



Integrated Trading & Clearing (ITaC) Trading Conceptual Training

8 November 2017

Session objectives



In preparation of the JSE ITaC project go-live, the JSE is conducting conceptual training for all impacted Trading and Clearing Member staff and other stakeholders that have had limited exposure to the project thus far or who have not been part of the various ITaC engagements

The primary objectives of this session are:

- I. Provide an overview of the drivers and benefits of the ITaC project
- II. Explain the key changes to the existing derivative trading process
- III. Describe the new services and functionality that will be introduced with ITaC
- IV. Provide a view of the remaining activities in the lead-up to go-live (Q1 2018)

ITaC programme overview



- The JSE currently provides trading, clearing and settlement services for:
 - Equity derivatives (EDM)
 - Currency derivatives (FXM)
 - Interest Rate derivatives (IRD)
 - Commodity derivatives (CMD)

- ITaC is a **multi-year programme** to:
 - migrate all Derivative and Bond markets to the MIT trading platform
 - migrate all markets to a new Cinnober Real-time Clearing (RTC) platform

- Phased delivery approach will be followed:
 - Phase 1: Equity derivative and currency derivatives Q1 2018
 - Phase 2: Planning commenced

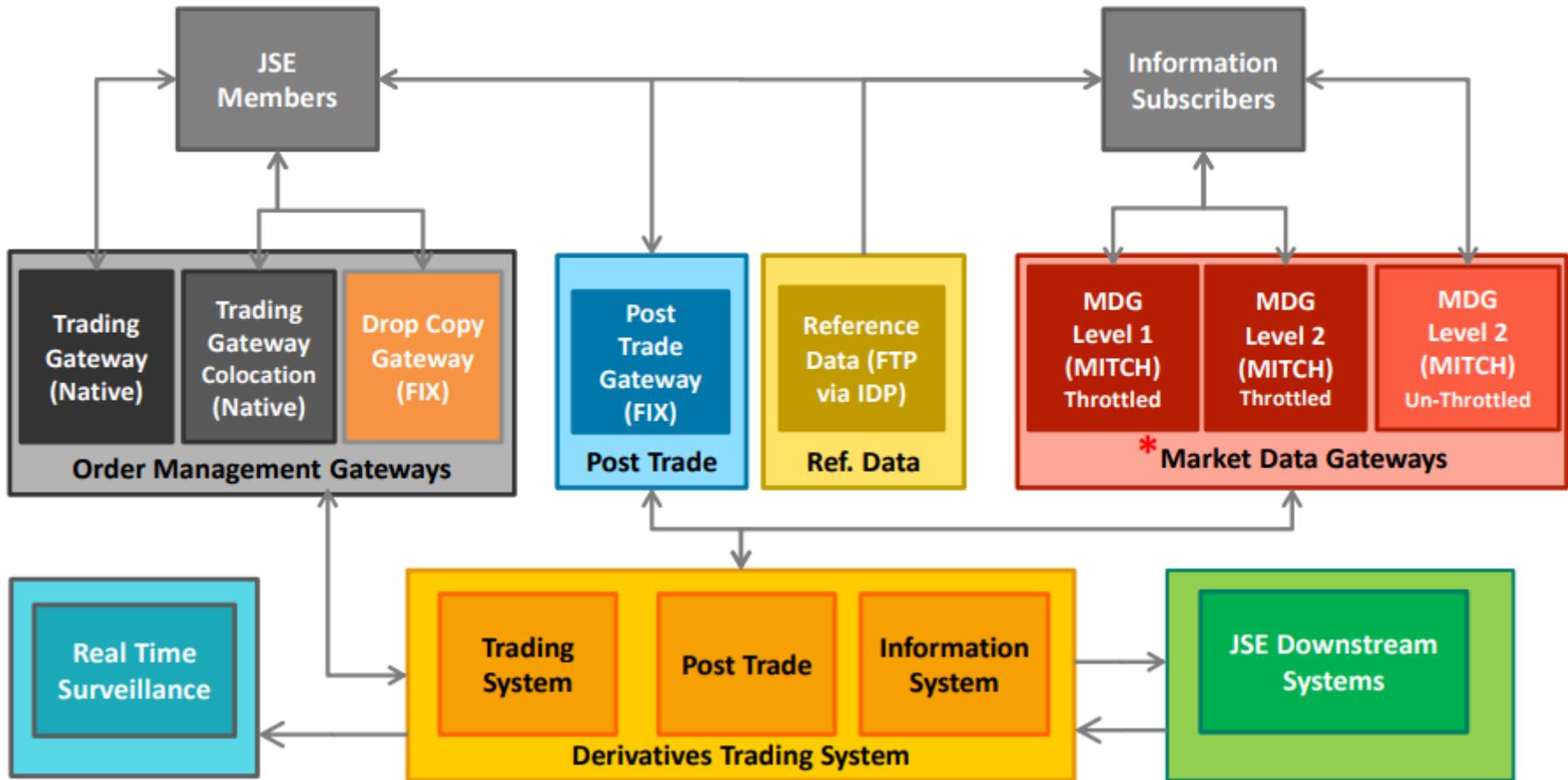
Connecting to the JSE

High-level architectural design



JSE

Trading Market Layout



- * • There will be a set of Market Data Gateways for Equity Derivatives and a set of Gateways for Currency Derivatives
- Additional market data gateways will be introduced at a later stage for Commodity Derivatives.
- Interest Rate market data will be disseminated via the same gateways as Currency Derivatives

INTEGRATE
ACCELERATE
GROW

Gateways Explained

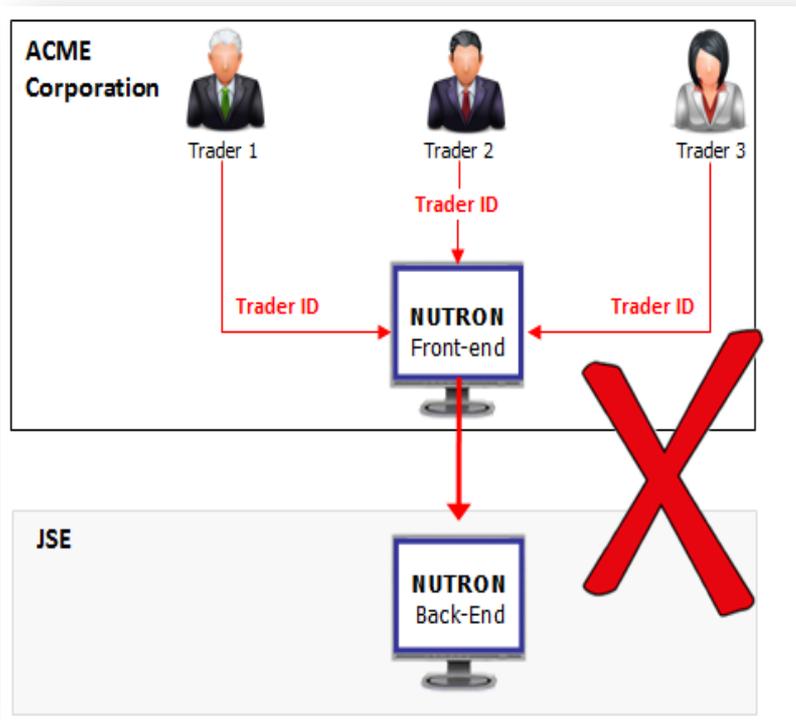


<u>Trading Gateways</u>	The Trading Gateways allow for On-Book submission and management of orders, as well as the creation of instruments by Trading Member Firms.
<u>Post Trade Gateway</u>	The Post Trade Gateway is used to publish confirmed On-Book trades. It is also used for trade reporting and trade management.
<u>Drop Copy Gateway</u>	The Drop Copy Gateway offers real-time copy functionality of all order activities.
<u>MITCH Market Data Gateways</u>	The MITCH Market Data Gateways provide all session, order, trade and statistical information.
<u>Reference Data Service</u>	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.

