

# **Integrated Trading and Clearing (ITaC) Working Group Session**

12 May 2015



# Agenda

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- Purpose of the ITaC Working Group
- ITaC project scope and important considerations
- Trading System Overview
- Clearing System Overview
- Collateral Management and EOD Processing
- Questions

# Purpose of the ITaC Working Group

Sandra Borrageiro



# Purpose of the ITaC Working Group (WG)



- Hold regular checkpoints with clients to provide insight and information to clients pertaining to the ITaC project, the solutions being delivered as part of the project as well as the benefits and potential impacts to clients in migrating/upgrading these solutions
- Provide regular feedback on project status and timeline
- Present and discuss both the functional and technical aspects of the new solution(s) in more detail
- Ensure clients have all the information they require to develop and integrate their systems/solutions and operations to the JSE services
- Clients wishing to provide input and suggest topics or areas of discussion they wish to have covered during the TWGs, should email their suggestions to [ITaC@jse.co.za](mailto:ITaC@jse.co.za)
- JSE will make use of various existing communication channels and forums for ITaC communication e.g. Advisory committees, Forums etc.

# 2015 Working Group (WG) Schedule



- Proposed 2015 WG Schedule

Date	Time
Tues, 12 May 2015	11h00 – 13h00 SAST
Mon, 18 May 2015	10h00 – 12h00 SAST • Collateral management overview session for CSDPs
Thurs, 28 May 2015	10h00 – 12h00 SAST • Daily Life cycle for Trading and Clearing
Wed, 3 June 2015	10h00 – 12h00 SAST
Wed, 1 July 2015	10h00 – 12h00 SAST
Wed, 8 July 2015	10h00 – 12h00 SAST
Wed, 15 July 2015	10h00 – 12h00 SAST
Wed, 5 Aug 2015	10h00 – 12h00 SAST
Mon, 21 Sept 2015	10h00 – 12h00 SAST
Mon, 19 Oct 2015	10h00 – 12h00 SAST
Wed, 18 Nov 2015	10h00 – 12h00 SAST

Likely to add more dates

# Scope for Project 1a, Project 1b and 1c

Sandra Borrageiro



# Proposed ITaC phases



- The programme consists of 2 Projects
  - Project 1:
    - 1a: Equity Market upgrade for trading only
      - Targeting Q3 2016 (dependent on T+3)
    - 1b: Equity Derivatives Market
      - Targeting Q2/3 2017
    - 1c: Currency Derivatives Market
      - Targeting 2 months after 1b
  - Project 2: Commodity Derivatives Market, Interest Rate Derivatives and Bonds Markets



# ITaC Project 1a

## Equity Market upgrade



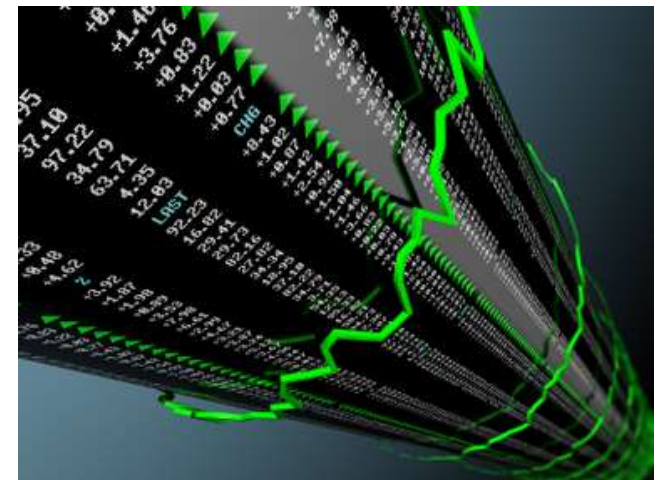
- Project 1a - Equity Market Upgrade 2016
  - Change to market data message and bug fixes (incl issues raised by our clients)
  - Trading and Information (market data)
    - Initial trading and information specifications to be issued 8 mths prior to go-live
  - Customer Test Service (CTS)
    - Environment available 6 mths prior to go-live
  - Deployment
    - First mandatory dress rehearsal approximately 2 mths prior to go-live
    - Final conformance cut-off approximately 1 mth prior to go-live



# ITaC Timeline Principles



- Project 1b & 1c - Equity Derivatives and Currency Derivatives
  - Trading and Information (market data)
    - Initial trading and information specifications issued 14 mths prior to go live
    - Customer Test Service (CTS) available at least 12 mths prior to go-live
  - Clearing
    - Initial clearing specifications issued 12 mths prior to go live
    - Customer Test Service (CTS) available at least 10 mths prior to go-live
  - Deployment
    - First mandatory dress rehearsal approximately 2-3 mths prior to go-live
    - Final conformance cut-off approximately 1-2 mths prior to go-live



# Important considerations for ITaC



- JSE Shared Infrastructure (SIP) Policy
  - Further to Service Hotline 24/2014 issued 14 February 2014 an updated JSE SIP Policy was issued to include the JSE Colocation service
  - The SIP policy will be implemented in a phased approach across all markets and all services
  - A SIP is defined as a legal entity that:
    - Provides shared infrastructure services to more than one JSE Member; or
    - Is an Information Subscriber that is also a JSE Colocation Customer distributing JSE Market Data within the JSE Colocation facility
  - JSE will communicate in due course when this will become effective for derivative and interest rate markets. Please note that compliance will be a prerequisite for go live of Project 1b and 1c

# Important considerations for ITaC (contd...)



- JSE Services Agreement (JSA)
  - JSA governs client and JSE obligations when connecting or making use of JSE services in the Equity Market
  - JSA will be applicable for all JSE services and will be extended with additional schedules for the Interest Rate and Derivatives markets and will be implemented in a phased approach during 2016
  - Further details will be discussed during a subsequent dedicated working group session
- Network Service Provider (NSP) Policy
  - All JSE clients will need to ensure they connect to the JSE via an accredited JSE telecommunications provider i.e. NSP
  - Work is in progress to accredit all existing network service providers who currently facilitate connectivity to the JSE services on behalf of JSE clients
  - This policy will become applicable for the Interest Rate and Derivatives markets during Q2 2016

