Integrated Trading and Clearing (ITaC)
Technical Working Group (TWG) Session

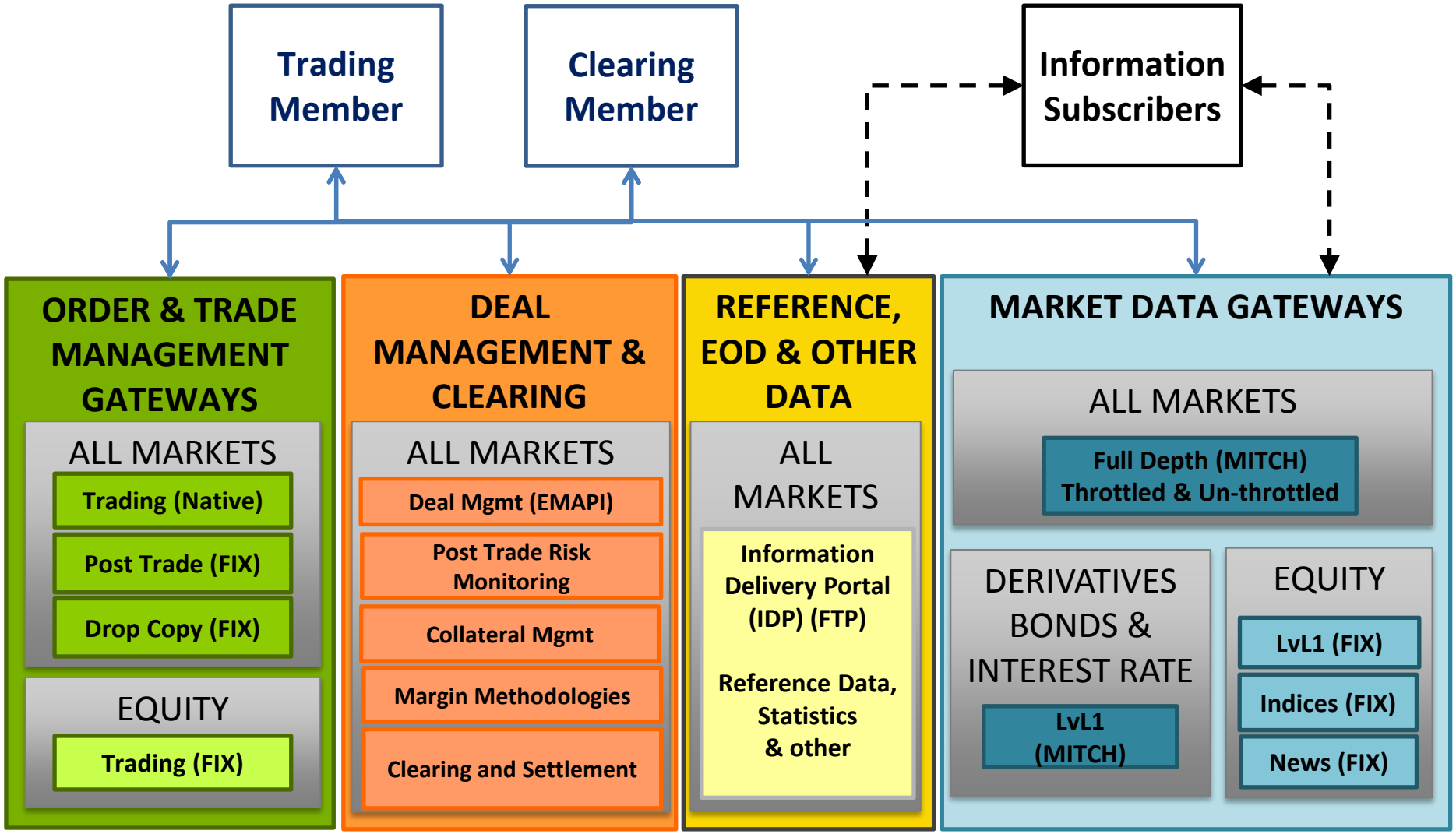
21 April 2016

Agenda

- Post-trade Services Documentation for ITaC
  - Volume 00 – Post-trade Services Overview
  - Volume 01 – Post-trade EMAPI Common Specifications
  - Volume 02 – Post-trade EMAPI Clearing Specifications
  - Volume 03 – Post-trade Margin Methodology Specification
  - Technical Specification Documents
    - EMAPI protocol – HTML format
    - EMAPI protocol – XML format
    - EMAPI protocol – XSD Schema
    - EMAPI TagWire Encoding
- JSE Commissions
- Software Provider showcase day
- Questions?

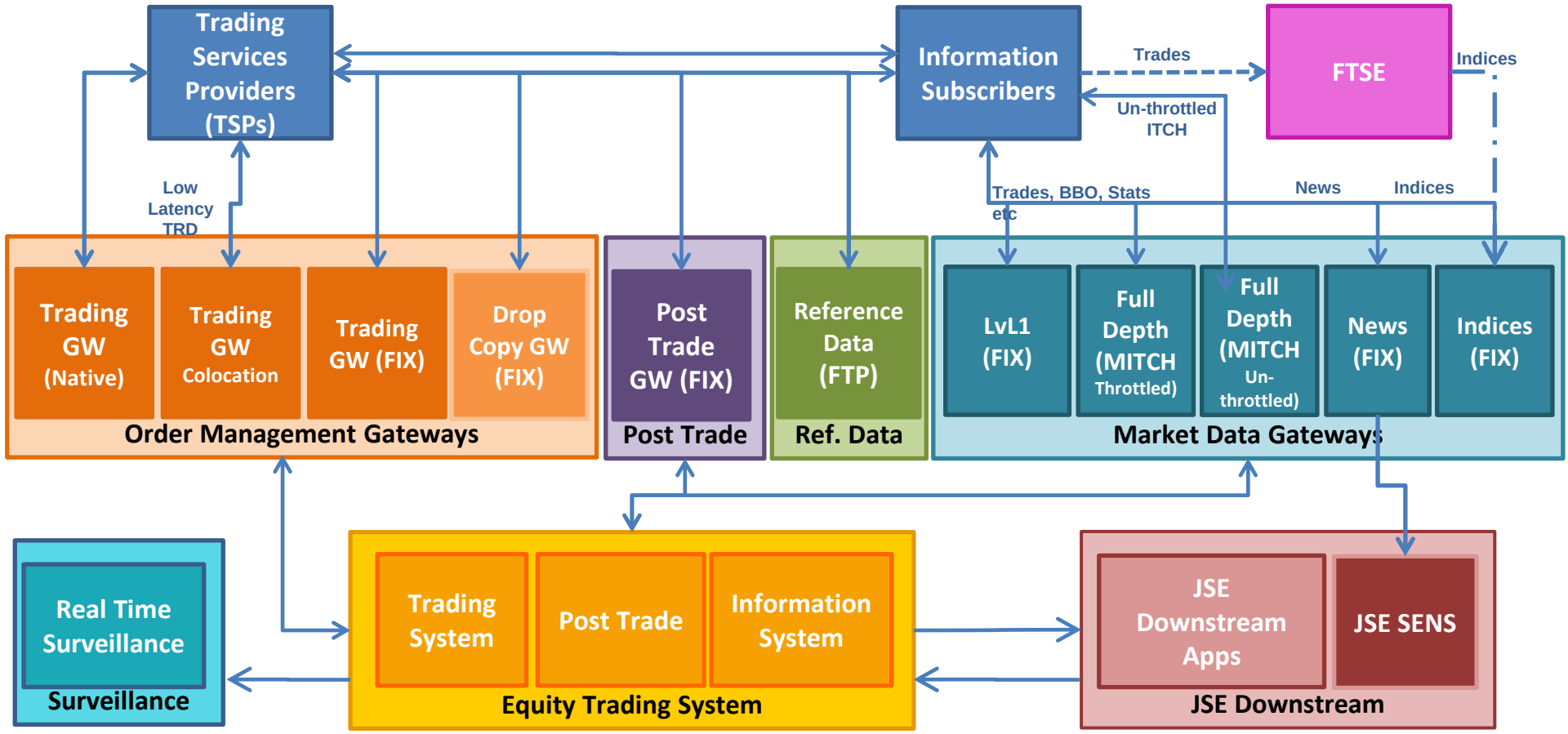
Trading, Clearing and Information Systems