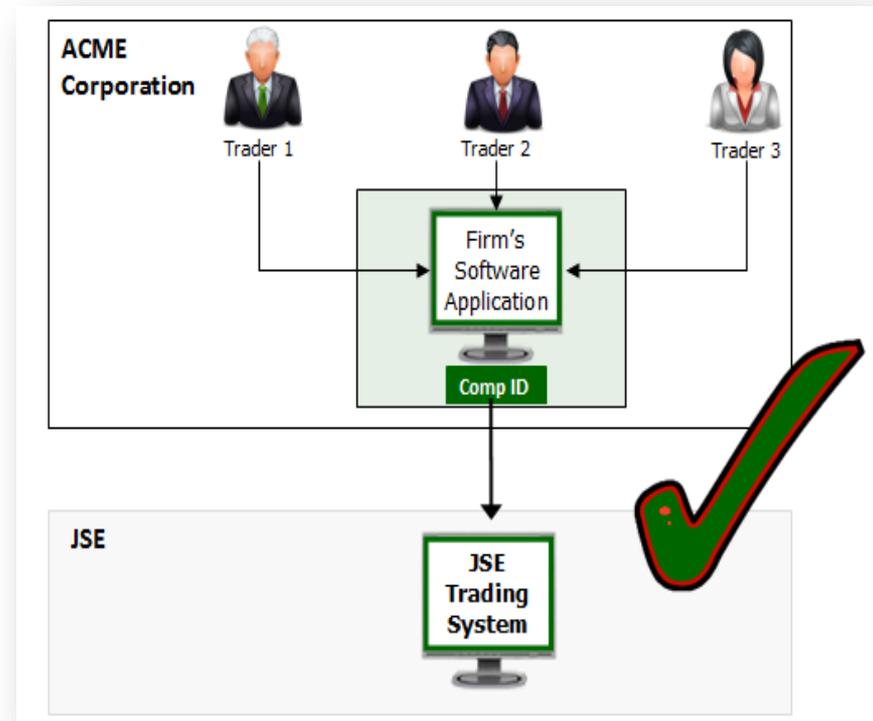
Connecting to the JSE Trading System



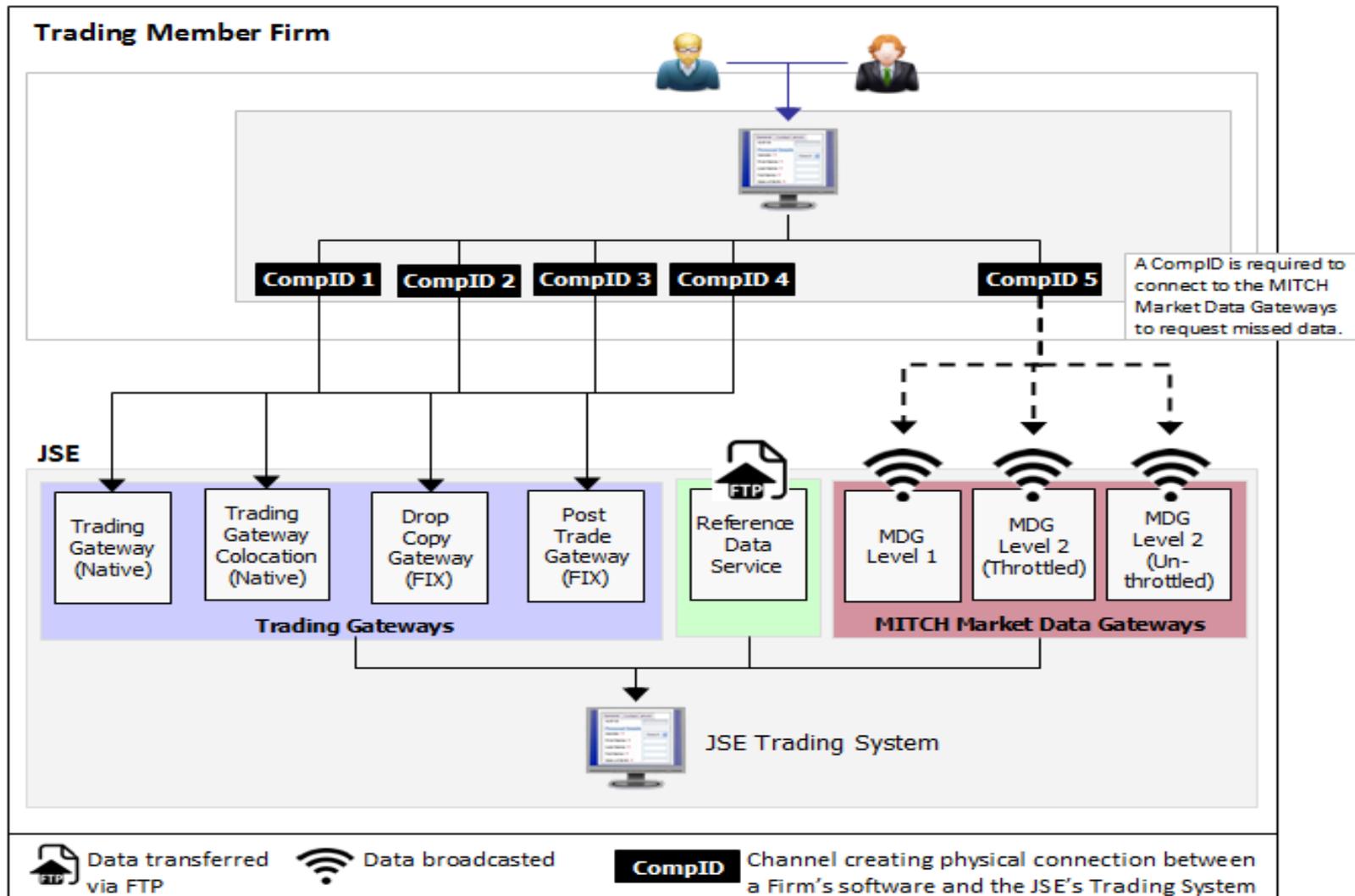
Current



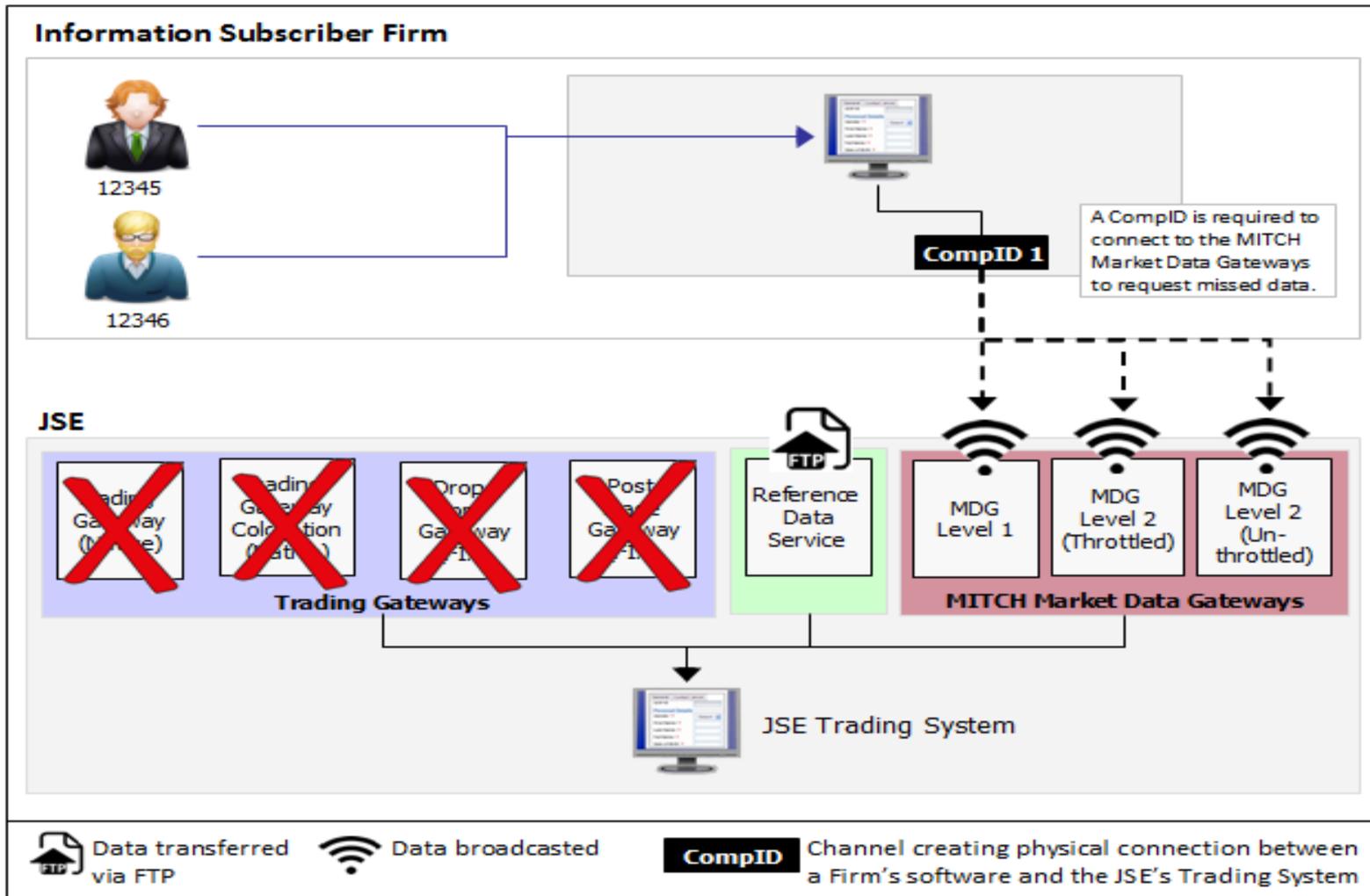
New



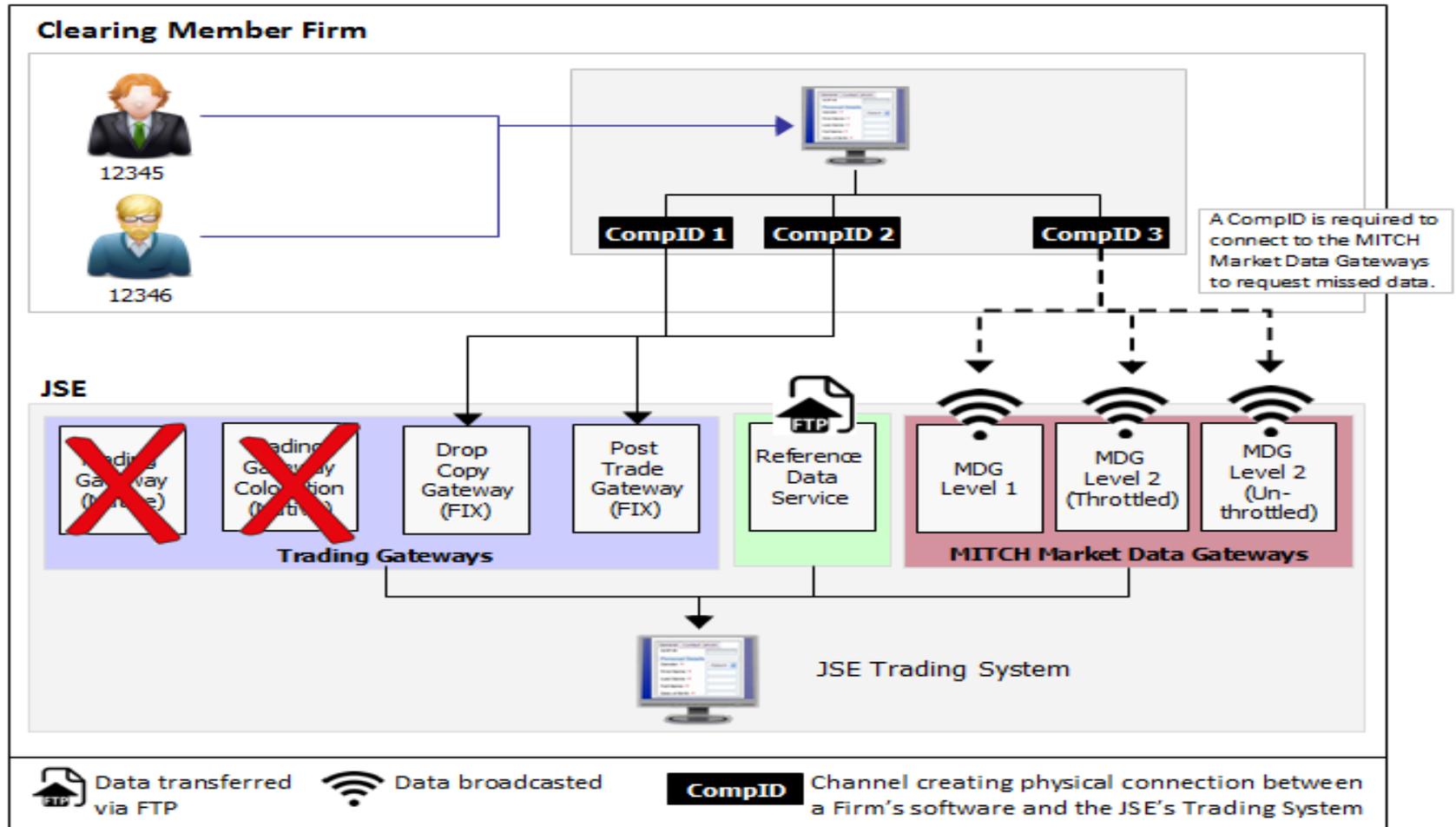