# JSE Front End Decision



- JSE has provided substantial lead time to the market of the decision to no longer provide a trading and deal management front-end to clients
- Please remember the 3rd party solution currently used by many of the Clearing Members to replicate margin and fee methodologies in balancing back to the JSE is not a JSE-provided solution
- All clients including Clearing Members are urged to begin engagements with potential software providers to ensure their trading and clearing solution and front-end needs are met
- To assist clients, JSE looking to engage with software providers to hold an open day for them to showcase their products and services to the market

# Trading System Overview

Martin Koch



JS III

# Agenda

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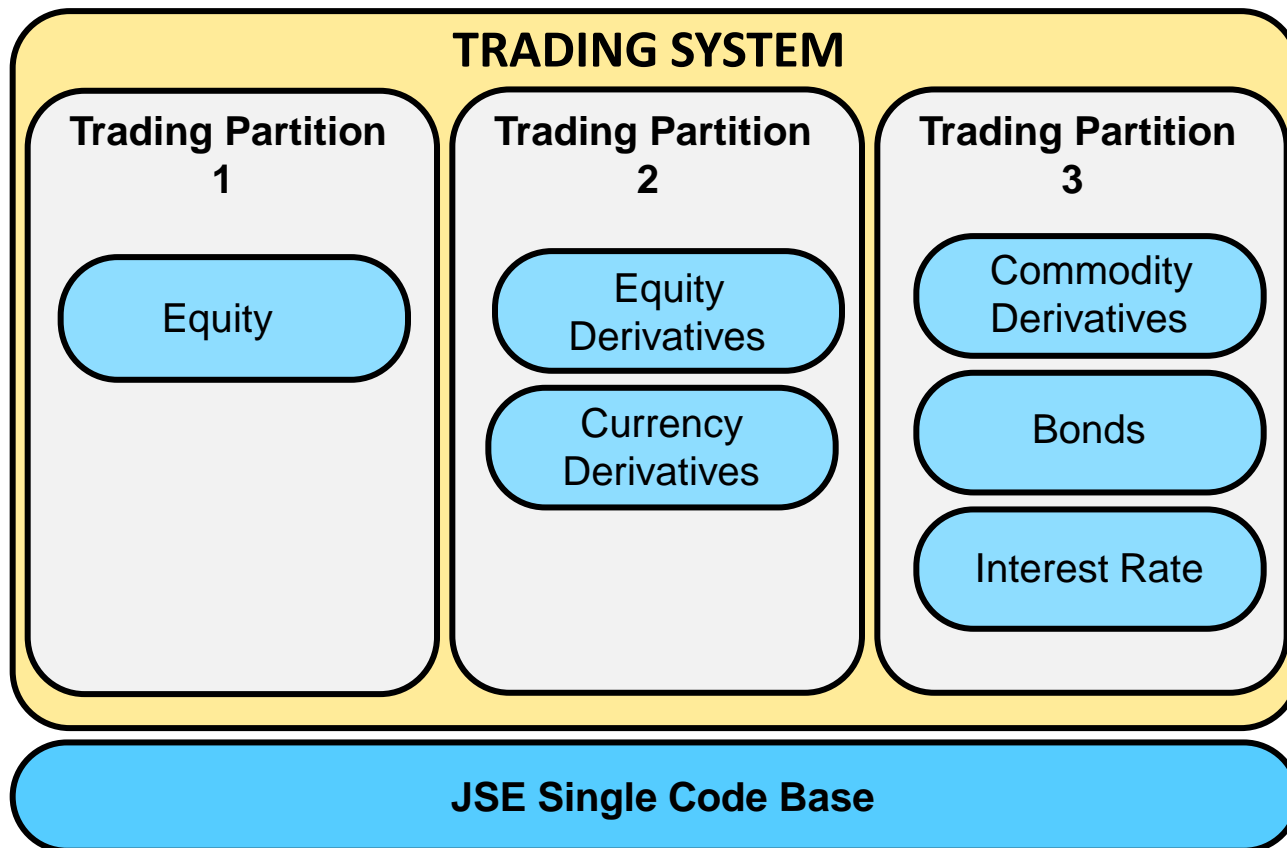


- Trading System Overview
- Functional Overview
  - Trading Functionality
  - Trading Reference Data
  - Market Data
- Technical Summary
  - JSE Client Connectivity
  - Message Throttling
  - Primary and Secondary Market Data Feeds
- Proposed Solution Architecture and Interfaces

# Trading system configuration

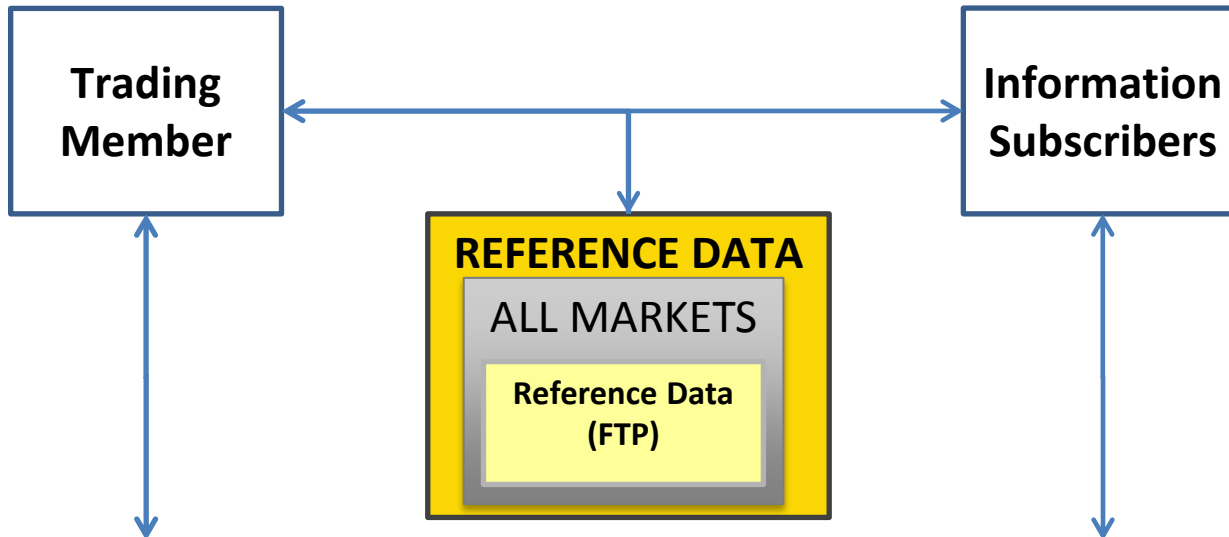


- Single instance of the trading engine
- Consolidated hardware
- Consolidated single code base for the JSE