All Markets – High-level



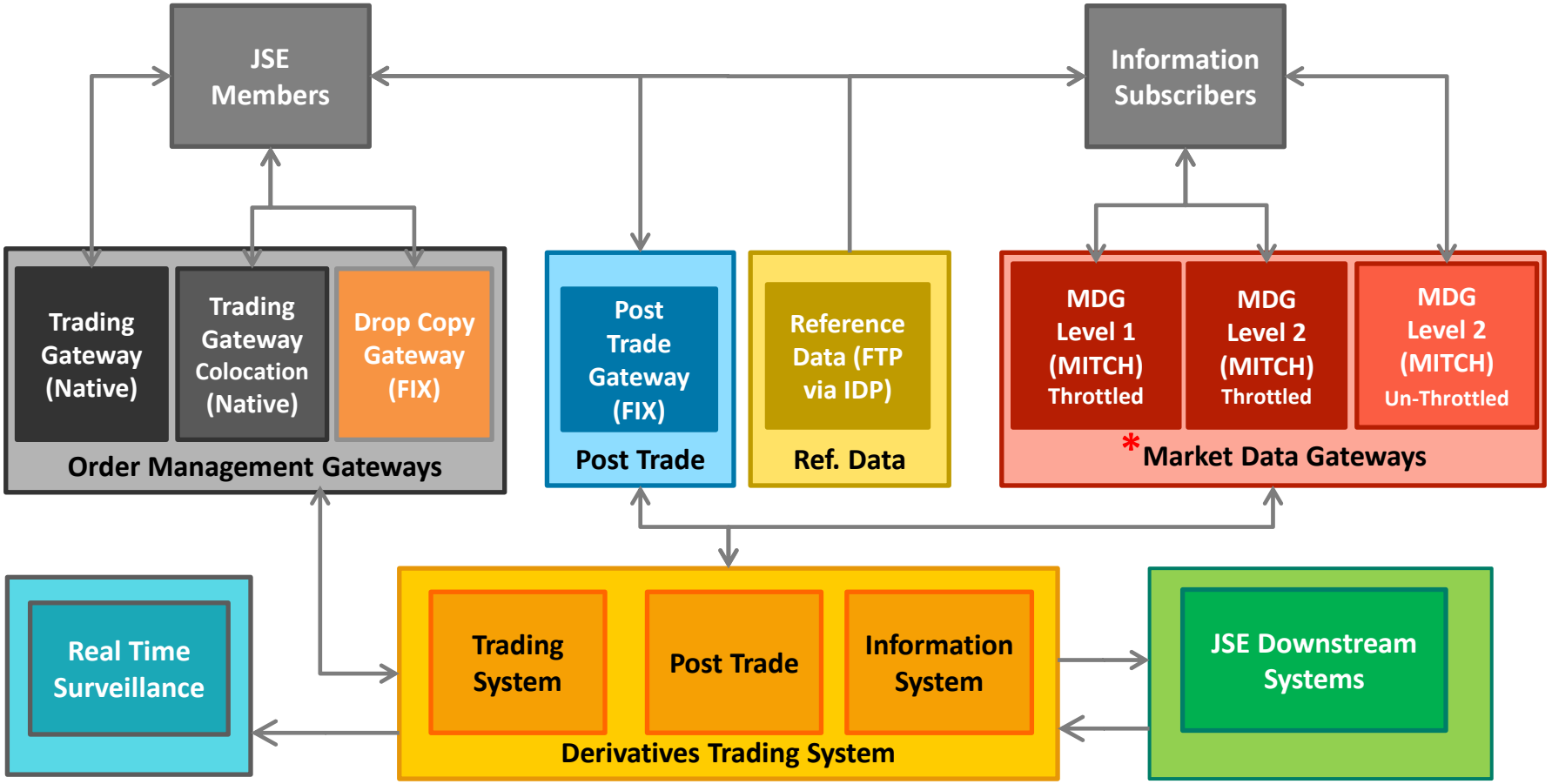
Trading and Information System

Current Equity Market



Trading and Information Systems

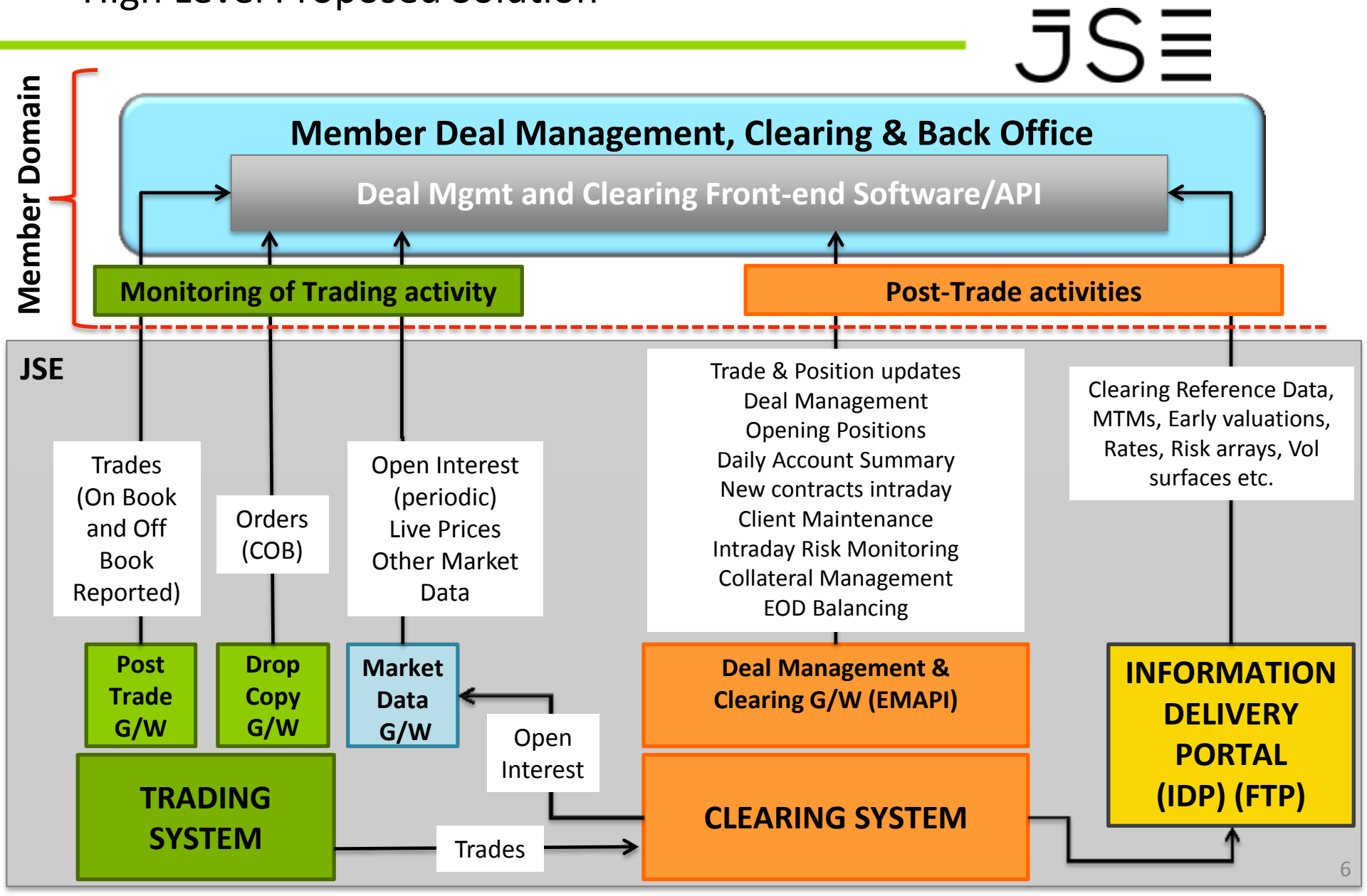
High Level Proposed Derivatives Solution



- 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

Post-trade Interfaces

High Level Proposed Solution



Summary of Clearing Topics Covered To-Date

Clearing & Risk Management

Clearing overview & daily lifecycle

- Post-trade functions
- Intraday & EOD processes

Settlement

- Single EOD run
- EOD balancing
- Settlement of margins, interest on cash, fees etc.
- Ad-hoc intraday margin call

Collateral management

- Securities & foreign currency collateral
- EOD & intraday processes

Margin methodologies

- JSPAN
- Margin add-ons
- HistVaR

Post-trade (intraday) risk monitoring

- Setting of intraday exposure limits
- Exposure updates and alerts

Default management

- Client default
- Trading Member default
- Clearing Member default

Legend

- Covered
- Covered at high level, further coverage planned
- Not yet covered
- Covered today

2016 Technical Working Group (TWG) Schedule

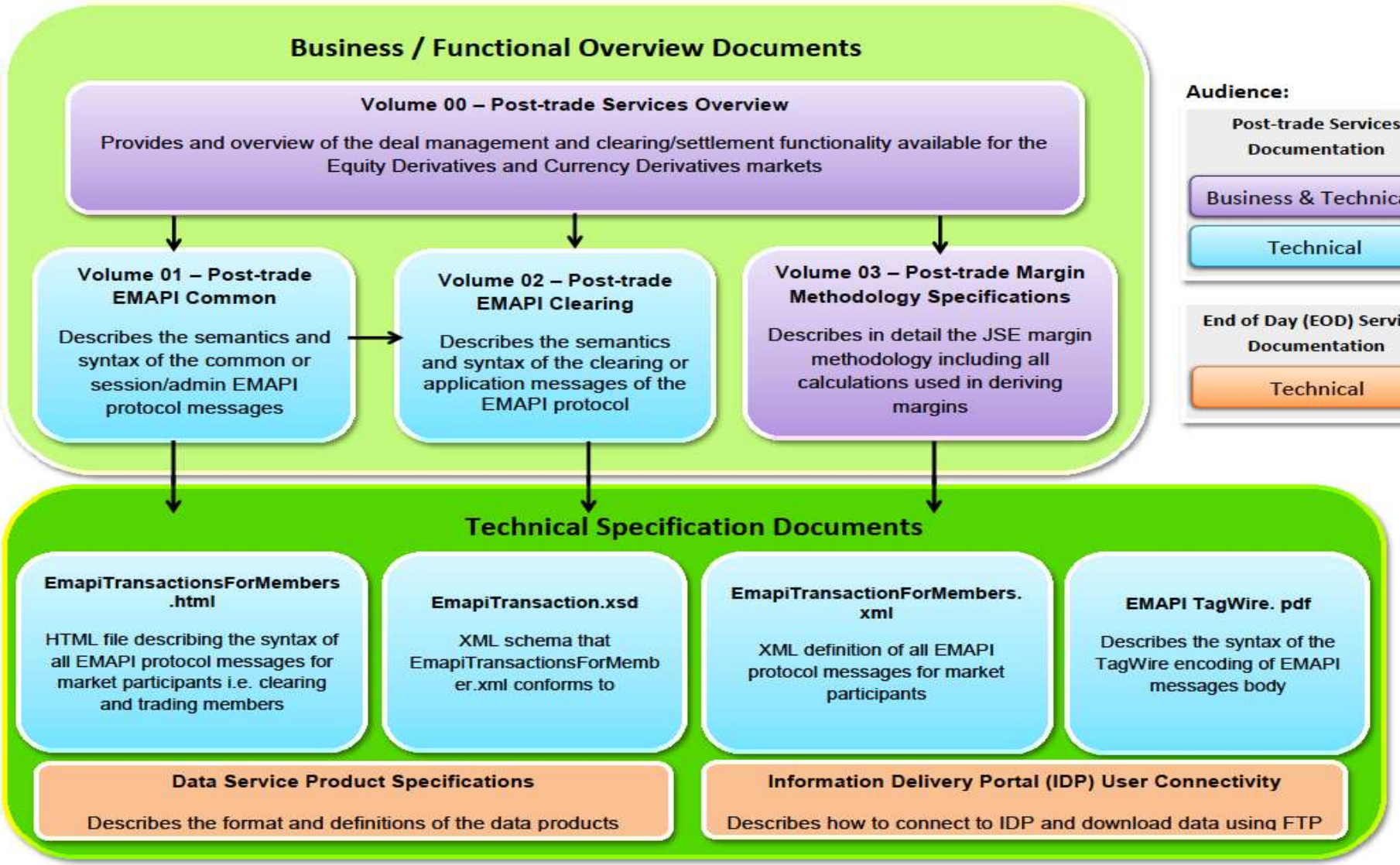
- Proposed 2016 Schedule

Date	Time	Status
Mon, 22 February 2016	14h00 – 15h30 SAST	Cmpl
Thurs, 10 March 2016 (CT)	11h00 – 13h00 SAST	Equity Market upgrades presentation in Cape Town Cmpl
Thurs, 21 April 2016	11h00 – 13h00 SAST	In progress
Wed, 25 May 2016	11h00 – 13h00 SAST	
Thurs, 9 June 2016 (CT)	11h00 – 13h00 SAST	TBC
Thurs, 23 June 2016	11h00 – 13h00 SAST	
Thurs, 21 July 2016	11h00 – 13h00 SAST	
Thurs, 25 August 2016	11h00 – 13h00 SAST	
Wed, 7 September 2016 (CT)	11h00 – 13h00 SAST	TBC
Thurs, 29 September 2016	11h00 – 13h00 SAST	
Wed, 26 October 2016	11h00 – 13h00 SAST	
Wed, 23 November 2016	11h00 – 13h00 SAST	