Connecting to the JSE Trading System



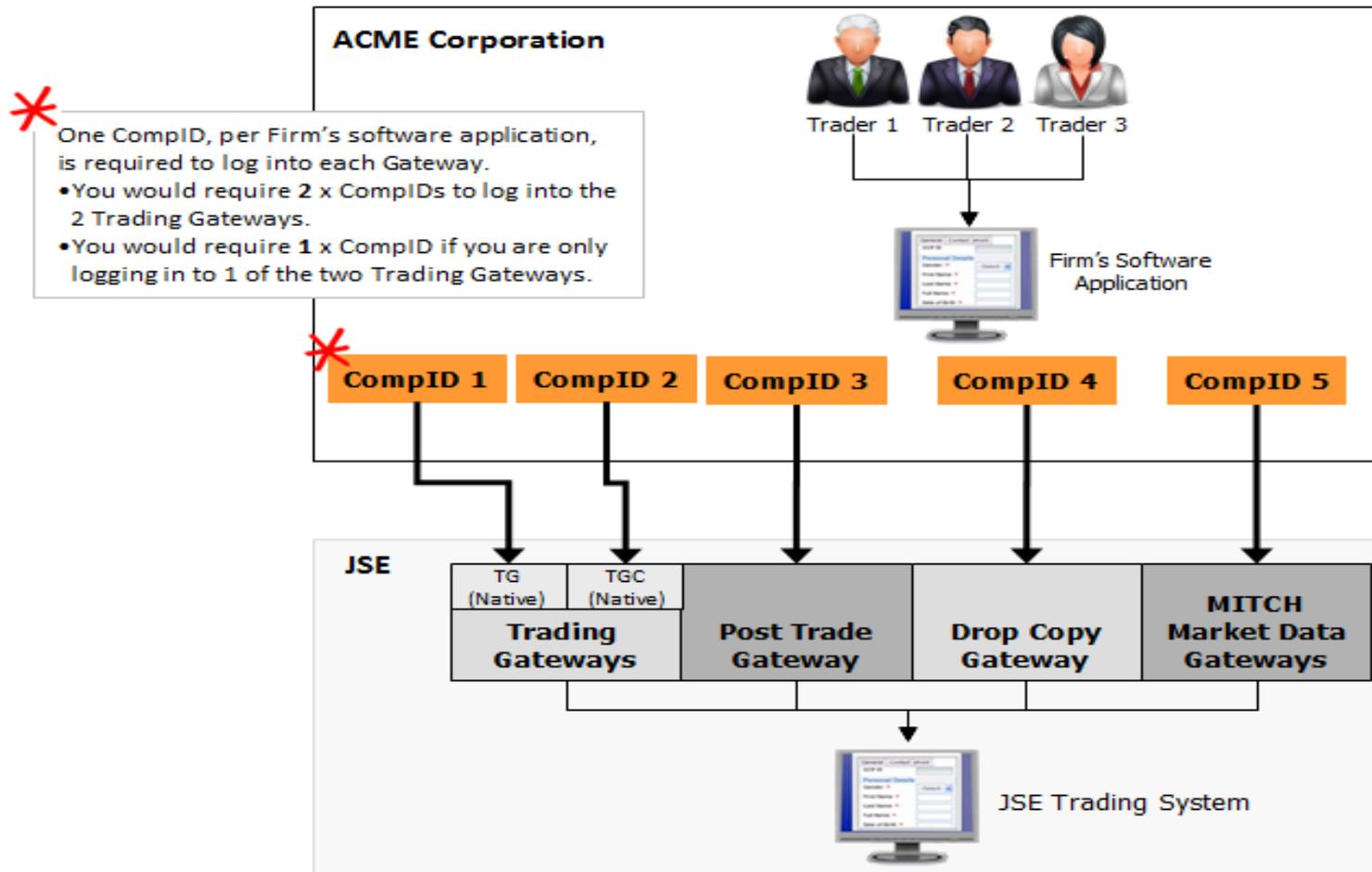
Connecting to the JSE Trading System



Connecting to the JSE Trading System



Connecting to the JSE Trading System



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.