# Trading and Information System

All Markets – High Level



## ORDER MANAGEMENT GATEWAYS

### ALL MARKETS

Trading  
GWs  
(Native)

Drop  
Copy  
GW  
(FIX)

Post  
Trade  
GW  
(FIX)

### EQUITY

Trading  
GW  
(FIX)

## MARKET DATA GATEWAYS

### ALL MARKETS

Full  
Depth  
(MITCH)  
Un-  
throttled

Full  
Depth  
(MITCH)  
Throttled

### EQUITY

LvL1  
(FIX)

News  
(FIX)

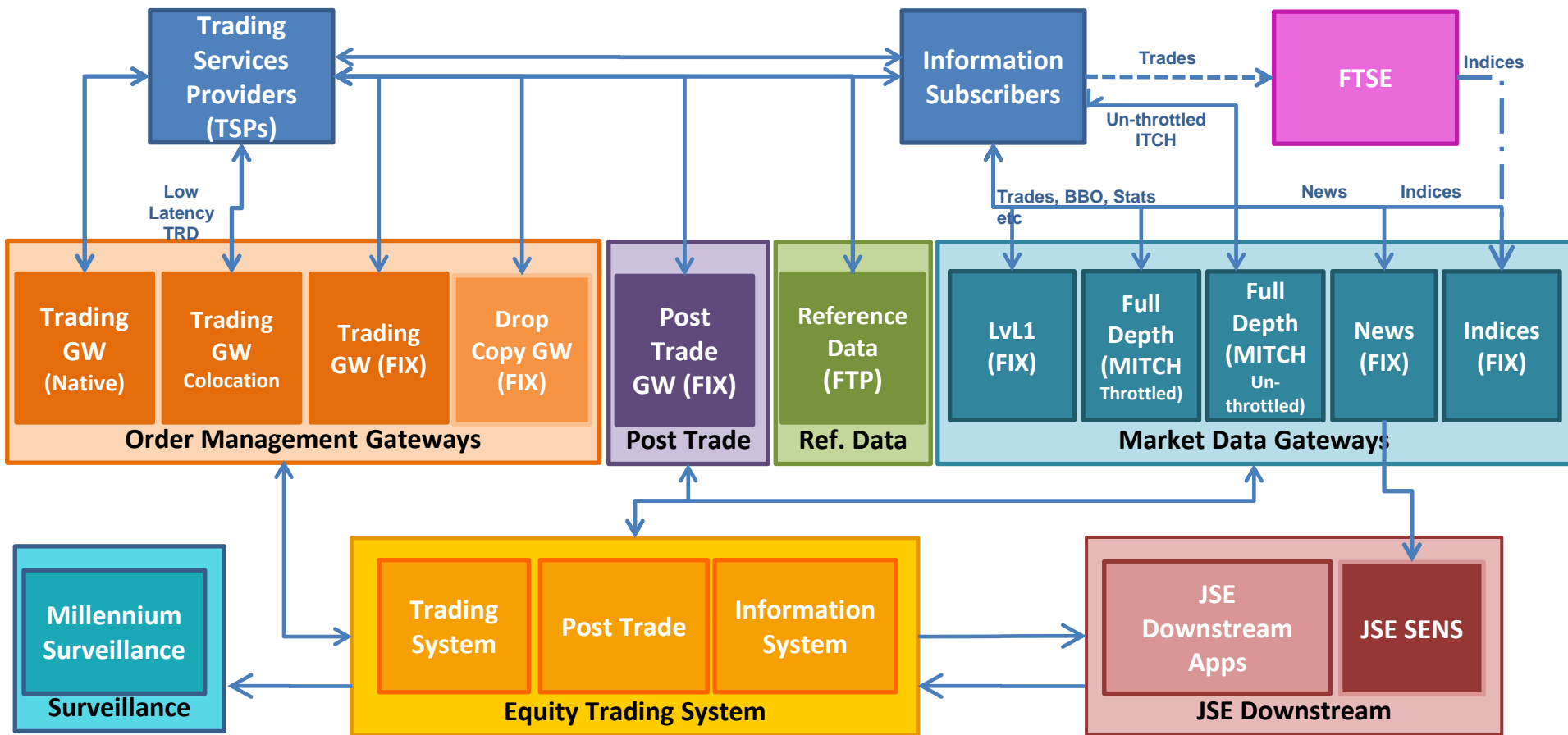
Indices  
(FIX)

### DERIVATIVES BONDS & INTEREST RATE

LvL1  
(MITCH)