Post-trade Services Documentation

- Post-trade Services documentation is a set of documents that covers the business functionality available in the JSE Post-trade solution
- In addition, they include the technical information required to support own solution developers or software providers who wish to directly connect to and interface to the JSE Post-trade **Real Time Clearing (RTC)** system
- Technical protocol for connecting to JSE RTC is via the **External Message Application Programming Interface (EMAPI)**
- Documents provide additional information, context and background to system
- First draft of the Post-trade Services documentation for ITaC will be published during May 2016, to the ITaC webpage
- A service hotline will be issued to clients notifying them when these are available for download

Post-trade Services Documentation



Post-trade Services Documentation
Business / Functional Overview Documents

Business Functional / Overview Documents		
Document Name	**Format**	**Description**
Volume 00 – Post-trade Services Overview	PDF	Provides and overview of the deal management and clearing/settlement functionality available for the Equity Derivatives and Currency Derivatives markets
Volume 01 – Post –trade EMAPI Common	PDF	Describes the semantics and syntax of the common or session/admin EMAPI protocol messages
Volume 02 – Post-trade EMAPI Clearing	PDF	Describes the semantics and syntax of the clearing or application messages of the EMAPI protocol
Volume 03 – Post-trade Margin Methodology Specifications	PDF	Detailed description of the JSE margin methodology including all calculations used in deriving margins

- Recommended for business users: Volume 00, 03
- Recommended for technical users: Volume 00, 01, 02, 03

Volume 00 – Post-trade Services Overview

- This document will provide a business overview of clearing, deal management and settlement functions
- It includes functionality available in the new ITaC solutions specific to equity derivatives and currency derivatives markets
- Will include high-level functionality as has been covered in a number of the TWG sessions
- Work is currently in progress to finalise and produce this document which will be published in due course

Business Functional / Overview Documents
Volume 00 – Post-trade Services Overview
Volume 01 – Post-trade EMAPI Common
Volume 02 – Post-trade EMAPI Clearing
Volume 03 – Post-trade Margin Methodology Specifications

Volume 01 – Post-trade EMAPI Common

Describes the semantics and syntax of the common or session/admin EMAPI protocol messages

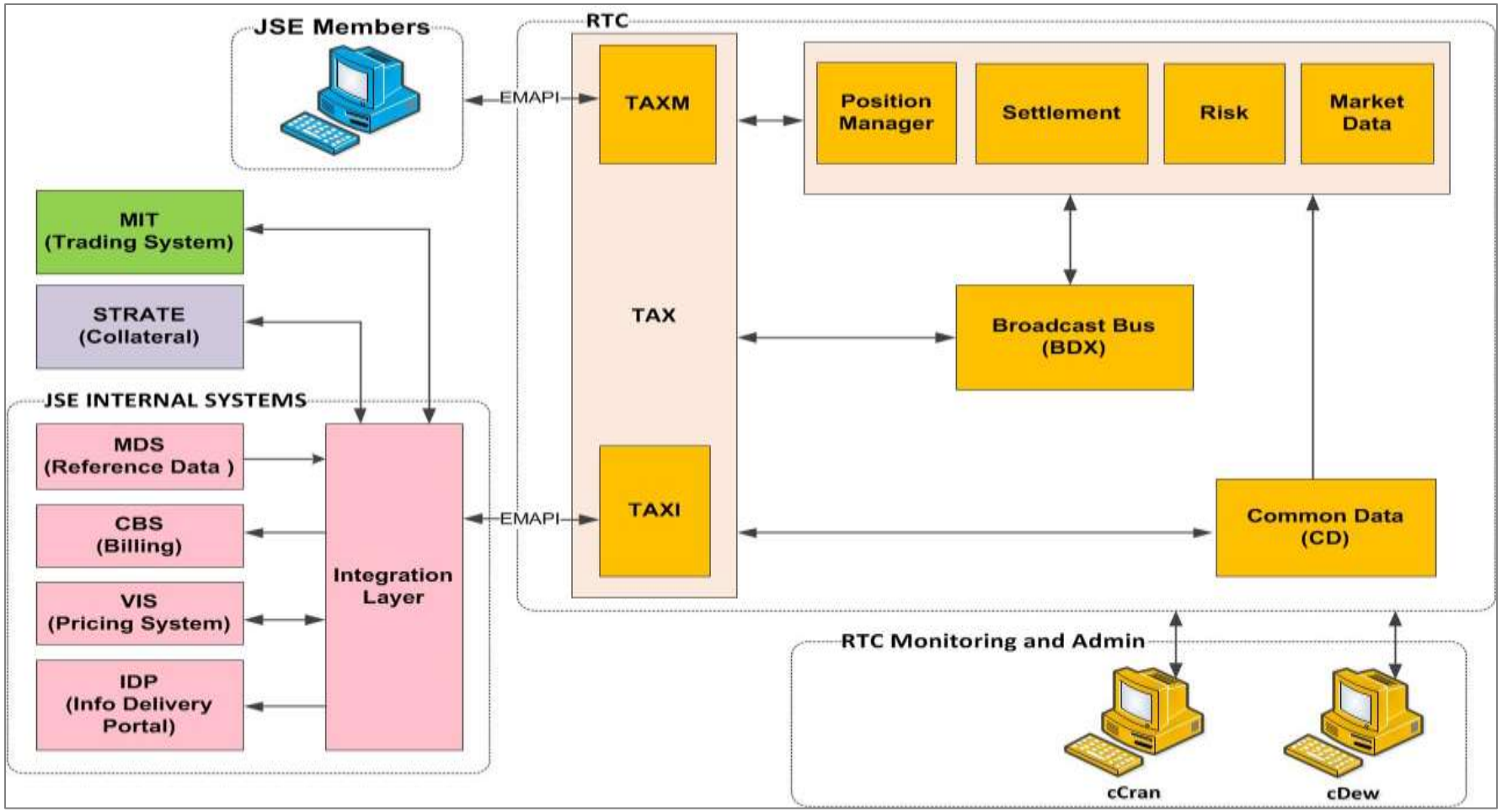
1. EMAPI Interface & RTC Architecture
2. EMAPI Message Structure and Data Types
3. Connectivity and authentication
4. Subscribing to RTC data
5. Reconciliation
6. Recovery and Failover

Business Functional / Overview Documents
Volume 00 – Post-trade Services Overview
Volume 01 – Post-trade EMAPI Common
Volume 02 – Post-trade EMAPI Clearing
Volume 03 – Post-trade Margin Methodology Specifications

Volume 01 - Post-trade EMAPI Common

EMAPI Interface & RTC Architecture

- Provides an overview of RTC EMAPI Interface architecture
- Provides an overview of related interfaces, components and systems



Volume 01 - Post-trade EMAPI Common

EMAPI Message Structure and Data Types

- Describes the EMAPI versioning approach to distinguish between mandatory versus optional features as well as clarity on backward compatibility in future releases
- Format of EMAPI Message
    - Message Header
    - Message Body
    - TagWire Encoding
- EMAPI Primitive Data Types (e.g. integer, string etc.)
- EMAPI Composite Types (e.g. array, records)

Volume 01 - Post-trade EMAPI Common

Connectivity and Authentication

- User identification codes (IDs) and system authentication
- RTC interface connectivity via TCP/IP using EMAPI (guaranteed request/reply messages)
- RTC Logon
- RTC Logoff
- Maintaining active connections to RTC - heartbeat
- Passwords authentication – in due course the JSE will publish the required password policies for renewing and maintaining clearing system passwords
- Handling concurrent connections

Volume 01 - Post-trade EMAPI Common

Subscribing to RTC data

- RTC data broadcast flows:
  - Reference Data Flow (e.g. instruments, accounts, etc.)
  - Account Event Flow (e.g. positions, deals)
  - Risk Event Flow (e.g. risk updates)
  - Give-up Event Flow
  - Settlement Event Flow (e.g. Clearing member balancing, collateral events)

- Establishing subscriptions to broadcast flows
- Requesting current and future data via Snapshot Subscriptions
- Requesting missed data via Replay Subscriptions

Volume 01 - Post-trade EMAPI Common

Reconciliation, Recovery and Failover

- Reconciliation of messages
  - Describes the process to reconcile the message sequence numbers received against RTC message sequence numbers published
  - Ability to recover missed sequence numbers by resending message requests

- Recovery and failover scenarios
  - Session recovery
  - Outstanding requests recovery
  - Fail over procedure to the JSE Remote DR site – still being finalised and will be communicated in due course

Volume 02 - Post-trade EMAPI Clearing

Describes the semantics and syntax of the clearing or application messages of the EMAPI protocol

1. RTC Overview and Clearing Lifecycle
2. Participant Structure
3. Broadcast Flows
4. Reference Data
5. RTC Account Setup
6. Risk Management
7. Trade input into RTC
8. Trade and Position Management
9. End of Day Processing
10. Collateral Management
11. Clearing Member Balancing
12. Settlement Management
13. Member and Client Transfers

Business Functional / Overview Documents
Volume 00 – Post-trade Services Overview
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Volume 03 – Post-trade Margin Methodology Specifications