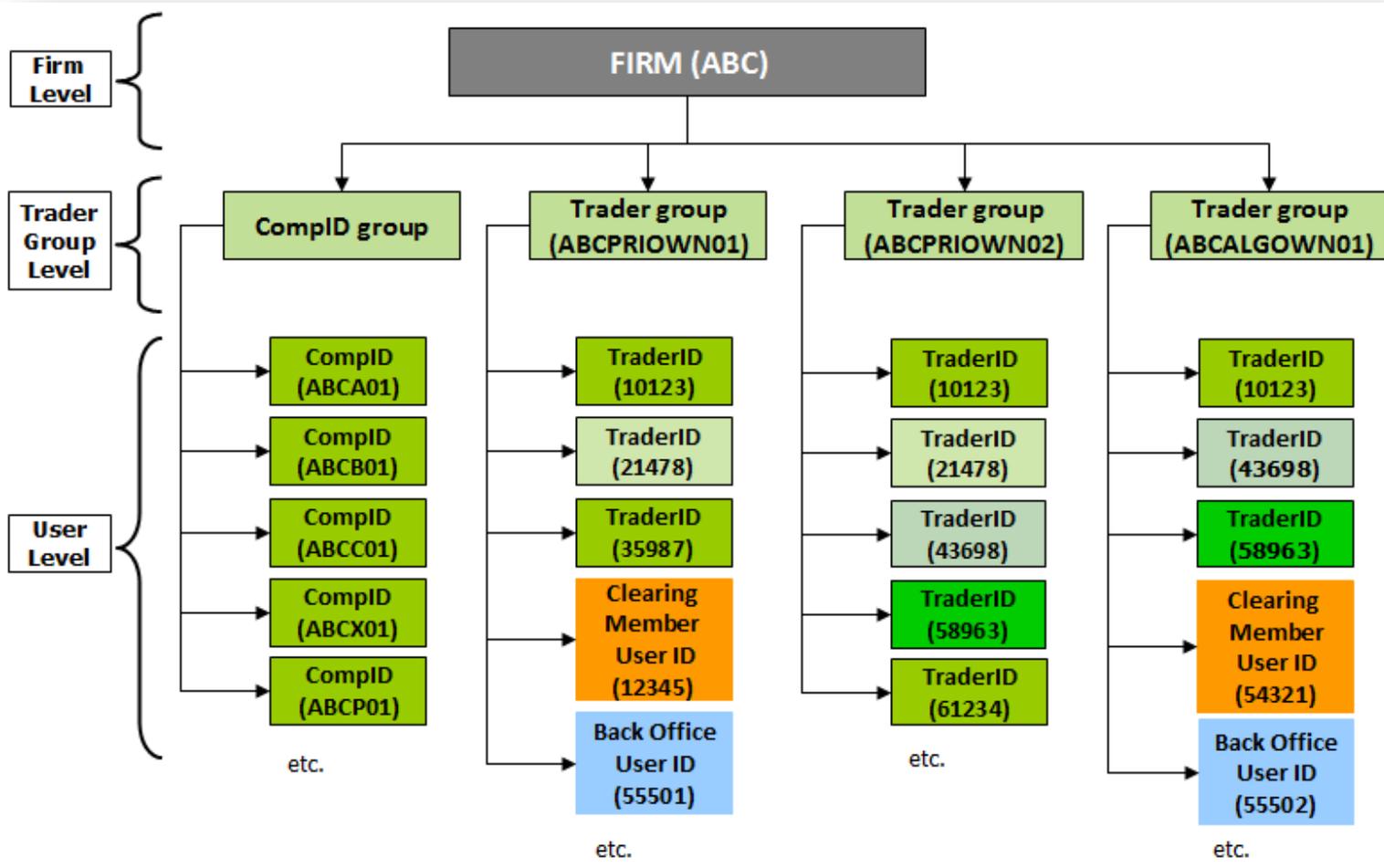
Trader IDs are not used to connect to the JSE Trading System