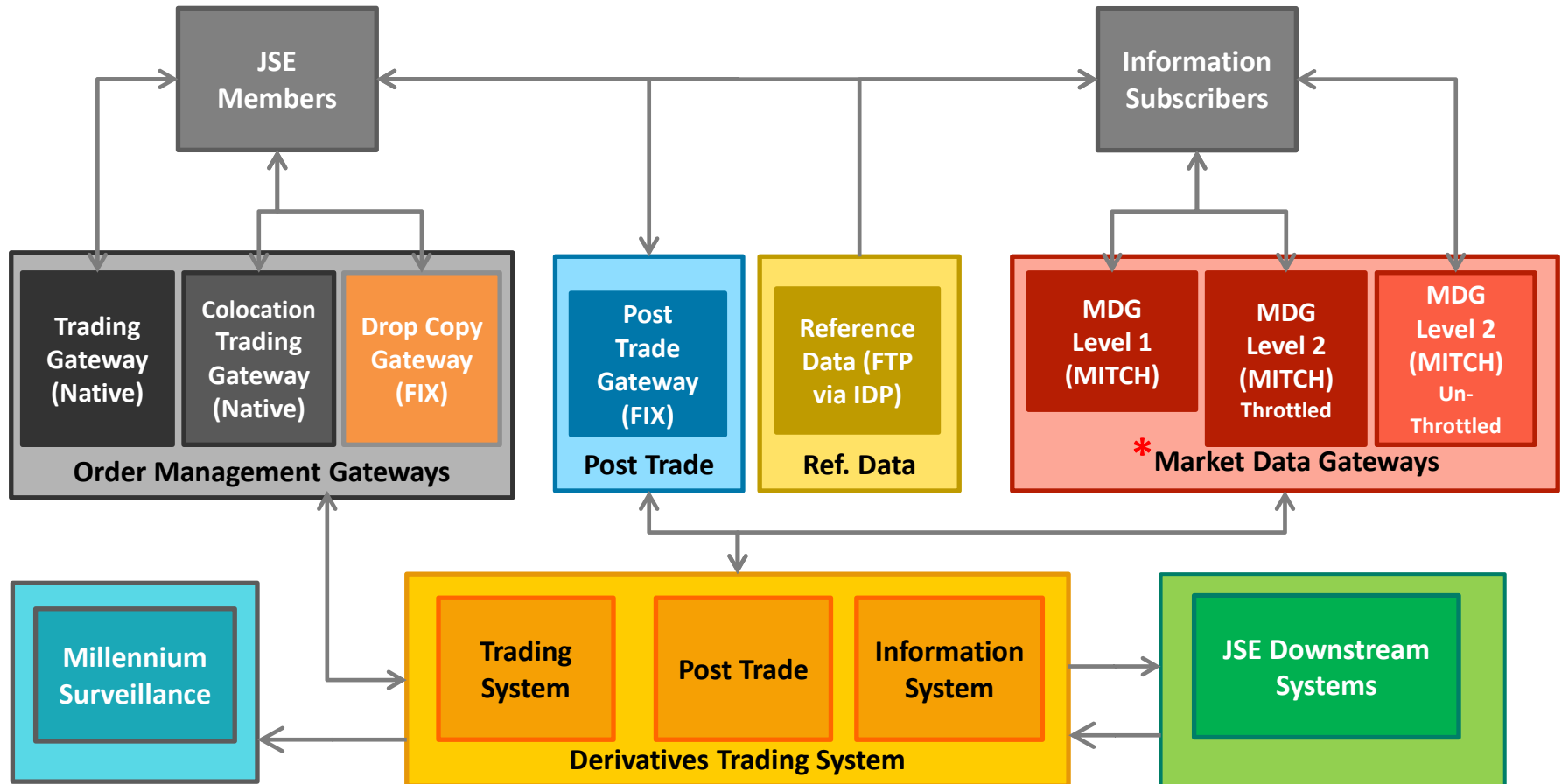
# Trading and Information System

## Current Equity Market



# Trading and Information Systems

## High Level Proposed Derivatives Solution



- 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

# Functional Overview

## Trading and Market Data recap



Order Management functionality via the trading API includes:

Activity	Equity	Equity Deriv.	Currency Deriv.	Description
Trading Gateway (Native)	Y	Y	Y	Order Management of new and existing orders or order cancels with immediate confirmation of On Book (automated) trades and publishing of Execution Reports. Trade Cancellations and Market Operations announcements.
Trading Gateway (FIX)	Y	N	N	
Drop Copy Gateway (FIX)	Y	Y	Y	Allow for the receipt of additional copies of the Execution Reports generated by the system, 'Copy To' functionality. This interface may also be used by clients to download the current status of all their active orders in the event of a failure.
Post Trade Gateway (FIX)	Y	Y	Y	Enables member firms to submit and manage Off Book trade reports and receive real-time information on On Book executed trades. This interface may also be used by clients to download all their confirmed trades in the event of a failure.
Market Data Gateways (MITCH)	Y	Y	Y	Provides real-time market data of instruments traded on the JSE such as price, volume, closing prices auction information, instrument status etc. A Level 1 and Level 2 (full market depth) service will be available.
Reference Data (FTP)	Y	Y	Y	Static trading reference data for the Trading System will be made available on a daily basis via the JSE IDP (FTP) service.

# Functional Summary

## Trading System Interfaces



### Trading Gateways for Equity Derivatives and Currency Derivatives:

- Native Trading Gateways
  - Order Management and immediate confirmation of On Book trades and publication of Execution Reports
  - An enhanced message will be introduced for derivatives
- FIX Post Trade Gateways
  - 'Enriched' trade confirmation of On Book trades including Same Day On Book Trade Cancellations -publishing of Trade Capture Reports (TCRs)
  - Off Book Trade Reporting – submission and receipt of TCRs
  - Request Download Trades (OTBD) and TCRs are resent to the requesting user
- FIX Drop Copy Interface
  - 'Copy To' functionality
  - Own Order Book Download (OOBD)

# Functional Summary

## Market Data Interfaces



- Market Data messages will be distributed and disseminated using the multicast MITCH protocol
- Market Data Gateways
  - Equity Market
    - FIX Level 1
    - MITCH Full Market Depth
    - FIX Indices
    - FIX News
  - Equity Derivatives
    - MITCH Level 1
    - MITCH Full Market Depth
  - Currency Derivatives (will add Interest Rate Markets later)
    - MITCH Level 1
    - MITCH Full Market Depth

# Functional Summary

## Derivatives Market Data Interfaces



- Top-of-the-Book Gateway (Level 1)
  - Only the combined best bid and offer message will be disseminated
  - Statistics (including an enhanced stats message) will be incorporated within specific MITCH messages
  - Intra-day reference data updates will be disseminated
- Full-Depth Gateway (Level 2)
  - Full market depth disseminated via this feed
  - Statistics (including an enhanced stats message) are incorporated within specific MITCH messages
  - Intra-day reference data updates