Volume 02 - Post-trade EMAPI Clearing

RTC Overview and Clearing Lifecycle

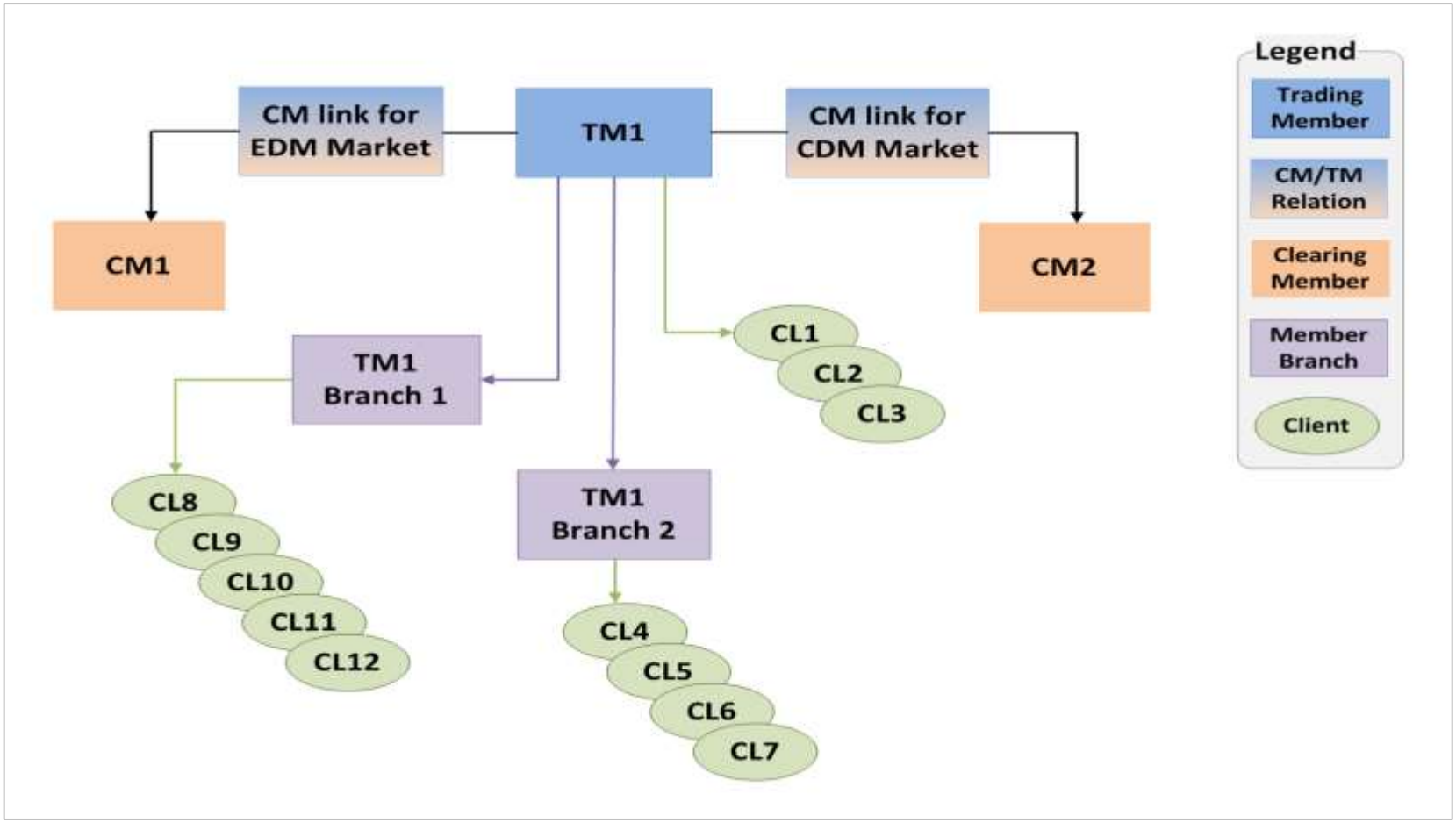
- Overview of services/functions provided by RTC
- Functional and Integration overview
- RTC System States
  - Open
  - End of Trade Management
  - End of Day
  - Post End of Day

- Clearing Lifecycle
  - Services/functions available during each RTC System State
  - Other key services/functions provided by other systems, e.g. Information Delivery Portal (IDP)

Volume 02 - Post-trade EMAPI Clearing

Participant Structure

- Description of member, branch and client structure as defined and used in RTC
- Process to add clearing members, trading members, branches and clients to RTC



Volume 02 - Post-trade EMAPI Clearing

Broadcast Flows

- Describes the differences between Request/Response messages versus broadcast events
- Broadcast/Event flows
  - Reference Data (e.g. instrument, market)
  - Account Events (e.g. account position event, account trade event)
  - Risk Events (e.g. risk node event)
  - Give-up Events (e.g. give-up event)
  - Settlement Events (e.g. daily account summary, CM balancing event)
- Availability of broadcast/event flows
- Subscribing to broadcast/event flows

Volume 02 - Post-trade EMAPI Clearing

Reference Data

- Reference data available via RTC vs IDP
- Daily full reference data downloads via RTC
- Subscribing to RTC reference data using EMAPI
- Reference data maintained by JSE and as published via the reference data flow
    - Clearing member (CM), Trading member (TM), Clearing member and Trading member links, Risk Nodes, Risk Parameters
    - Tripartite Agreements, Cash Accounts, Markets, Instruments, Tradable instruments
    - Calendars, Currencies, Country, Subscription Groups, etc.
- Reference data maintained via EMAPI by clearing and trading members – will also be published via the reference data flow
    - Member Clients
    - Cash Accounts (for foreign clients)
    - Position Accounts

Volume 02 - Post-trade EMAPI Clearing

RTC Account Setup

- Types of accounts in RTC:
  - Position Account types
    - House Main Account
    - House Sub Account
    - House Suspense Account
    - Client Main Account
    - Client Sub Account
    - Client Suspense Account
  - Collateral Accounts
  - Settlement Accounts
  - Cash Accounts
- Type of accounts created for CM, TM, branches and clients
- Certain accounts will be maintained by the JSE and others will be maintained by Clearing and Trading members

Volume 02 - Post-trade EMAPI Clearing

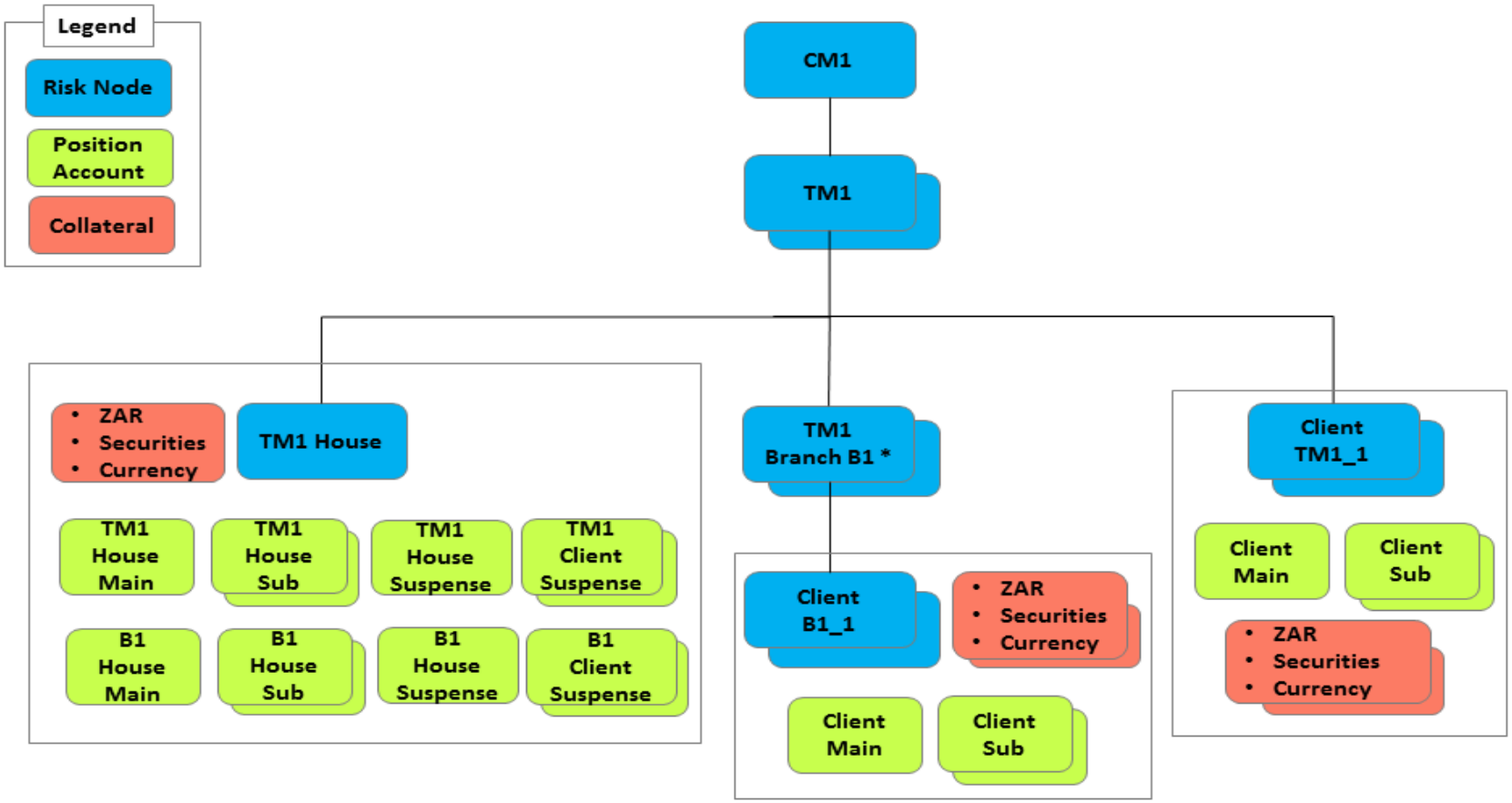
Risk Management

- Risk nodes are created at different levels of the member structure
- Subscribing to risk event flow via EMAPI
  - Initial margin, variation margin, portfolio risk, collateral value
  - Liquidation period add on, large position add on, j-span values
  - Additional margin, risk limit, risk alerts, settlement margin
  - Equity notional value, FX notional value
  - Collateral position values

- Setting Risk Limits via EMAPI (within those set by JSE)
- Setting additional margin percentages via EMAPI

Volume 02 - Post-trade EMAPI Clearing

Risk Management



Volume 02 - Post-trade EMAPI Clearing

Trade Input into RTC

- Trades types received real-time from the trading system into RTC, i.e.
  - On Book Trades (automated central order book trades)
  - Off Book Trades (reported trades)
  - Trade cancellations (of automatic or reported trades)

- Events published by RTC on receipt of trades from the trading system
  - Account Position Events
  - Account Trade Events
  - Risk Node Events

- Ability to identify the original trade from the trading system resulting in an Account Position Event and/or Account Trade Event

Volume 02 - Post-trade EMAPI Clearing

Trade and Position Management

- Trade/deal management period in RTC
- Events published as a result of trade management activities
  - Account Position Events and Account Trade Events

- Deal management functions available via EMAPI
  - Allocate a trade
  - Correct allocation error
  - Correct principle
  - Modify trade sub account
  - Modify position sub account
  - Accumulate trades
  - Assign trades
  - Allocate, cancel, accept, reject tripartite trades
  - Request early exercise of option position
  - Request abandon of an option position