JSE Market Participants Structure

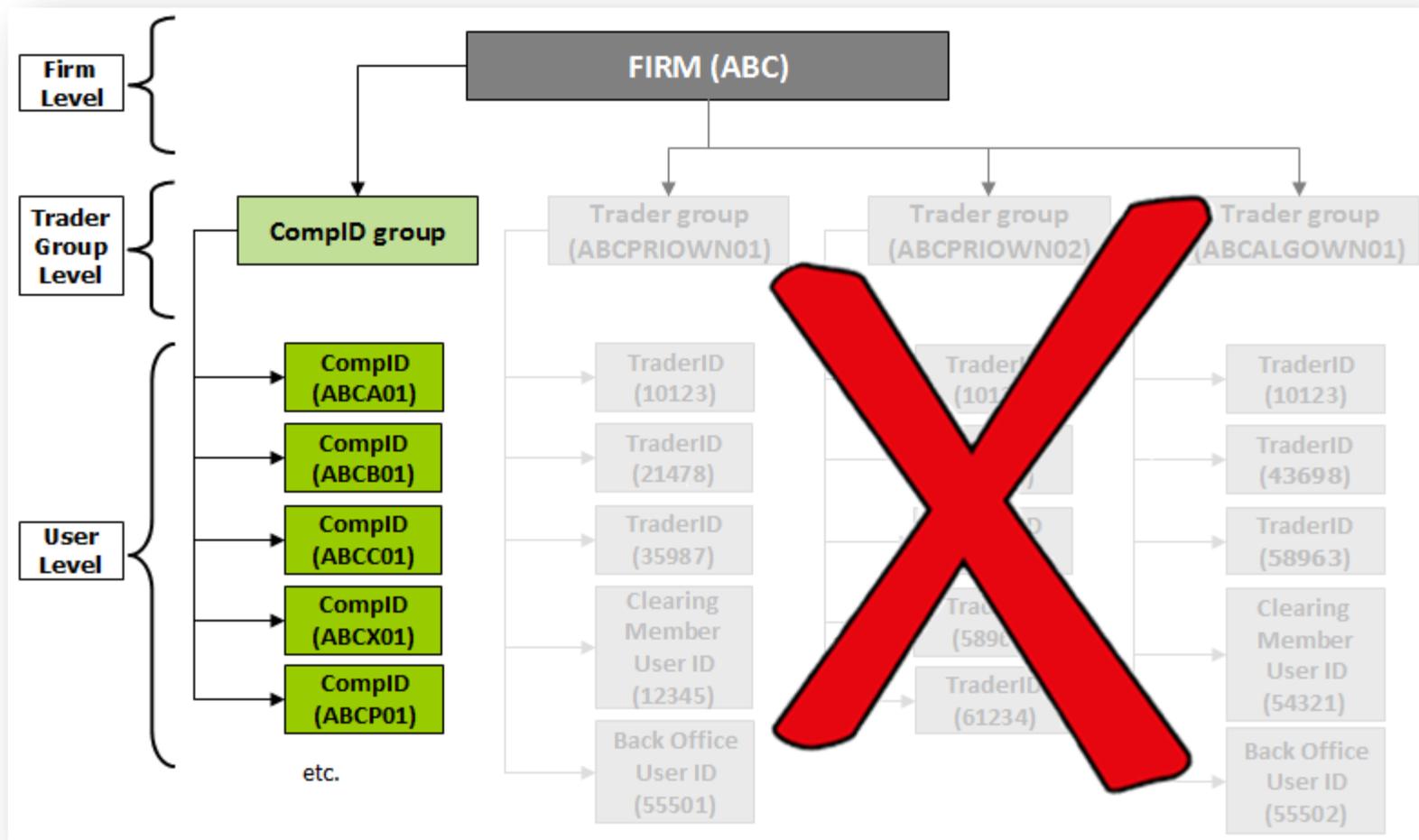
Firm Layout



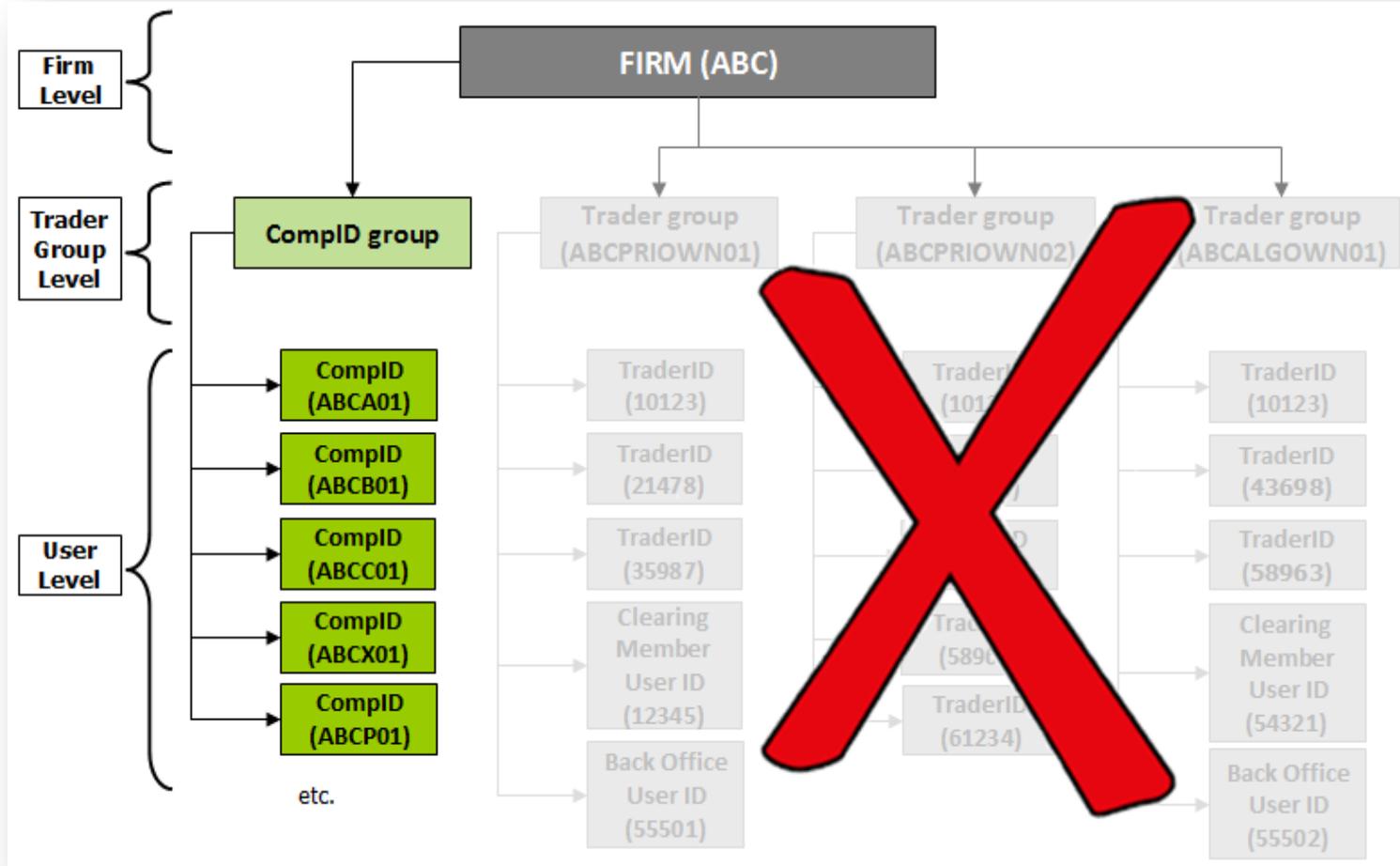
Trading Member Structure



Information Subscriber Structure

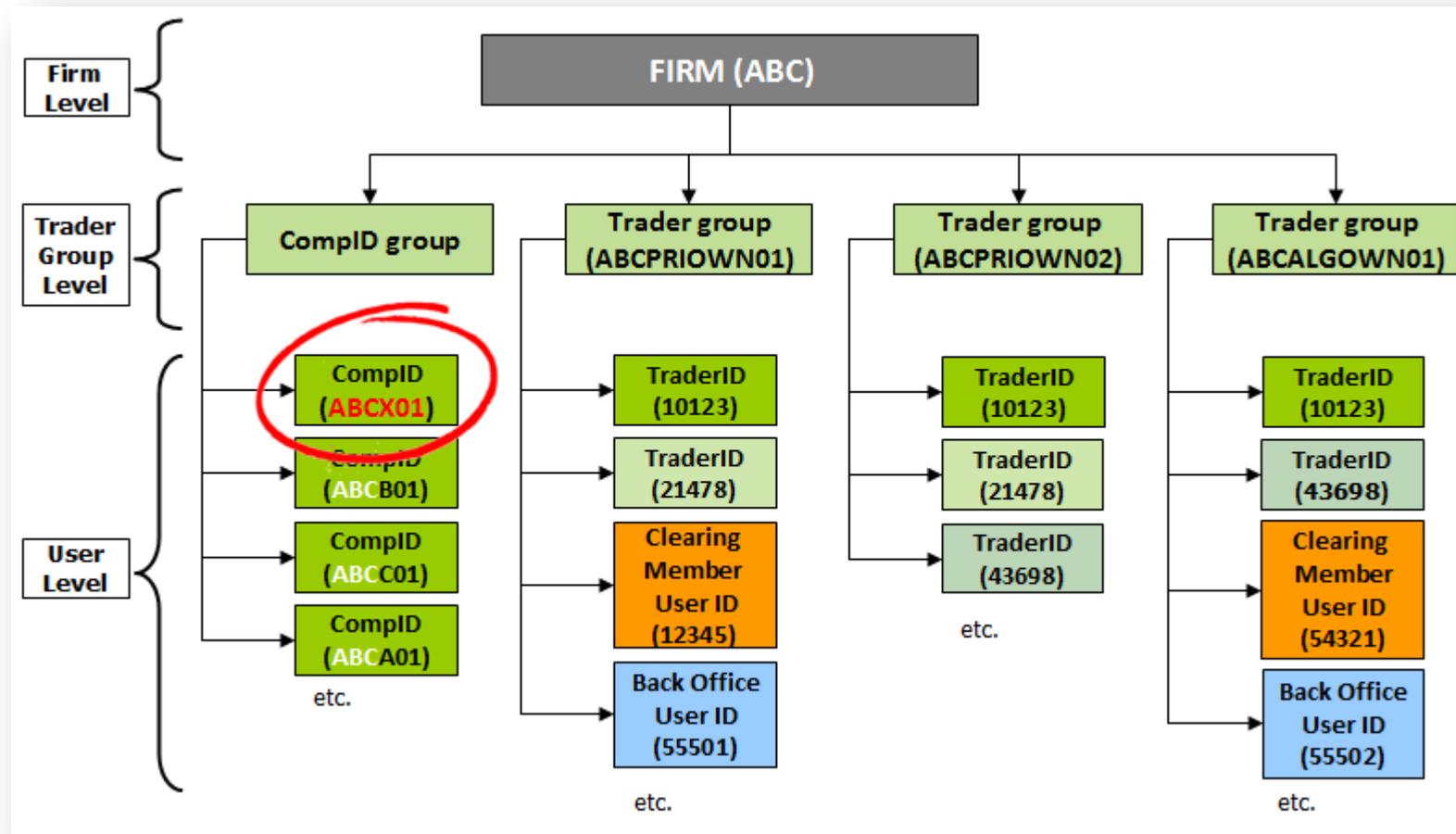


Clearing Member Structure



Trading Member Structure

(trade on behalf of clients by a Clearing Member)



Market Participant Structure

Production Identifier Code



- New trading and clearing members Production Identifier Code (PIC) will be 11 alphanumeric characters for the Derivatives market.
- The Production Identifier Code is also known as the Business Identifier Code (BIC) for the Equity Market.
- The code is used to identify the participant on the Production System and the Test System. The code is formatted as follows: **ABCXXCC001**
 - First 3 characters (ABC) – this refers to the Trading member or Clearing member
3 character standardized alpha code (A-Z caps only)
 - Next 3 characters (XXX) – default characters of XXX
 - Next 2 characters (CC) – this refers to TM for trading member, CM for clearing member or IS for information subscriber
 - Last 3 characters (001) – system generated 3 digit number, incremented if there is another PIC with the same prefix

Market Participant Structure

On-behalf-of CompID and Trader Groups



- A clearing member will own and login with a CompID belonging to the trading member firm dedicated as the on-behalf-of CompID
- This CompID will facilitate the trade reporting functionality executed by clearing members or on-behalf-of activity that may be required
- Without this CompID, a clearing member will not be able to perform reported trade activity
- The CompID is also important for any cancellations and default management activities that need to be performed by the clearing member on behalf of the trading member
- Trader Groups are available to segregate firms into logical partitions of either type of activity, geographically location etc
- A public Trader Group is mandatory for all trading members. This Trader Group will drive how reported trades are initiated.
 - The code for these will be ABCXXXPBL01 where 'ABC' represents the alpha code of the member
 - These are made available every day in the client reference data files

Market Participant Structure

Users



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.

Clearing Member User IDs are allocated to Clearing Member Users.

- 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
- 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 are allocated to Back Office Users.