# Functional Summary

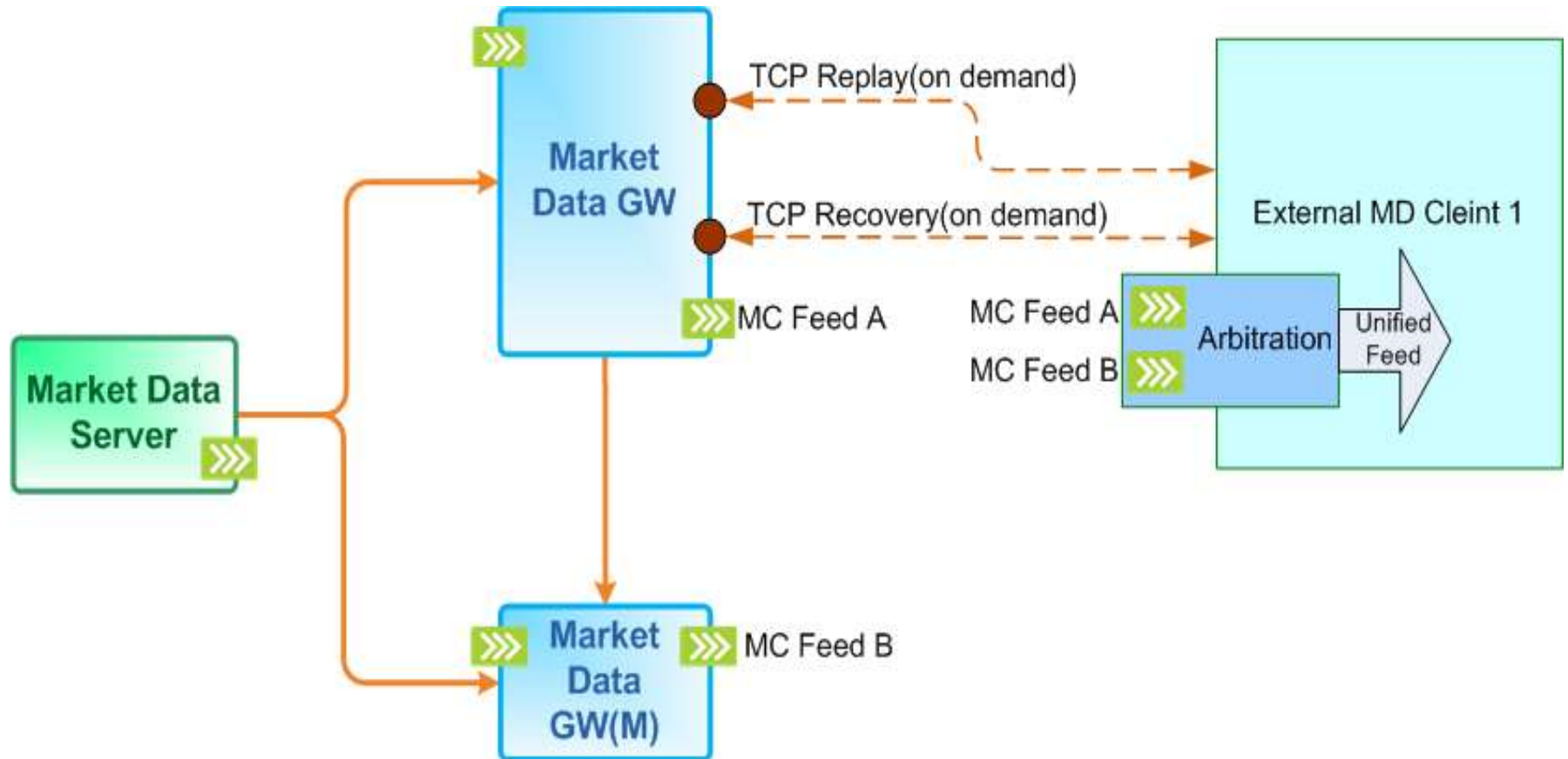
## Market Data Message Types



- There will be no difference in the market data message types and message setup disseminated per market i.e.
  - Common messages will be disseminated across all markets
  - Fields not relevant for certain markets will be left blank
  - Open Interest will be derived in the clearing system and disseminated periodically through certain Market Data Gateways

# Functional Summary

## Market Data A and B Feeds



- Only one multicast feed will be disseminated in the event that the JSE Remote DR site is invoked

# Functional Summary

## Market Data Feed A and B



- For redundancy, a duplicate message will be published via the Market Data Gateways i.e. an A Feed and B Feed
- Clients must arbitrate between the feeds in the event of a message loss prior to attempting to recover a missed message
- Once a message loss is detected i.e. message sequence 10 not received on A feed, confirm message sequence 10 not received on B feed, only then should one connect to the primary Market Data Recover and/or Replay service
  - Replay Service - small message loss
  - Recovery Service - large message loss and used after system failure

# Functional Summary

## Client Connectivity



- JSE Client Connectivity document will be updated to include requirements per service including bandwidth requirements
- Clients to provide a public IP address for enablements
  - Public IP address from Client Access Network
  - Private IP allocated by JSE from Colocation
- Clients will not be allowed to use the same IP address in production and test services
- Clients will require connectivity to the JSE IDP Server for access to the Trading Reference Data files

# Functional Summary

## Input Order Rates



Order rates (orders per second) will apply for all inbound messages in order to maintain market integrity

- All messages exceeding this rate will be rejected by the gateway
- Numerous breaches of this rate within a defined period, will result in a disconnect of the user
- Message rates are still to be finalised by the JSE

# Clearing System Overview

Alex Comninos



# Agenda

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- Provide a overview of the clearing scope and solution
- Collateral Management and EOD processing

# ITaC Clearing consultation topics



Topics in bold are the focus of this session. Topics highlighted in green were discussed in previous sessions.