Volume 02 - Post-trade EMAPI Clearing

End of Day (EOD) Processing

- Ability to identify the start and end of the EOD processing
- Various EOD scheduler states exist
  - Normal run
  - Re-run (on exception)
  - Intraday Margin Call (on exception)

- Events published during EOD processing

Volume 02 - Post-trade EMAPI Clearing

End of Day (EOD) Processing

- EOD processing steps include:
  - Generate and publish settlement prices
  - Generate and publish risk arrays
  - Margin calculations (variation, initial, additional and settlement margins)
  - Securities and FX collateral process
  - Funding interest for CFDs
  - Dividend payments for dividend neutrals
  - Interest on cash collateral
  - Booking fees
  - Generate payment instructions
  - Corporate actions and member transfers

- Clearing member balancing is performed at two stages during the EOD process

Volume 02 - Post-trade EMAPI Clearing

Collateral Management (EOD and Intraday)

- Managing collateral for margin requirements and stakeholders involved in this process
- End of day collateral functions available via EMAPI
  - Pledging of securities
  - Posting of Forex (FX)
  - Setting Minimum ZAR limit within JSE parameters
- Intraday collateral re-balancing for the purpose of withdrawals, releases, top-ups and substitutions
  - Events sent to CM notifying of start of collateral rebalancing
  - Messages used by CM to fetch withdrawals needing confirmation
  - Messages used by CM to confirm or reject withdrawals
- Sequence diagrams illustrating message flows between counterparts involved in EOD and intraday collateral management

Volume 02 - Post-trade EMAPI Clearing

Clearing Member Balancing (EOD)

- Process of balancing to clearing members during EOD
- Messages sent to CM notifying the start of the CM Balancing 1 and CM Balancing 2
- Content of member balances (account summary) sent to CM on settlement flows
- CM Balancing 1 for:
  - IM, AM, VM, Funding Interest and dividend payments
- CM Balancing 2 for:
  - Net Payments after collateral process, booking fees and payments from other systems
- Messages sent by CM to confirm balancing at each step above
- Sequence diagrams illustrating message flows

Volume 02 - Post-trade EMAPI Clearing

Settlement Management

- RTC manages settlement for:
  - Collateral based upon calculated margins (IM and AM)
    - Cash (ZAR)
    - Securities (can only cover IM)
    - Foreign currency (may cover IM and AM)
  - Variation margin
  - Funding interest
  - Dividend payments
  - Interest on cash collateral
  - Booking fees
  - Netted payments from existing markets
- Broadcast Events resulting from settlement management

Volume 02 - Post-trade EMAPI Clearing

Member and Client Transfers

- Transfer of members and clients by JSE
- Events published as a result of transfers on the broadcast flows
- Transfer scenarios, include:
  - Transfer of a client
  - Bulk client transfers
  - Transfer of a member
  - Single position transfer
- Required reference data and transaction data events are published prior to, during and after the transfer scenarios

Volume 03 – Post-trade Margin Methodology Specifications

Detailed description of the JSE margin methodology including all calculations used in deriving margins

- Work still in progress to draft and define document
- Provide detailed explanation of the margin calculations and how these will be applied once the RTC solution goes live
- First draft version of this document will be published during May/June 2016

Business Functional / Overview Documents
Volume 00 – Post-trade Services Overview
Volume 01 – Post-trade EMAPI Common
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Volume 03 – Post-trade Margin Methodology Specifications

Post-trade Services Documentation

Technical Specification Documents

Technical Specification Documents		
Document Name	**Format**	**Description**
EmapiTransactionsForMember	HTML	HTML file describing the syntax of all EMAPI protocol messages for market participants i.e. clearing and trading members
EmapiTransactionsForMember	XML	XML definition of all EMAPI protocol messages for market participants
EmapiTransactions	XSD	XML schema that EmapiTransactionsForMember.xml conforms to
EMAPI TagWire	PDF	Describes the syntax of the TagWire encoding of EMAPI message body

- Recommended for technical users

Technical Specifications Documents

EMAPI Protocol – HTML format: sample

Message: TaxLogonReq

Message ID: 63

Type: General Messages

Description: Request to the gateway to log in a member/user

Field no.	Field name (tag)	Mand.	Type (max length)	Comment
2	member	required	String	User's member firm
3	user	required	String	Mandatory user id. The user must belong to the member.
4	password	required	String	User's password
5	ticket		Long	Ticket received at pre-login
6	possDupSessId		Integer	Possible duplicate session id. If two sessions (that is, users) have the same possDupSessId it means that an unacknowledged request on one of the sessions can be resent on the other with the possDup flag set and the system will be able to resolve if it is a duplicate or not.
7	majorVersion		int	EMAPI major version. If any of the version fields is non-zero, the gateway will validate against the current EMAPI version.
8	minorVersion		int	EMAPI minor version. If any of the version fields is non-zero, the gateway will validate against the current EMAPI version.
9	microVersion		int	EMAPI micro version. If any of the version fields is non-zero, the gateway will validate against the current EMAPI version.

This request will normally return a response of type TaxLogonRsp.

- The HTML file contains the definition of all messages in the EMAPI protocol
- A separate HTML file for future updates/revisions will also be published containing messages/fields that have changed

Specifications Documents

EMAPI Protocol – XML format: sample

```
- <Message name="TaxLogonReq" type="rtcGeneral" messageId="63" returns="TaxLogonRsp"
  extends="RequestMessage">
      <Description>Request to the gateway to log in a member/user</Description>
    - <Field name="member" type="String" fieldNumber="2" mandatory="required">
          <Description>User's member firm</Description>
      </Field>
    - <Field name="user" type="String" fieldNumber="3" mandatory="required">
          <Description>Mandatory user id. The user must belong to the member.</Description>
      </Field>
    + <Field name="password" type="String" fieldNumber="4" mandatory="required">
    - <Field name="ticket" type="Long" fieldNumber="5">
          <Description>Ticket received at pre-login</Description>
      </Field>
    - <Field name="possDupSessId" type="Integer" fieldNumber="6">
          <Description>Possible duplicate session id. If two sessions (that is, users) have the same
              possDupSessId it means that an unacknowledged request on one of the sessions can be
              resent on the other with the possDup flag set and the system will be able to resolve if it is
              a duplicate or not.</Description>
      </Field>
    - <Field name="majorVersion" type="int" fieldNumber="7">
```

- The XML file contains the definition of all EMAPI protocol messages
- The XML file can be used for example to automate code generation
- A separate XML file for future updates/revisions will also be published containing messages/fields that have changed

Specifications Documents

EMAPI Protocol – XSD schema

```
<?xml version="1.0" encoding="UTF-8"?>
- <Emapi xsi:noNamespaceSchemaLocation="EmapiTransactions.xsd"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
      <Version build="not released" micro="0" minor="5" major="1"/>
      <Customer name="rtc"/>
    - <MessageTypes>
```

```
▼<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified">
  ▶<xs:element name="Emapi">...</xs:element>
  ▶<xs:element name="Version">...</xs:element>
  ▶<xs:element name="Customer">...</xs:element>
  ▶<xs:element name="MessageTypes">...</xs:element>
  ▶<xs:element name="MessageType">...</xs:element>
  ▶<xs:element name="Flows">...</xs:element>
  ▶<xs:element name="Flow">...</xs:element>
  ▶<xs:element name="Messages">...</xs:element>
  ▶<xs:element name="Message">...</xs:element>
    <xs:element name="Description"></xs:element>
  ▶<xs:element name="Field">...</xs:element>
  ▶<xs:element name="ConstantGroups">...</xs:element>
  ▶<xs:element name="ConstantGroup">...</xs:element>
  ▶<xs:element name="Constant">...</xs:element>
  ▶<xs:simpleType name="PrimitiveDataTypes">...</xs:simpleType>
  ▶<xs:element name="StatusCodes">...</xs:element>
  ▶<xs:element name="StatusCode">...</xs:element>
  </xs:schema>
```

- XSD schema file formally describes the elements of the XML file
- XSD file defines which elements and attributes are permitted and in which order
- XSD can be used to verify the XML file is valid and conforms to the protocol

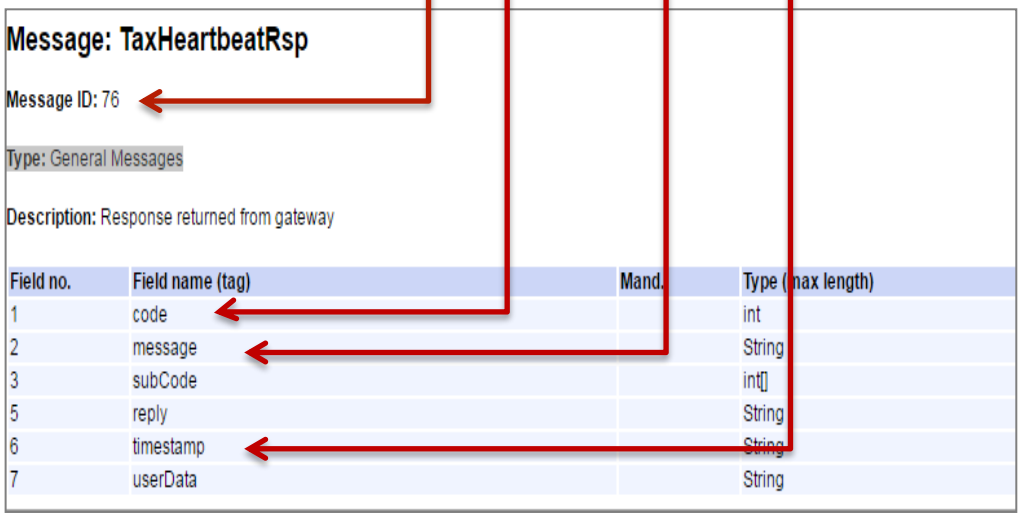
Specifications Documents

EMAPI TagWire

- EMAPI messages body is encoded using the TagWire encoding
- TagWire encoding ensures messages are sent in a compact manner to minimise latency and reduce bandwidth utilisation
- EMAPI TagWire specifications describes the syntax of the encoding format

- Example: **Heartbeat Message** (sent to gateway in order to verify a connection is alive)

Message Header	XMMA10000047 1200RW
TagWire Body	76=[1=3001|2=OK|6=2016-03-23T16:30:50.496|7=20]



Message: TaxHeartbeatRsp

Message ID: 76

Type: General Messages

Description: Response returned from gateway

Field no.	Field name (tag)	Mand.	Type (max length)
1	code		int
2	message		String
3	subCode		int[]
5	reply		String
6	timestamp		String
7	userData		String

Message Header			
Name	**Position**	**Length**	**Value**
magicSign	0	4	XXMA
headerVersion	4	2	10
msgSize	6	6	000047
clientTxRef	12	4	1200
msgType	16	1	R
contentType	17	1	W
compressed	18	1	

Post-trade EMAPI Protocol
Message Summary

Functional Area	Client-initiated	Server-initiated	TOTALS (approx.)
Reference Data (e.g. Instrument, Market, Country, Member)	13	28	**41**
Broadcast Events (e.g. AccountPositionEvent, RiskNodeEvent)	0	11	**11**
Trade Management (e.g. AllocateTradeReq, ApproveGiveUpReq,	17	12	**29**
Settlement Messages (e.g. ConfirmWithdrawalsReq, RegisterFXCollateralReq)	7	14	**21**
General Messages (e.g. TaxLogonReq, TaxHeartbeatReq, TaxStartSnapshot)	8	15	**23**
Constants, Enumerations (e.g. ExerciseStyle, InstrumentType, PositionReason)	0	45	**45**
TOTALS (approx.)	**45**	**125**	**170**

Agenda

- Post-trade Services Documentation for ITaC
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    - EMAPI TagWire Encoding

- JSE commissions
- Software Provider showcase day
- Questions?