- 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

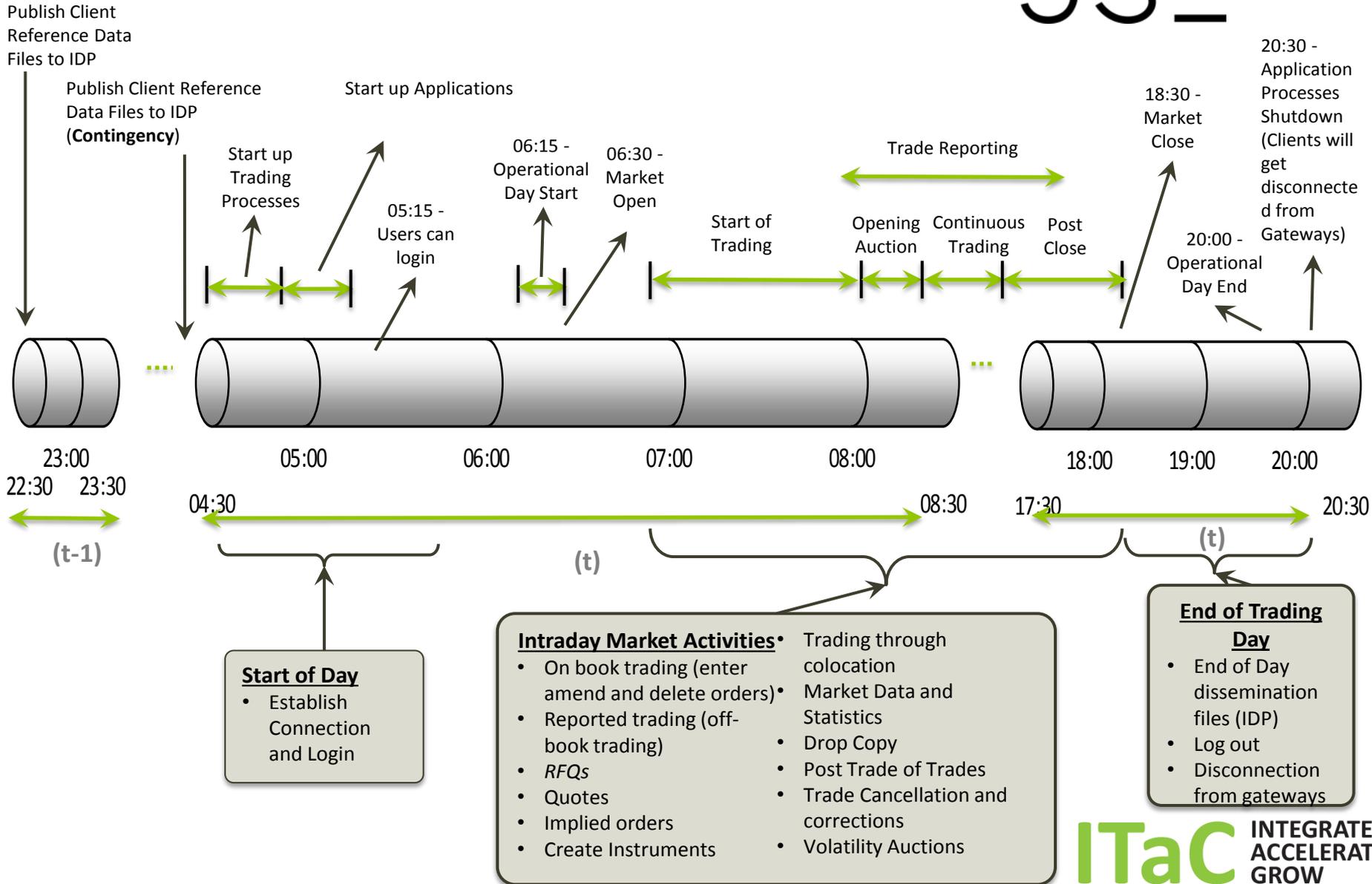
JSE Daily Life Cycle

A view of the full trading day



Daily Trading Lifecycle

Timeline of a typical day



Intraday Trading Sessions



- Trading is split into On-Book trading and Off-Book trading (Reported Trading)
- **On-Book** trading will have the following scheduled sessions daily
 - Start of Trading
 - Opening Auction (only for Equity Derivative Market)
 - Continuous Trading
 - Post Close
- **Off-Book** trading will have the following scheduled sessions daily
 - Start of Trading
 - Trade Reporting
 - Post Close

- **On-Book** Continuous Trading will commence at 08:30 SAST for the Equity Derivative Market and 09:00 SAST for the Currency Derivative Market and cease at 17:30 and 17:00 respectively
- **Off-Book** trading will commence at 08:00 SAST for both Markets, ending by 18:00 for the Currency Derivative Market and 18:30 for the Equity Derivative Market
- Unscheduled sessions will include Volatility and Re-opening Auctions, as well as Halt and Pause sessions
- Volatility Auctions will be introduced to the Equity Derivative Markets and Price Bands will be applicable for the Currency Derivative Market
 - Volatility Auctions occur when an instrument's price moves excessively in a short space of time
 - Price Bands will reject any order that is submitted which breaches

Intraday Trading Sessions

Futures Close Out



- During a Futures Close Out (FCO) day on the Equity Derivative Market all **On-Book** Continuous Trading will cease at 12:00 for all instruments with an expiry date equal to the FCO day
- This is the same time in which the underlying Equity Market Instruments will move into the FCO Auction Call session until 12:15
- **Off-Book** trading will remain in trade reporting session throughout the day

JSE Instrument Reference Data

A new way of identifying instruments



JSE

Instrument Reference Data

New naming standards



- Three Instrument Identifiers
 - **Contract Code** (replacing the existing four character code)
 - **International Securities Identification Number (ISIN)**
 - Equity Derivatives ZAD
 - Currency Derivatives ZAF
 - **Unique ID (Numeric)**
- **New Contract Code standard**
 - Concatenation of fields
e.g. <EXPIRY DATE> <ALPHA CODE> <SETTLEMENT TYPE> <CALL/PUT> <STRIKE>
 - Max length: 50
 - Examples:
 - 01DEC15 AGL PHY ANY DN
 - 01DEC15 AGL PHY ANY 23.99C
 - 17DEC15 GOOGL CSH
 - 01DEC15 GOOGL CSH QUANTO 23.99C
 - 01DEC15 USDZAR ANYDAY
 - 17DEC15 USDZAR QUANTO 23.999C
 - 17DEC15 ALSI MINI

Instrument Reference Data

Mapping old contract codes to new contract codes



- Existing four character Contract Code will be mapped to each contract that exists at go-live. This will be known as the **Old System Code**
- A Instrument Contract code mapping spreadsheet will be made available for dress rehearsals, but with new instruments being added daily, the final mappings will be made available on the go live weekend
- For Equity Derivatives and Currency Derivatives post ITaC go live
 - Old system code - four character code will not be allocated to any new instruments that are listed or that are created as a result of corporate actions
 - Only the new instrument identifiers will be created

Instrument Reference Data

Mapping old instrument types to new instrument types



- A mapping between the existing instrument types and how these instruments will be classified in the ITaC systems will be made available prior to ITaC go-live
- Instrument standards
 - Correct Underlying names will be used for all contracts e.g 17DEC15 ALMI will now be 17DEC15 ALSI MINI
 - Many instrument types that are currently classified as CanDo's will now have standardised instrument types and will not be part of 'Structured Products' e.g. Anydays and Quantos

Instrument Reference Data

Dividend Neutral changes



- Current system (Nutron) the Dividend Neutral is a virtual contract meaning that when the Dividend Neutral (N) contract is traded the system creates an equivalent SSF (Q) and Dividend Future (F) in equal amounts, for example:
 - Member A Buy 100 15 Jun17 AGLN
 - Member A long 100 15 Jun17 AGLQ
 - Member A long 100 15 Jun17 AGLF
- As the Dividend on AGL goes Ex on the underlying market the JSE process a Journal transaction to accommodate the Dividend going EX on the Dividend Future
- In the new ITaC implementation - the Dividend Future will no longer exist as the Dividend Neutral contract will now be “one” contract and the Journal transaction will be processed on this contract
- Main reason for the removal of the Dividend Future, when Members roll over their SSF contracts to the next expiry they do not always roll the Dividend Future

Instrument Reference Data

Automation of Corporate Actions processing



- Corporate Actions processing will be automated
 - Reference data updates – Master Data System (MDS)
 - Position adjustments – Post-trade Clearing System (RTC)
- Corporate Actions on derivatives will now be managed by the same team that manages equity corporate actions
- Market Notices will no longer be issued but information on treatment of derivatives positions as a result of corporate actions will be available on JSE website
- Corporate Actions on International Equities will be sourced from Thomson Reuters

Instrument Reference Data

User created instruments



- Instrument Types permitted for user created Instruments:
 - AnyDay Futures
 - AnyDay (Naked) Options
 - Delta Options
- Instruments that are eligible for user-creation can be found in the client Trading reference data (CSV) files
- Futures can only be created if existing Futures Contracts already exist on the same underlying instrument known as Reference Instrument
- Instruments can only be created with a date before that of the furthest expiry
- Instruments created intra-day will be disseminated via the MITCH Market Data Gateways
- Embellished data will be added to the client Trading reference data (CSV) files as part of the batch end of day (EOD) run

JSE Order Types and TIFs

More flexible and enhanced order ability



JSE

The 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.
- 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 or seller will ever know who their order was matched against.

Mandatory Order Entry Parameters



Field	Mandatory	Description	Possible Values
Instrument ID	Yes	The unique identifier of the security.	1092345
Client Order ID	Yes	Unique client order identifier assigned to an order by the trading party.	ABC123GF
Firm ID	Yes	ID of the Trading Firm.	JSEXXTM001
Side	Yes	Whether the order is to buy or sell.	Buy or Sell
TIF	Yes	Time validity of the order.	E.g. Day
Order Type	Yes	The type of the order .	MO; LO; SO; SL
Order Quantity	Yes	The quantity being bought or sold. This should be a whole number that is greater than zero and must be a multiple of the instrument's LOT SIZE.	1 to 99 999 999
Limit Price	Yes	For Limit orders, this refers to the minimum price in cents that the order can execute at and is specified by the trading party.	112.34
Capacity	Yes	Denotes if the order is entered as an 'Agency' or 'Principal'	A or P
Expiry Time	Required if time in force = GTT	The time at which an order with GTT order should expire.	Cannot exceed 17:00:00
Expiry Date	Required if time in force = GTD	The date on which an order with GTD order should expire.	Cannot be greater than 90 calendar days
Trader ID	Yes	The trader entering the order is identified by this field.	12345
Trader Group	Yes	The group which the Trader belongs to and represented by a node in the System.	JSERSDOWN01
Client Account	Yes	This will be the account found in RTC on an order or Off Book Trade.	1234AB
Cancel on Disconnect	Yes	Indicates if an order is flag to be removed by the system during a disconnect or logout of the CompID	0 or 1