Topic	Description	Session
Pre-trade risk management	<ul style="list-style-type: none"><li>• Permissions, limits, controls, monitoring etc</li></ul>	
Intraday (post-trade) risk monitoring	<ul style="list-style-type: none"><li>• Exposure updates and alerts</li></ul>	
Margin calls	<ul style="list-style-type: none"><li>• EOD and intraday</li></ul>	
EOD process for balancing on margins and fees	<ul style="list-style-type: none"><li>• <b>Single, integrated EOD process</b></li><li>• <b>Details of balancing process</b></li></ul>	<ul style="list-style-type: none"><li>• <b>17 March</b></li><li>• <b>Today</b></li></ul>
Acceptance of non-cash collateral	<ul style="list-style-type: none"><li>• <b>Collateral management principles</b></li><li>• <b>Detailed process and workings</b></li></ul>	<ul style="list-style-type: none"><li>• <b>17 March</b></li><li>• <b>Today</b></li></ul>
Interfacing to the new trading and clearing solutions	<ul style="list-style-type: none"><li>• <b>JSE Front End decision – implications for Clearing Members</b></li><li>• Technical interfaces for reference data, trading, deal management, clearing and market data</li></ul>	<ul style="list-style-type: none"><li>• <b>17 March</b></li></ul>
Default management	<ul style="list-style-type: none"><li>• Default management process</li><li>• <b>Alternative Clearing Member concept</b></li></ul>	<ul style="list-style-type: none"><li>• <b>17 March</b></li></ul>

## ITaC Clearing consultation topics (cont.)



Topic	Description	Session
Other Clearing operational activities	<ul style="list-style-type: none"><li>• User access</li><li>• On-behalf of activities</li><li>• Client loading and maintenance</li></ul>	
Data take on	<ul style="list-style-type: none"><li>• Client codes</li></ul>	
Margin methodologies	<ul style="list-style-type: none"><li>• J-Span with add-ons</li><li>• Historical Value at Risk</li></ul>	
Billing structures, parameters and transactional data	<ul style="list-style-type: none"><li>• Billing structures, parameters and deals data required for balancing</li></ul>	
JSE Derivatives Rules and Directives	<ul style="list-style-type: none"><li>• Changes required to Rules and Directives</li></ul>	

# Functional Overview

## Clearing and Risk Management



- **Functions facilitated via the Clearing interface**

- Reference data management (e.g. client loading, account creation)
- Position keeping and management
- Deal Management
- Intraday risk monitoring
  - Monitoring of portfolio exposures, position and concentrations in near real-time
- Margin calculation and management
- Fees and commissions calculation and management
- EOD Clearing Member Balancing
  - Balancing to exchange on margins, fees, interest and other cash movements by replicating the exchange's margin methodology and fee models
- Collateral management services
  - Management of cash and securities collateral including functions such as pledging, withdrawal and substitution of collateral
- Settlements
- Reporting

# Functional Overview

## Clearing and Risk Management (cont.)



- **The following Clearing relevant functions will be facilitated via the Trading interfaces**
  - Monitoring of trading activity and market data
  - Pre-Trade Risk Management
    - Management of member and client pre-trade limits, permissions and other controls

# Functional Overview

## Post-Trade Interfaces



### Clearing Member Front Ends/Systems

- Monitoring orders & trades
- Market data
- On-behalf-of actions
- Trading specific reference data

- Reference data
- Trade and position updates
- On-behalf of deal mgmt actions
- (Client maintenance)
- Collateral mgmt
- Intraday risk monitoring
- All other info for EOD balancing

**MillenniumIT API**

**SOD/EOD**

**Cinnober API**

**MillenniumIT  
Trading System**

**Information  
Delivery  
Portal**

**Cinnober  
Clearing System**

# Collateral Management and EOD Processing

Brett Kotze



# Collateral Management

## Principles for acceptance of non-cash collateral



- Securities collateral accepted for the following:
  - Initial margin including add-ons (liquidity and large position)
  - Settlement margin
  - Default fund contributions – to be confirmed
- Securities collateral not accepted for the following:
  - Additional margin – legal constraint
  - Variation margin – this is always cash
- Minimum percentage of collateral in ZAR cash
  - Set by the Clearing House against all accounts
  - Clearing Member can set a higher % on Trading Member and clients
  - Trading Member can set a higher % than Clearing Member on their clients

# Collateral Management

Principles for acceptance of non-cash collateral (cont.)

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- Securities to be accepted
  - Equities Top 40
  - Liquid Government Bonds
  - Other securities will be considered in future
- Haircuts on securities collateral
  - Calculated using a stress testing methodology
- Valuation of collateral
  - Valued daily according to current market convention

# Collateral Management

## Principles for acceptance of non-cash collateral (cont.)



- Pledge mechanism will be used for collateral management
- Trading Members and clients will pledge directly to the Clearing House
- Auto committing by CSDPs
  - It is envisaged that the CSDPs will need to auto commit to the pledge instructions – to be discussed with the CSDPs

# Collateral Management

## Principles for acceptance of non-cash collateral (cont.)



- The solution caters for the portability of Trading Member and Client accounts
  - Trading Member
    - Transfer Trading Members and their portfolio positions and collateral from one or several Clearing Members to one or several Clearing Members
  - Client
    - Transfer a Client and all its portfolio positions and collateral to a new Trading Member

*The previous Trading Member or Clearing Member will be responsible until the morning of the effective date after which the new Trading Member or Clearing Member will be responsible. That EOD the collateral will reflect under the new Trading Member or Clearing Member*

# Collateral Management

## Principles for acceptance of non-cash collateral (cont.)



- Foreign currency collateral
  - It was previously mentioned that foreign currency will be accepted in a future phase, the JSE is reassessing the possibility of including this in the first phase considering its importance to the market
  - The JSE is currently engaging regulators to discuss necessary regulatory approvals required for accepting foreign currency collateral
- JSE Rules and Directives will be updated to cater for the acceptance of non-cash collateral

# Collateral Management

## Segregated Depository Accounts (SDA)

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- Client enablement
  - A Segregated Depository Account (SDA), which is an account at the Central Securities Depository (CSD) - Strate, will be loaded against either the Clearing Member, Trading Member or Client account.
  - The loading and verification process for SDAs will be covered in a future session

