL8, ZGL8_ZGZ8 and ZGH8_ZGZ8.
- All other implied generation parameters of the above instruments are disabled.

Initial Order Books are as follows:

Order book (ZGH8)				Order book (ZGZ8)			
TR1	5	0.30		TR2	10	0.20	

Order book ((ZGH8_ZGZ8)				
SYSTEM	5	0.50		

Trader T2 submits a BUY orders to the ZGL8_ZGZ8 for 10 contracts @ 0.20. The JSE Trading System will generate an implied across order for the instrument ZGH8_ZGZ8 for 5 contracts with a price of 0.50, anchoring the best visible orders available in the spread instruments, ZGH8_ZGL8 and ZGL8_ZGZ8.

10.16 Example 16: Generating implied on Implied Orders

Implied generation parameter set up

- Generate Implied Out parameter is enabled for the Normal Order Books of ZGH8_ZGL8 and ZGL8_ZGZ8.
- Implied on Implied parameter is enabled for the Normal Order Book of ZGL8.
- Act as Implied Base is enabled for the Normal Order Books of ZGH8, ZGL8, ZGH8_ZGL8 and ZGL8_ZGZ8.
- All other implied generation parameters of the above instruments are disabled.

Initial Order Books are as follows:

Order book (ZGH8)				Order Book (ZGH8_ZGL8)			
TR1	5	98.30		TR2	6	0.02	

Order Book (ZGL8)			
TR2	5	98.32	

Order Book (ZGZ8)			

Order Book (ZGL8_ZGZ8)			

Trader TR3 submits a BUY order to the ZGL8_ZGZ8 for 4 contracts @0.01. The JSE Trading System will generate an implied out buy order in the ZGZ8 Order Book to buy 4 contracts @98.33, anchoring the Implied Order in ZGL8 and the strategy order in ZGL8_ZGZ8. The revised Order Books are as follows:

Order book (ZGH8)			
TR1	5	98.30	

Order Book (ZGL8)			
TR2	5	98.32	

Order Book (ZGZ8)			
TR3	4	98.33	

Order Book (ZGH8_ZGL8)			
TR2	6	0.02	

Order Book (ZGL8_ZGZ8)			
TR3	4	0.01	

10.17 Example 17: Generating Implied Across Orders on implied from spread to spread

The following entry is available in the Implied Across Table which defines the rules for Implied Across Order generation for the given instruments.

Tabular Entry	Base 1	Base 2	Destination
1	ZGH8_ZGL8	ZGL8_ZGZ8	ZGH8_ZGZ8

Implied generation parameter set up

- Generate Implied Across parameter is enabled for the Normal Order Book of ZGH8_ZGZ8.
- Generate Implied In parameter is enabled for the Normal Order Book of ZGH8_ZGL8
- Implied on Implied parameter is enabled for the Normal Order Book of ZGH8_ZGL8.
- Act as Implied Base is enabled for ZGH8, ZGL8, ZGH8_ZGL8 and ZGL8_ZGZ8.
- All other implied generation parameters of the above instruments are disabled.

The initial Order Books as are follows:

The JSE Trading System has generated an implied in order on the ZGH8_ZGL8 Order Book, based on the visible best priced orders in the ZGH8 and ZGL8 instruments.

Order book (ZGH8)			
	98.30	5	TR1

Order book (ZGL8)			
TR2	5	98.50	

Order book ((ZGZ8)			

Order book (ZGH8_ZGL8)			
------------------------	--	--	--

Order book (ZGL8_ZGZ8)			
------------------------	--	--	--

SYSTEM	5	0.20			
--------	---	------	--	--	--

Order book ((ZGH8_ZGZ8)	

Trader TR3 submits a BUY orders to the ZGL8_ZGZ8 for 10 contracts @ 0.20. The JSE Trading System will generate an implied across order for the instrument ZGH8_ZGZ8 for 5 contracts with a price of 0.40, anchoring the best visible orders available in the spread instruments, ZGH8_ZGL8 and ZGL8_ZGZ8. The revised Order Books are as follows:

Order book (ZGH8)	
	98.30 5 TR1

Order book (ZGL8)	
TR2	5 98.50

Order book ((ZGZ8)	

Order book (ZGH8_ZGL8)	
SYSTEM	5 0.20

Order book (ZGL8_ZGZ8)	
TR3	10 0.20

Order book ((ZGH8_ZGZ8)	
SYSTEM	5 0.40

10.18 Example 18: Creation of Implied Out Orders in an Inverse Order Book

The instrument is configured to trade on yield and hence the Order Book will be inversed.

Implied generation parameter set up

- Generate Implied Out parameter is enabled for the Normal Order Book of ZGH8_ZGZ8.
- Act as Implied Base is enabled for the Normal Order Books of both ZGH8, ZGZ8 and ZGH8_ZGZ8.
- All other implied generation parameters of the above instruments are disabled.

Initial Order Books are as follows:

Order book (ZGH8)	
TR1	5 0.70
TR3	5 0.80

Order book (ZGZ8)	
TR2	5 0.61

Order book ((ZGH8_ZGZ8)	

TR4 submits a buy for 5 @ 0.01 in the ZGH8_ZGZ8 Order Book. This result in the creation of an Implied Out buy order in the ZGZ8 Order Book for 5 @ 0.71. The Order Book will be as follows:

Order book (ZGH8)	
TR1	5 0.70

Order book (ZGZ8)	
TR2	5 0.61

TR3	5	0.80		TR4	5	0.71	
-----	---	------	--	-----	---	------	--

Order book ((ZGH8_ZGZ8)			
TR4	5	0.01	

11 APPENDIX C - EXAMPLES OF STOP ORDERS AND STOP LIMIT ORDERS

11.1 Stop Order example

Step 01:

The Order Book contains three Passive Orders on the Sell side. There is also an unelected Buy Stop Order (Order 10), with a Stop Price of 90 in the Order Book.

BUY			SELL		
Order ID	Size	Price	Order ID	Size	Price
			12	90	1000
			13	92	2000
10	1000		14	94	1000

Step 02:

Incoming Buy Order 2000 @93 aggresses the Order Book.

BUY			SELL		
Order ID	Quantity	Price	Order ID	Quantity	Price
11	2000	93	12	90	1000
			13	92	2000
10	1000		14	94	1000

Step 03:

The incoming aggressing Order 2000 @93 will be sweeping multiple price points (90 and 92) in the Order Book and once it completes its execution, the Buy Stop Order with a Stop Price of 90 will get elected to the Order Book. The following executions will occur:

1000@90 (Order 11 and 12)

1000@92 (Order 11 and 13)

Step 04:

Post completion of the execution of the Aggressing Order, the elected Buy Stop Order will get executed against the remaining quantity of the partially filled Order on the contra side, resulting in the following trade:

1000@92 (Order 10 and 13)

11.2 Stop Limit Order example

Step 01:

There is one LO on either side of the Book and one Stop Limit Order in an unelected state. The Stop Price for the Order is 105 and the Limit Price is 106.

BUY					SELL				
Order ID	Type	Stop Price	Size	Price	Price	Size	Stop Price	Type	Order ID
1	LO		1000	104	107	1000		LO	2
					106	12000	105	SL	

Step 02:

Orders 3, 4 and 5 enter the Order Book and the Stop Order is then elected. Trades occur between order 3 and 5:

15000 @ 105

BUY					SELL				
Order ID	Type	Stop Price	Size	Price	Price	Size	Stop Price	Type	Order ID
4	MO		12000	106	106	12000	105	SL	6
3	LO		15000	105	105	15000	105	SL	5
1	LO		1000	104	107	1000			2

Step 03:

The Stop Limit Order is then elected and executes with Order 4:

12000 @106