Order Types



ORDER	DESCRIPTION
MARKET ORDER (MO)	<ul style="list-style-type: none">• Stipulates only volume of shares• Visible size = Order Quantity• MO will execute against all possible price levels on the contra side• MO will interact with Pegged Hidden orders in the order book subject to MES constraints• MO entered during an Auction Call Session will reside in the order book until the uncrossing is performed at which point the remainder of unexecuted MOs will be expired
LIMIT ORDER (LO)	<ul style="list-style-type: none">• Stipulates volume and a limit price• LO can be visible or Pegged hidden orders• For Visible Orders; Visible size = Order Quantity• Pegged Hidden Limit Order: Visible size= 0• Limit orders will always execute at the specified limit or better
STOP ORDER (SO)	<ul style="list-style-type: none">• SO is a MO that will remain unelected until the stop price is reached• Once elected, SOs will be treated similar to a regular MO• SO may not have time in force attributes of OPG, GFA, GFX and ATC and will be rejected upon entry
STOP LIMIT ORDER (SL)	<ul style="list-style-type: none">• SL is a LO that will remain unelected until the stop price is reached• Once elected, SLs will be treated similar to a regular LO• SO may not have time in force attributes of OPG, GFA, GFX and ATC and will be rejected upon entry

Order Types



ORDER	DESCRIPTION
MARKET IF TOUCHED (MIT) ORDERS	<ul style="list-style-type: none">• 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.• MIT orders cannot be entered with a Limit Price.• Similar to other parked orders, parking and election of MIT orders are communicated to clients via order management gateways.• 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.
MARKET TO LIMIT ORDERS (ML)	<ul style="list-style-type: none">• 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.• 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.• 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.• The order is never added to the order book with a limit price

Time In Force Validity (TIF)



TIF VALIDITY TYPE		DESCRIPTION
DAY	Good for Day	<ul style="list-style-type: none"> Orders will be expired at Market End of the trading day that they are submitted.
ATC	<i>At the Close</i>	<ul style="list-style-type: none"> <i>Orders injected into the Closing Auction Call session.</i>
FOK	Fill Or Kill	<ul style="list-style-type: none"> Orders with FOK time in force (except for Stop and Stop Limit orders) will be rejected during Auction Call sessions. Orders will either be fully executed on receipt or immediately expired.
GFA	Good for Auction	<ul style="list-style-type: none"> Orders injected into the next Auction Call session. GFA orders will be valid for multiple auctions.
GFX	<i>Good for Intraday Auction</i>	<ul style="list-style-type: none"> <i>Orders injected into the Intraday Auction Call session.</i> <i>The remainder of GFX orders will expire following the uncrossing of the intraday auction.</i>
GTD	Good Till Date	<ul style="list-style-type: none"> GTD orders will remain on the order book until fully filled, cancelled or upon reaching the specified expiry date.
GTT	Good Till Time	<ul style="list-style-type: none"> GTT orders are only valid for the current trading day. The time specified on a GTT order must be less than the start of Post Close session.
IOC	Immediate Or Cancel	<ul style="list-style-type: none"> Orders with IOC time in force (except for Stop and Stop Limit orders) will be rejected during Auction Call sessions. The remainder of partially filled IOC orders will be expired.
OPG	At the Open	<ul style="list-style-type: none"> OPG orders will only be accepted if submitted during the Opening Auction Call session.
GTC	Good Till Cancelled	<ul style="list-style-type: none"> GTC orders will remain on the order book until they have been filled, cancelled or have reached their maximum order duration.

JSE Off Book Trading

Reporting trades both single and dual-sided



Reported Trades or Off Book Trades are concluded outside the central order book. These trades may be submitted by one member (Single-sided Off Book Trades) or by both members (Dual-sided Off Book Trades).

All Trade Types associated with the Trade Report will ensure that the trade is published and included in statistical data updates.

Single Sided Reporting Model

Off Book trades where the member (firm) is the same on both the buy and sell legs of the trade

Dual Sided Reporting Model

Off Book trades is where there are two members (firms) to a trade i.e. the member is different on the buy and sell legs of the trade.

Reported Trade Matching



- 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

Reported Trade Matching



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.

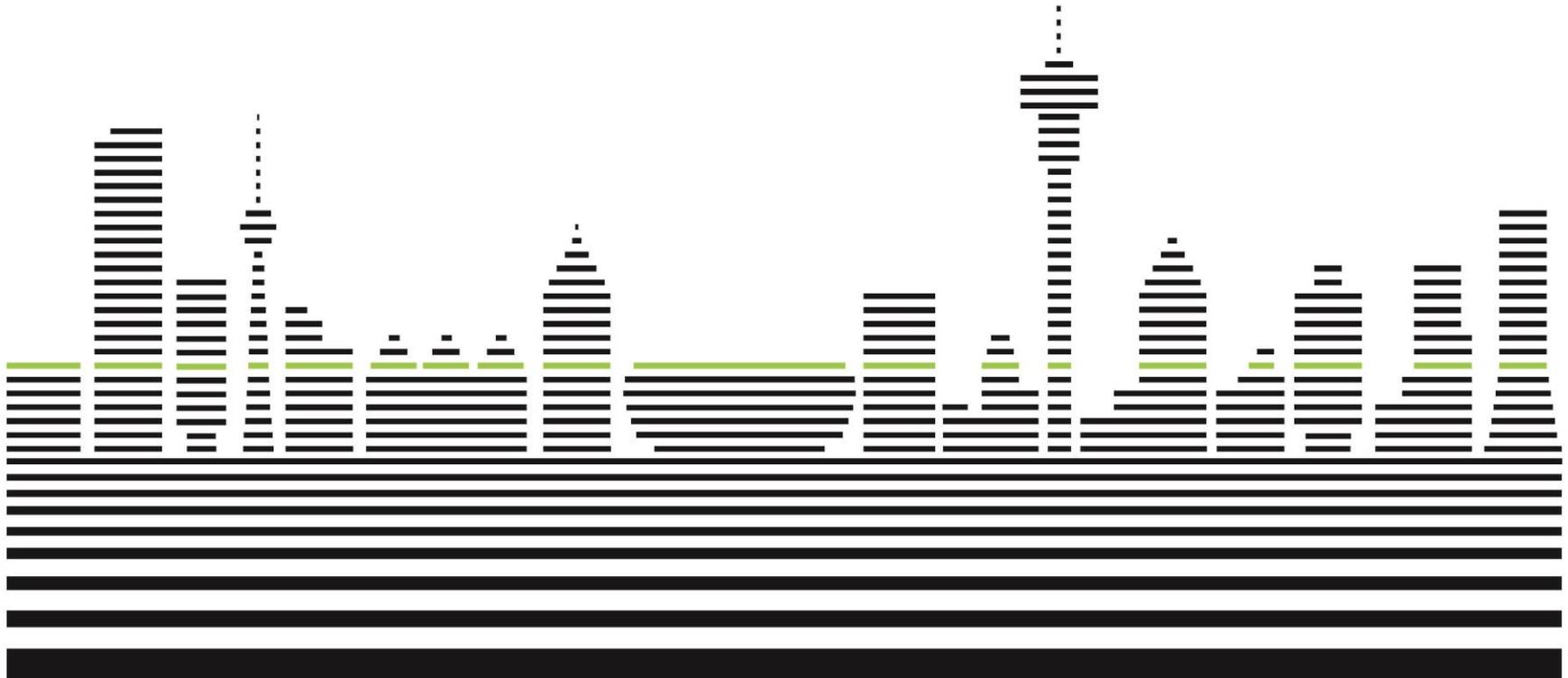
- Firm
- Trader Group
- Trader ID
- Number of counterparty party identifiers included on the message (includes the following)
 - Counterparty Firm ID
 - Counterparty Trader Group
 - Side of the submitting Firm, that is, buy or sell
 - Side of the counterparty Firm, that is, sell or buy
- Trade report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

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.



Trade Types



Negotiated Trade – **(NT)** The negotiated trade sub type will be used as the generic trade sub type for reported trades. This trade type replaces the previous Report Only trade functionality in its simplest form.

Exchange for Physical – **(EP)** A transaction negotiated privately in which a Futures contract for a physical item is exchanged for an actual physical good. This trade type is applicable to the Currency Derivatives Market.

Roll Trades – **(RT)** are used to facilitate the closing out of a position in the near expiring contract and moving that position to a further dated contract. Because this will always constitute two reported trades, one selling and one buying, the trading system needs to be told how to link these. This is achieved by using the StrategyLinkID field.

Trade Types



Strategy Trade – **(SR)** Trades that include two or more legs that combined, create a certain strategy will be deemed to be strategy trades. These strategies are primarily traded On Screen, however the trading system can accommodate these in the form of Reported Trades.