JSE Commissions Solution

Agenda

- **Background**
- **Summary of Commissions Service**
- **Key Objectives and Features**
- **High-Level Overview and Flows**
- **General Mechanics**
- **Front-End Considerations**
- **Questions**
- **Appendix A – Commission Scenarios**

JSE Commissions Solution

Background

- Current practice of ‘taking a turn’ in the derivatives markets refers to **changing of the price when assigning or allocating** a trade to another trading member or client (direct or tripartite)
- Practice of ‘taking a turn’ during assigns and allocations **limits the market from seeing true price execution without built-in commissions, and does not lend itself to international best practice**
- As part of the ITaC Project 1 go-live, the **new JSE Real-Time Clearing (RTC) system will not include the ability to ‘take a turn’** during the assignment or allocation of trades
- On the back of decommissioning the ‘take a turn’ functionality, the JSE has investigated various alternative solutions that would assist the market in settling commissions for agency trades **by acting as a payment clearing house**

JSE Commissions Solution

Summary of Commissions Service

- Primary role of the exchange will be to act as a payment clearinghouse for settling daily net commission amounts across Clearing Members on T+1
- Daily commission amounts relating to give-up activity (i.e. between trading members and between trading members and tripartite clients) will be rolled up to the Clearing Member level and net amounts settled as part of the daily margin and fee settlement process on T+1
- Commission information will be provided to Trading and Clearing Members in order for them to do reporting, reconciliation, VAT invoicing as well as cash collections and payments at trading member and client levels
- Clearing Members, Trading Members and Independent Software Vendors (ISVs) will be required to develop the necessary front-end functionality to utilise the new JSE commission service
- Trading members will be required to actively monitor and manage their commission entries – JSE will not be liable for any mismanagement of commissions

JSE Commissions Solution

Key Objectives and Features

Key objectives

- Ensure that commission amounts are aggregated with daily margin and fee amounts and settled across Clearing Members on T+1
- To avoid trading members having to develop their own commission settlement solutions requiring invoicing of other members/tripartite clients to obtain commissions owed

Key features

- Provide the ability for trading members to capture their commissions against clients (direct and tripartite) and other trading members
- Provide trading members with the ability to cancel and reject incorrectly booked commissions
- Aggregate commission amounts to the CM level and settle net amounts across Clearing Members as part of the daily settlement process on T+1
- Provide clearing members and trading members with sufficient reporting information to facilitate their reconciliation, collections/payments and VAT invoicing processes

JSE Commissions Solution

High-level Overview

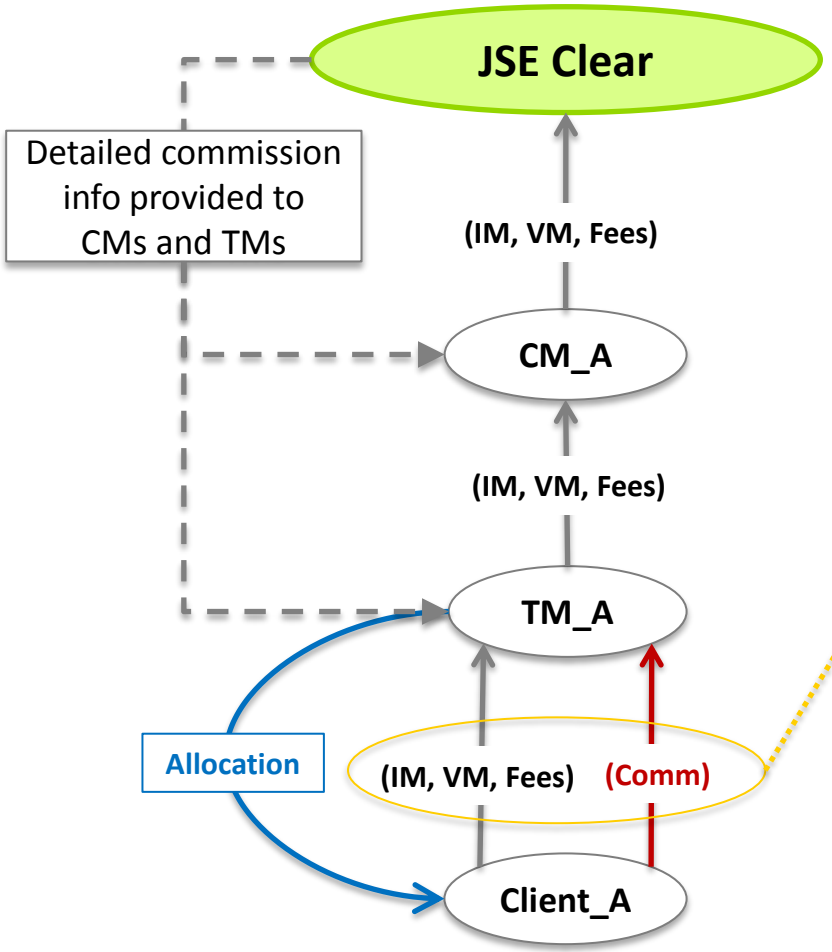
- Once trades are booked and deal managed, commission amounts are captured separately by initiating trading members
  - Entries can be captured at a deal level or aggregated by trading member or client
- Once captured, the commission is deemed confirmed i.e. no confirmation is required by the recipient trading member
- Recipient trading members are allowed to reject incorrect commissions captured against them before the end of the day
- Initiating trading members are allowed to cancel incorrect commission entries that were previously captured
- Commission notifications are sent to both the initiating and recipient trading members and associated Clearing Members upon a new, cancel or reject commission event
- Clearing Members and Trading Members will be able to download all commission entries at end-of-day in order to facilitate their reconciliation, invoicing and collection processes
- Commission amounts are aggregated to the CM level and net amounts are settled by the JSE as part of the daily settlement process

JSE Commissions Solution

Processing of Commissions on Agency Transactions

Allocation (Member to Direct Client)

Scenario: Member to Direct Client, under same Clearing Member



IM, VM, Fees and Comm to be rolled up, for all flows, into a single cash amount during settlement

Collection of amounts from the Client and payment thereof to the Trading Member typically done by Clearing Member

Comm *= Member Commission*

Fees *= JSE Booking Fees*

IM *= Initial Margin*

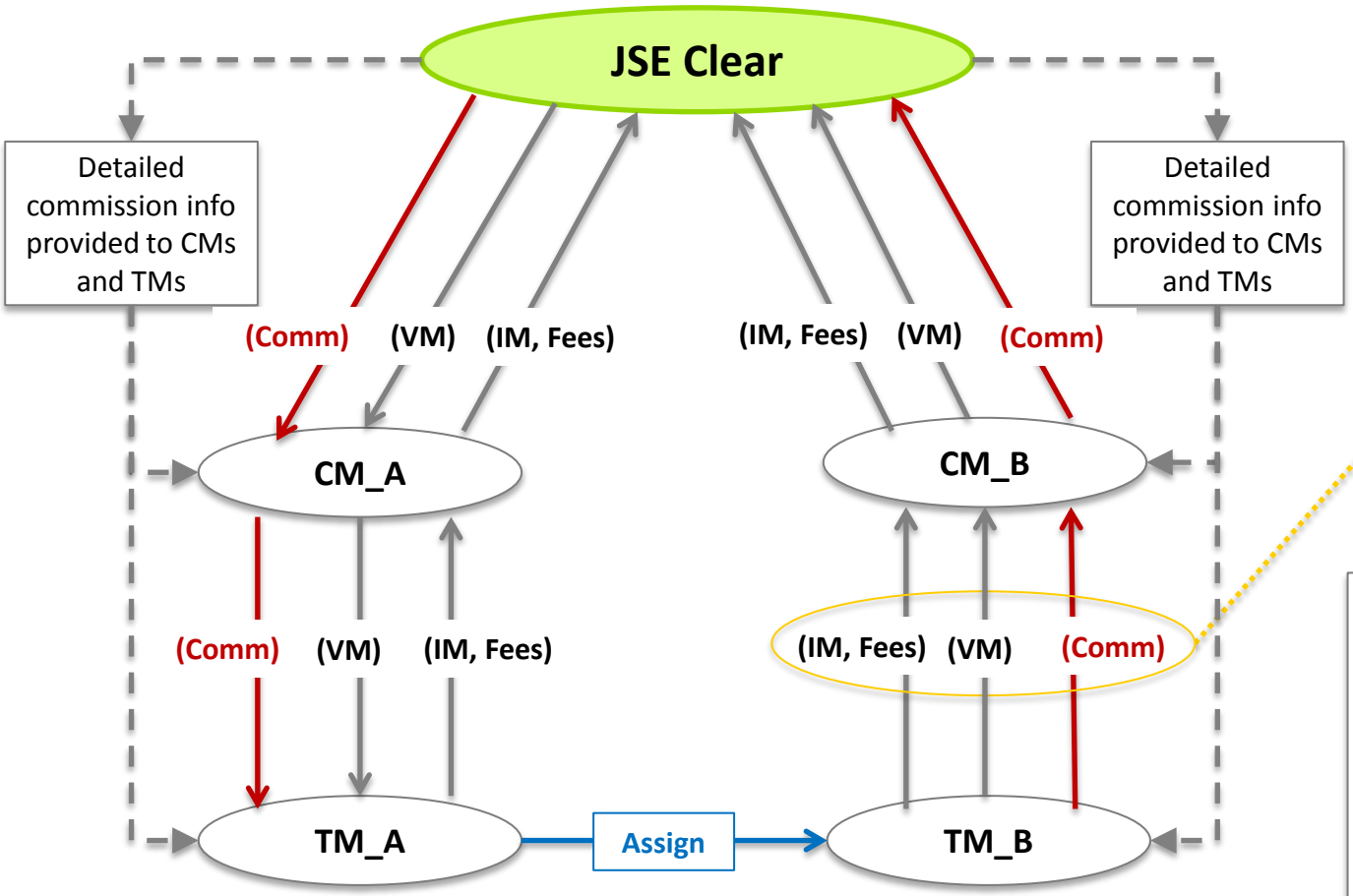
VM *= Variation Margin (assuming VM is being paid from TM_B to TM_A)*