# Collateral Management

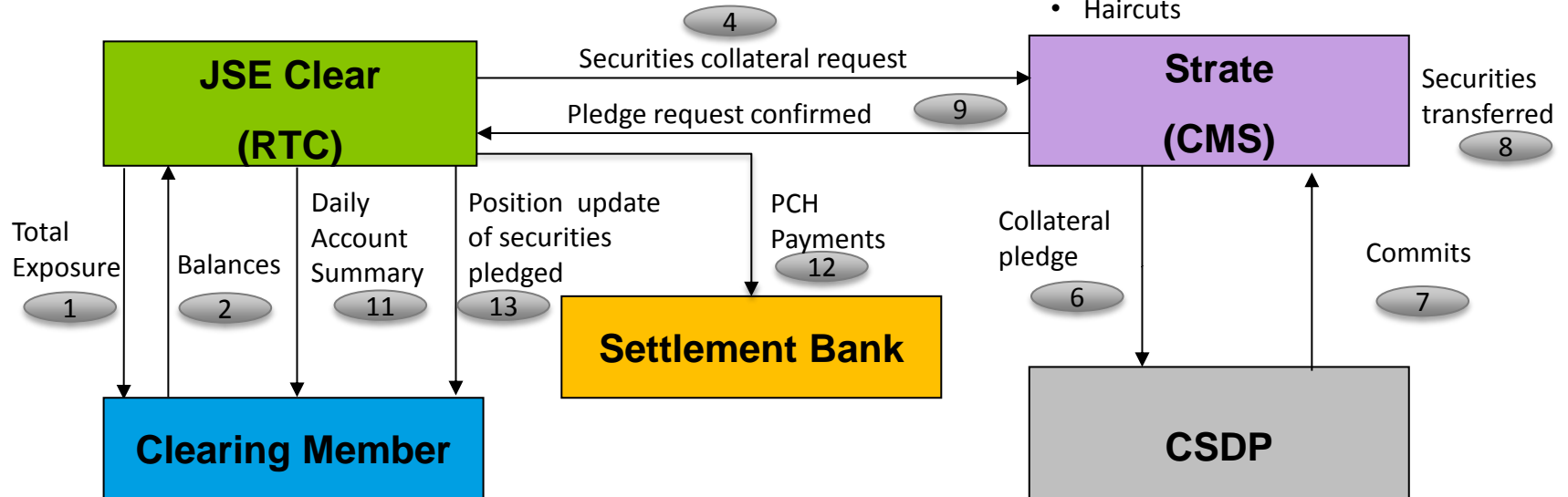
## Processes - EOD Flow



- 1 - Margin requirements calculated
- 3 - Value of securities collateral is calculated
- 10 - Calculates ZAR Cash

JSE Collateral Rules applied for calculation & allocation of collateral:

- Eligibility criteria
- Max per type 5
- Haircuts

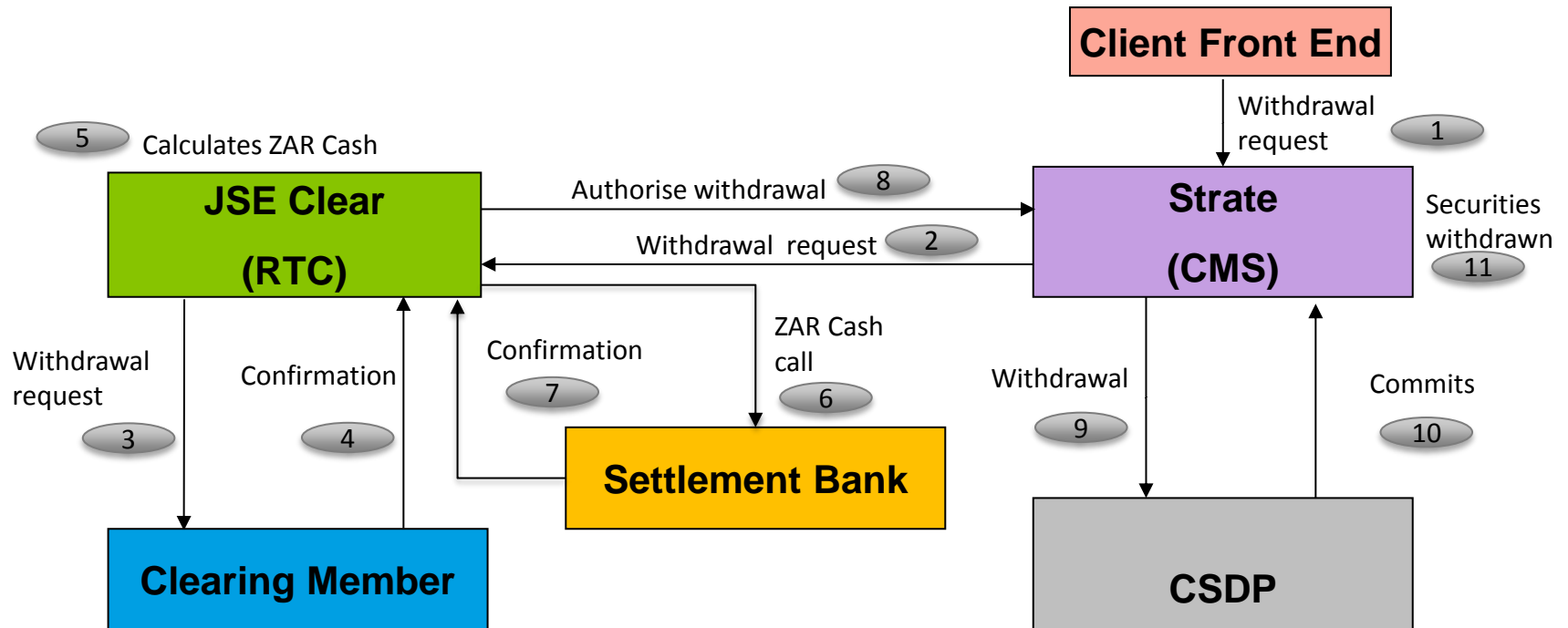


### Note:

Exposures recalculated and resent daily  
BDA impact – being investigated

# Collateral Management

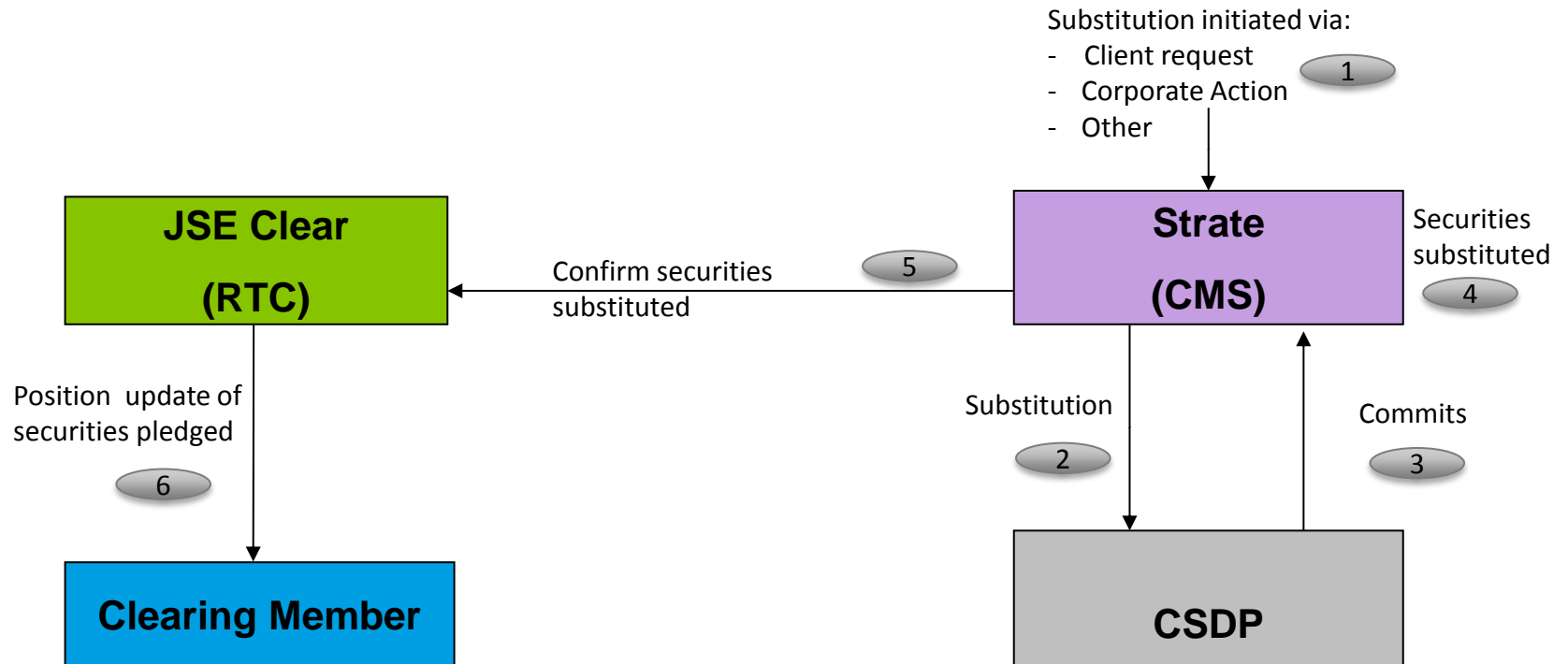
## Processes - Withdrawals (Proposed)



### Note:

1. Need to agree timing – cut-off times
2. Proposing 09h00 and 13h00 to allow cash to flow in Central Bank Funds

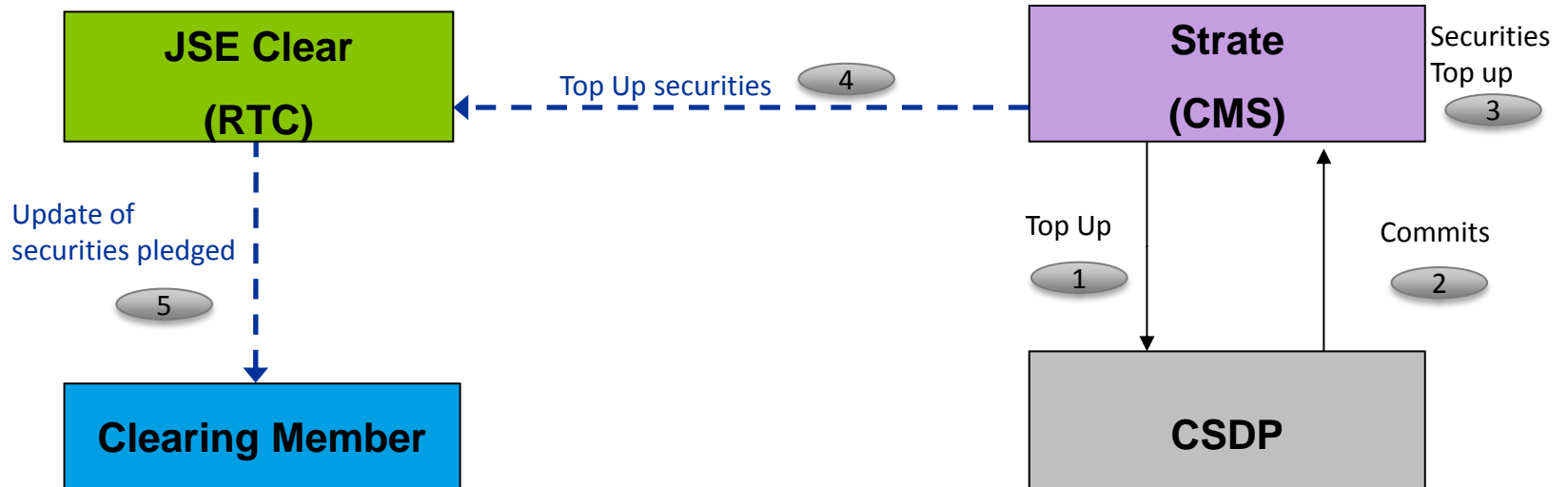
# Collateral Management Processes - Substitutions (Proposed)



**Note:**

1. Exact value has to be substituted
2. Still clarifying design

# Collateral Management Processes - Top Up (Proposed)



**Note:**

1. Still clarifying design

# Questions?

JSE



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