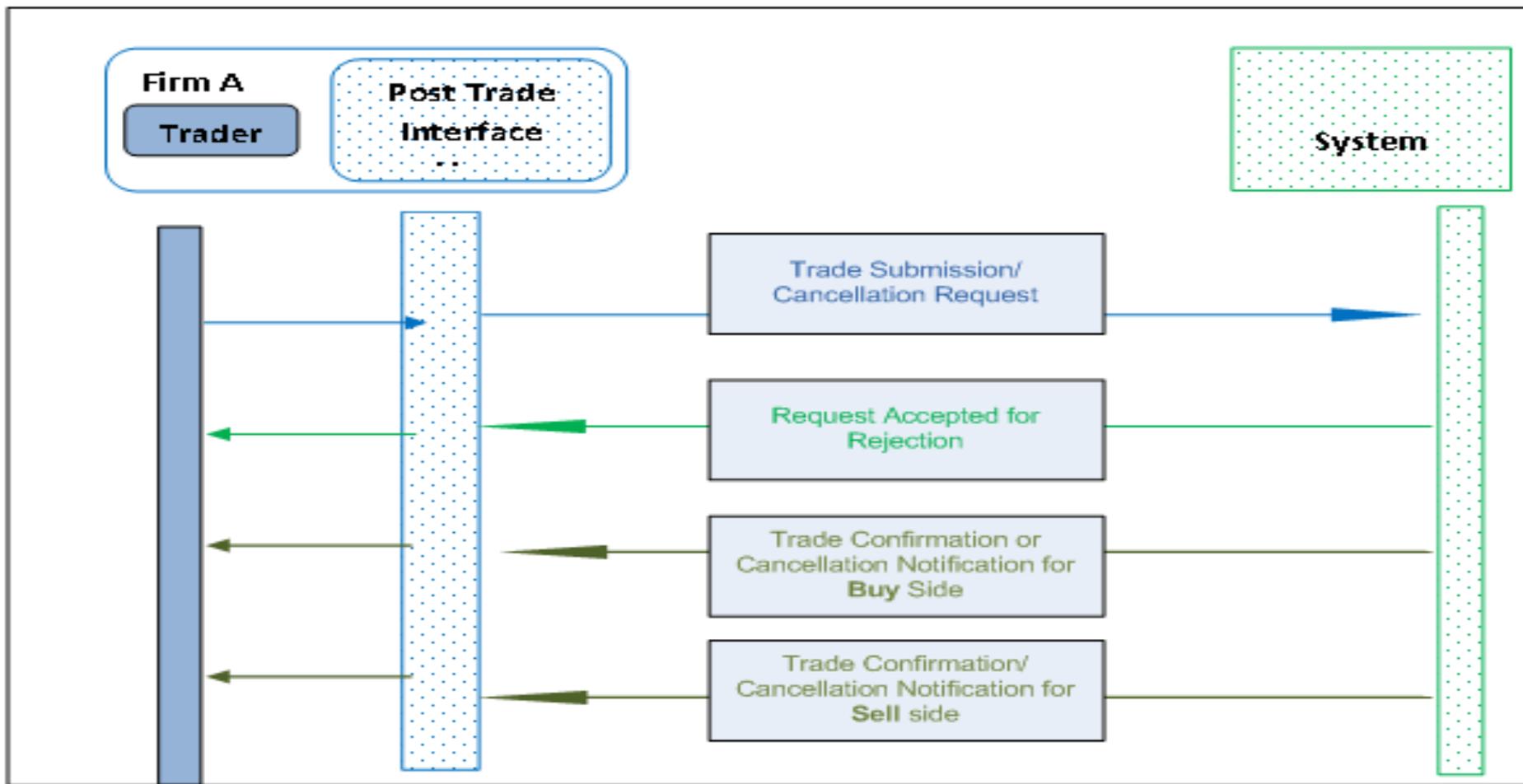
These standard JSE strategies include:

- Inverse Calendar Spreads
- Delta Options

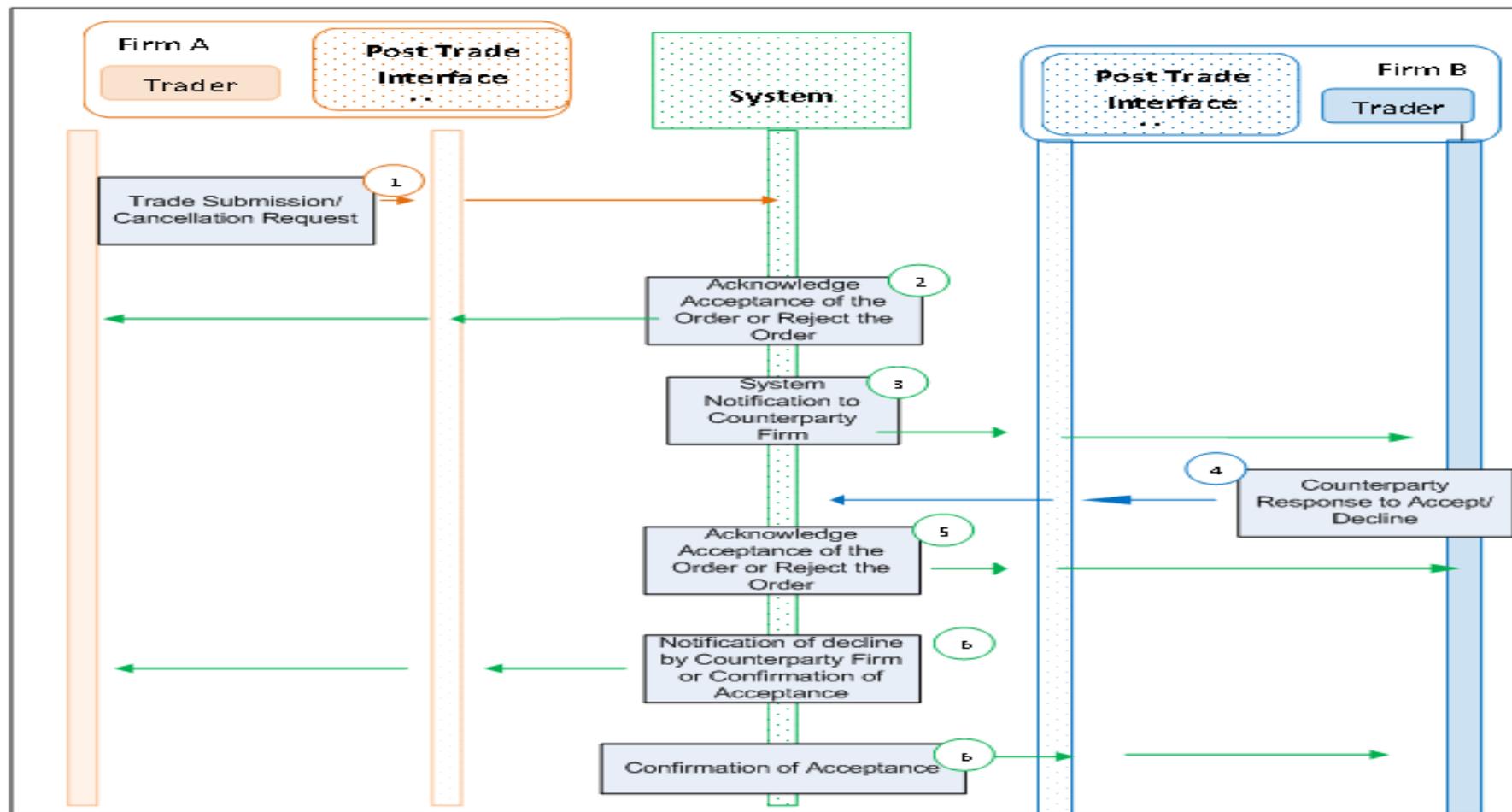
Individual legs of these strategy trades need to be linked, demonstrating that a certain strategy was used. This is achieved by using the StrategyLinkID field

Price Adjust – **(PA)** JSE Surveillance may, where a trade has been matched as a result of a clear error, instruct the affected member or members to execute a trade cancellation or effect a trade price adjustment. The original trade will be cancelled as per standard procedure, and subsequently a reported trade will be booked at an adjusted price as instructed.

Single-sided Off Book Trades



Dual-sided Off Book Trades



JSE ITaC Remaining Milestones

Dates of future activities



Remaining activities leading up to go-live

ITaC timeline & key dates



Date	Milestone	Status
11 Nov 2017	Mandatory Market Facing Dress Rehearsal 1	Simulate a production business day
25 Nov 2017	Mandatory Market Facing Dress Rehearsal 2	Simulate a production business day
1 Feb 2018	Final enablement amendments - cut-off date	Final enablement amendment request submissions (bear in mind standard SLA is 7 days)
8 Feb 2018	Final Live Connectivity (LCON) tests	Last date to prove any enablement amendments ahead of go live
17 Feb 2018 <i>Contingency 24 Mar 2018</i>	Mandatory Market Facing Dress Rehearsal 3	Execute final deployment and implementation activities Simulate a production business day
19 Feb 2017 <i>Contingency 26 Mar 2018</i>	ITaC Go live	Equity Derivatives and Currency Derivatives start trading and clearing through the new ITaC solutions



Please refer all queries to the
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