JSE Commissions Solution

Processing of Commissions on Agency Transactions

Assign (Member to Member)

Scenario: Member to Member, under different Clearing Members



IM, VM, Fees and Comm will be rolled up, for all flows, into a single cash amount during settlement

Comm *= Member Commission*

Fees *= JSE Booking Fees*

IM *= Initial Margin*

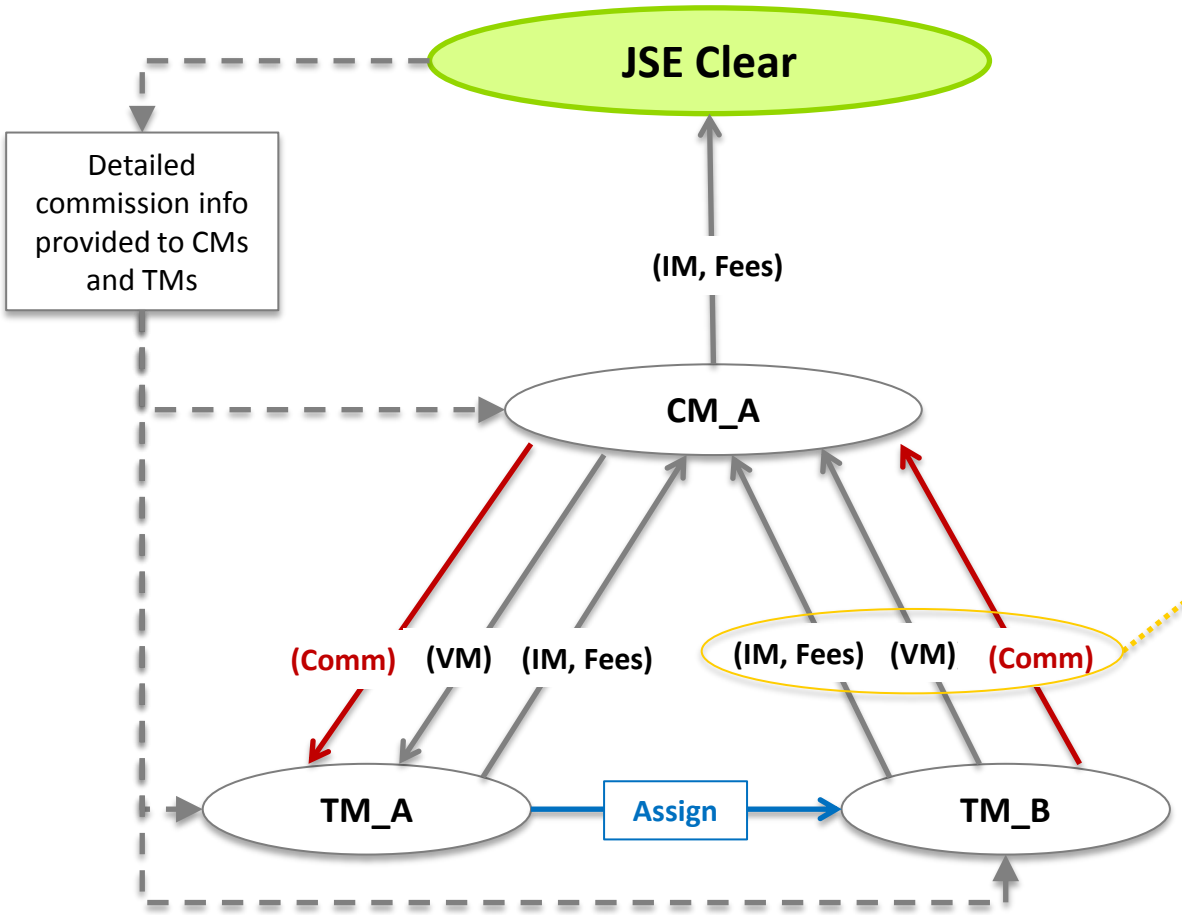
VM *= Variation Margin (assuming VM is being paid from TM_B to TM_A)*

JSE Commissions Solution

Processing of Commissions on Agency Transactions

Assign (Member to Member)

Scenario: Member to Member, under same Clearing Member



In the event that the TMs clear through the same CM, there will be no flow of commission between JSE Clear and the CM due to the zero net effect when rolling up to the CM level

IM, VM, Fees and Comm will be rolled up, for all flows, into a single cash amount during settlement

Comm *= Member Commission*

Fees *= JSE Booking Fees*

IM *= Initial Margin*

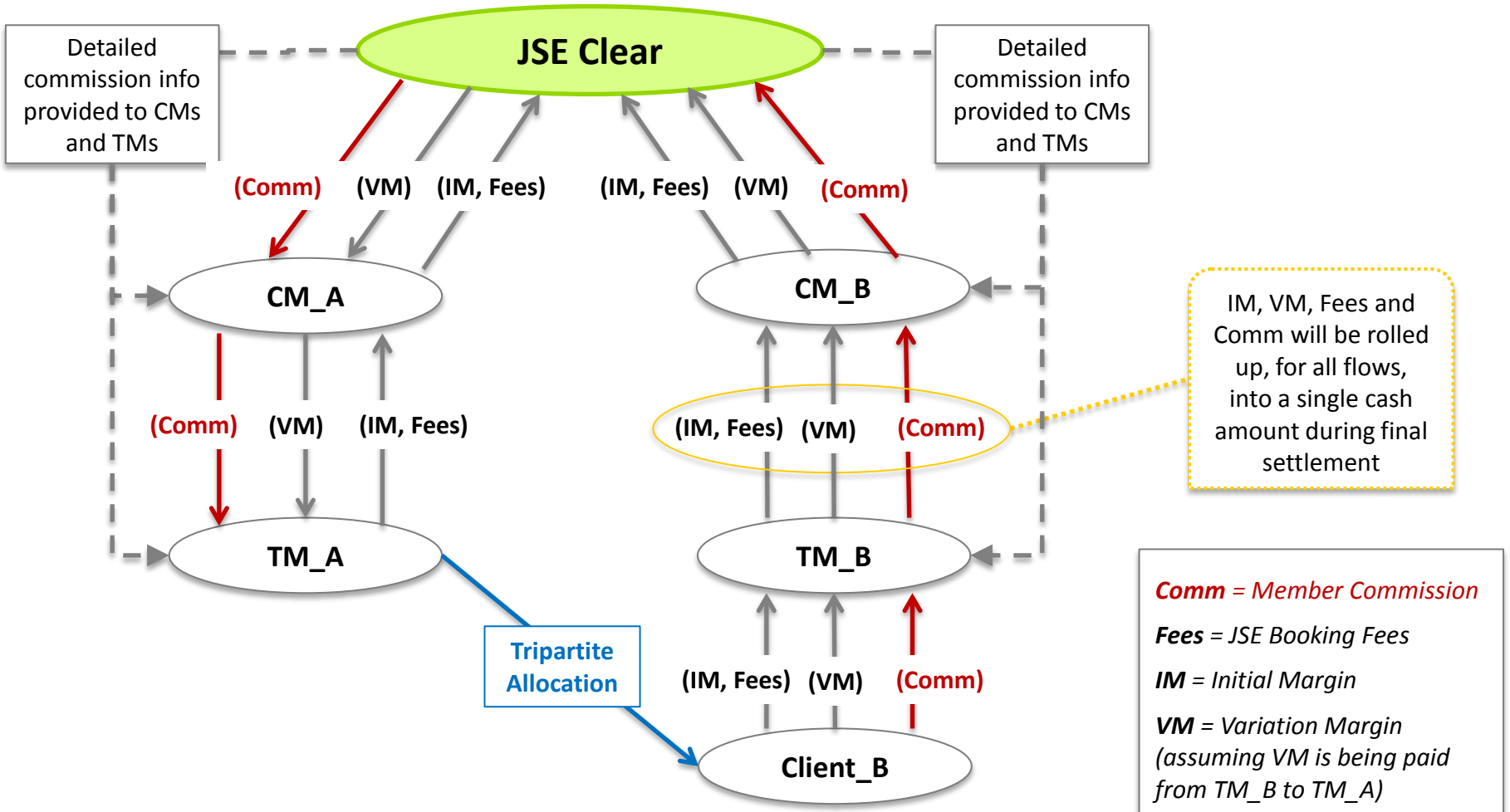
VM *= Variation Margin (assuming VM is being paid from TM_B to TM_A)*

JSE Commissions Solution

Processing of Commissions on Agency Transactions

Tripartite Allocation (Member to Tripartite Client)

Scenario: Member to Tripartite Client, under different Clearing Members

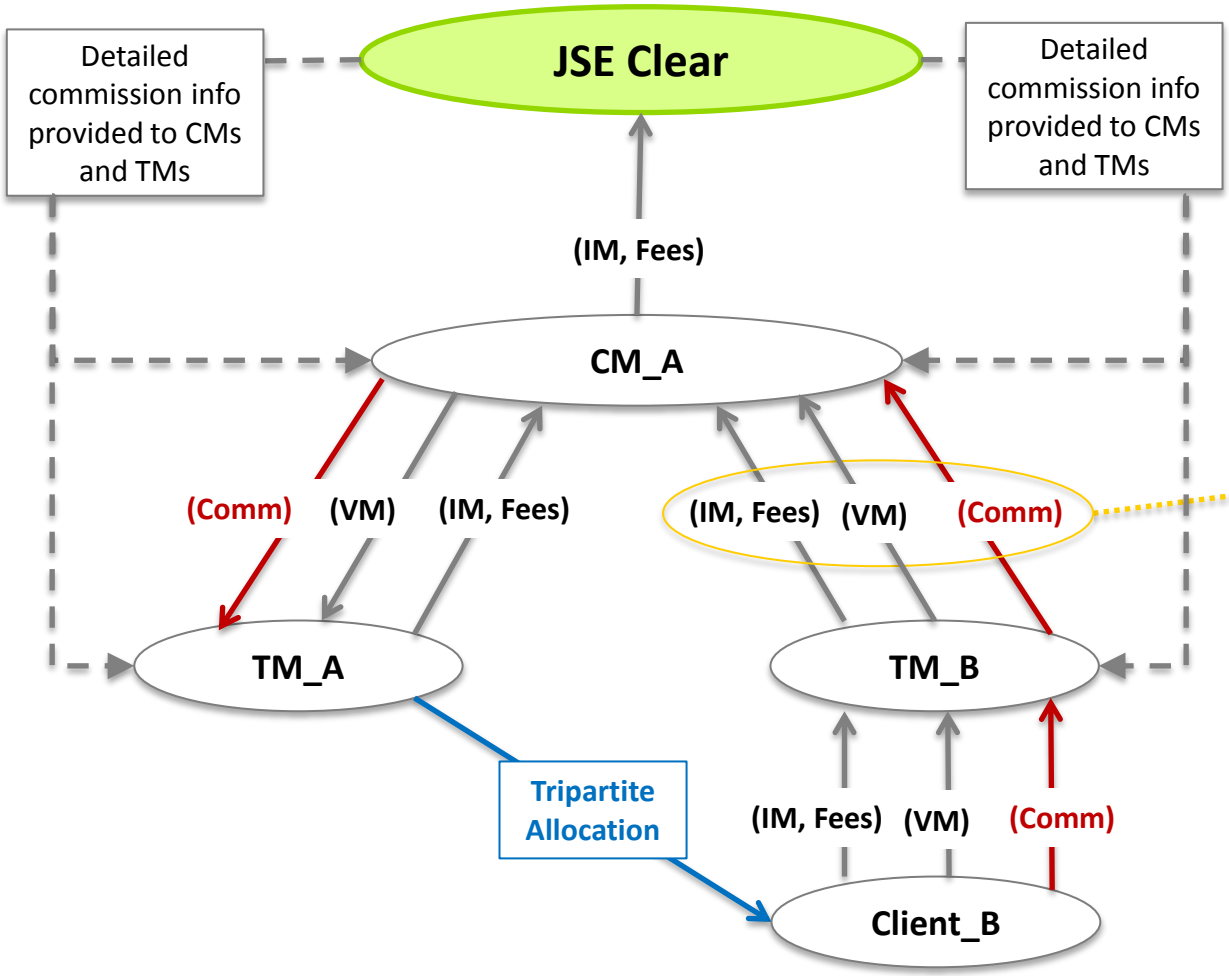


JSE Commissions Solution

Processing of Commissions on Agency Transactions

Tripartite Allocation (Member to Tripartite Client)

Scenario: Member to Tripartite Client, under same Clearing Member



In the event that the TMs clear through the same CM, there will be no flow of commission between JSE Clear and the CM due to the zero net effect when rolling up to the CM level

IM, VM, Fees and Comm will be rolled up, for all flows, into a single cash amount during final settlement

Comm *= Member Commission*

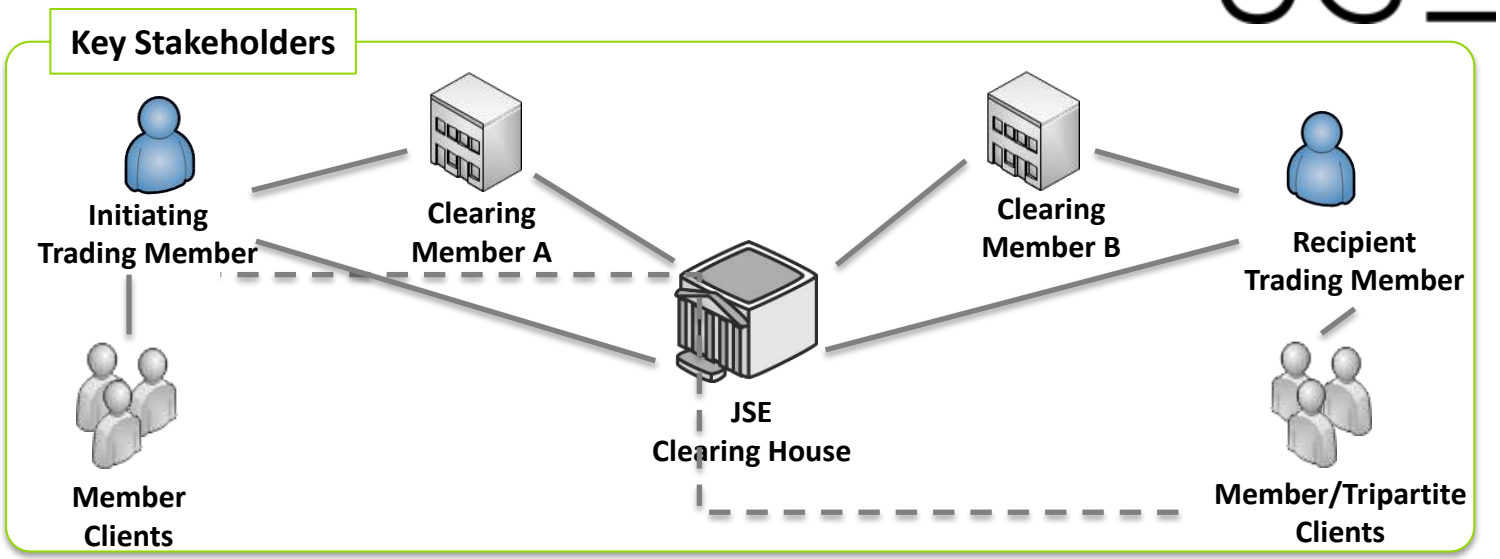
Fees *= JSE Booking Fees*

IM *= Initial Margin*

VM *= Variation Margin (assuming VM is being paid from TM_B to TM_A)*

JSE Commissions Solution

Key Stakeholders and Responsibilities



Key Responsibilities

- **Initiating Trading Member –** Calculating and capturing new commissions; Cancelling incorrect commissions;

  VAT invoicing of and cash collection from own Clients is typically done by the Clearing Member
- **Recipient Trading member –** Monitoring and rejecting incorrect commissions
- **Clearing Members –** Reconciling daily commissions; cash collection and payment between own Trading Members and Clients and associated VAT invoicing
- **JSE Clearing House –** Facilitate commission management between Initiating and Recipient Trading Members; Provide detailed commission information to Initiating and Recipient Trading Members and Clearing Members; Facilitate net settlement of commissions across Clearing Members on T+1

JSE Commissions Solution:

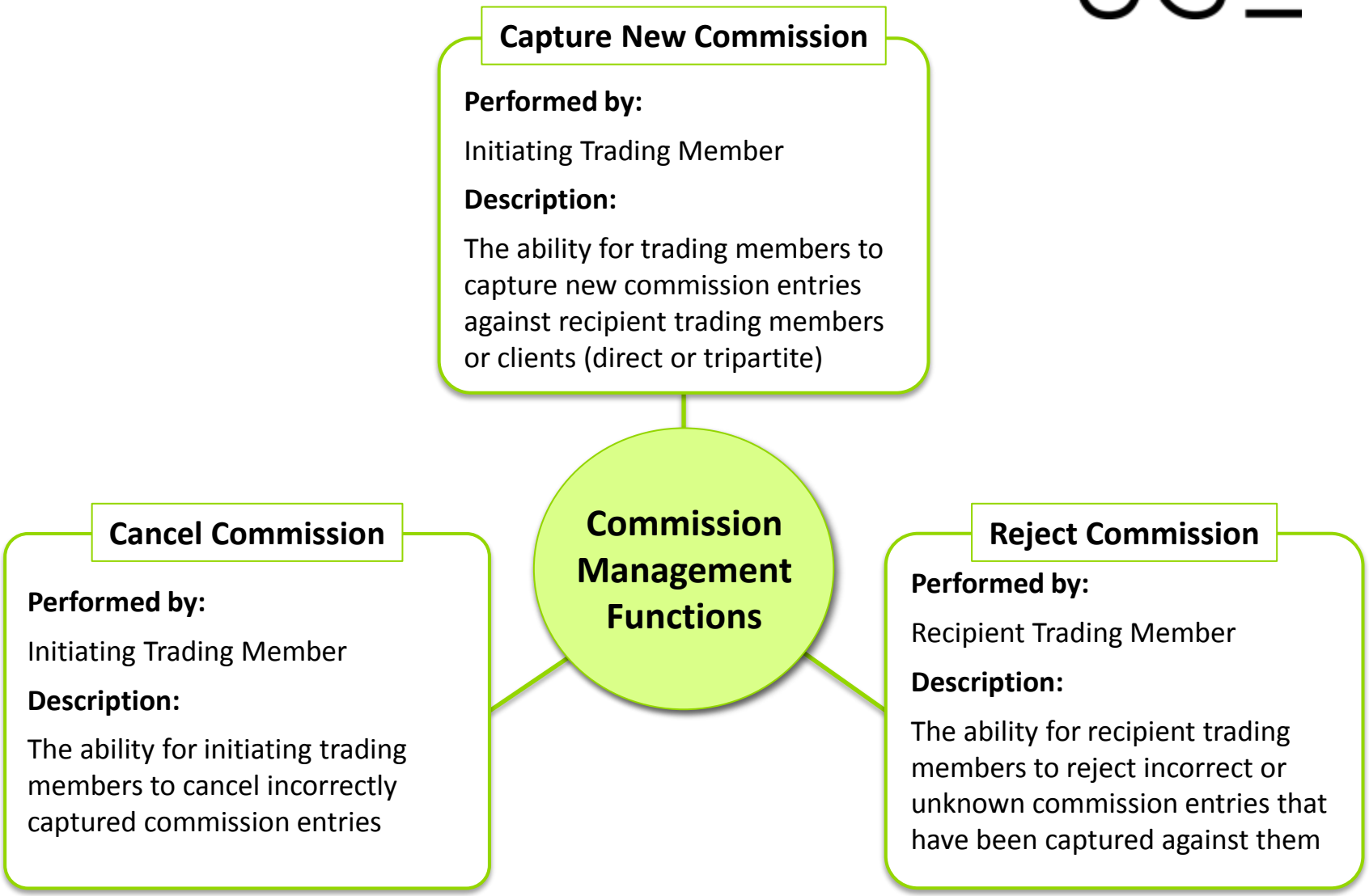
General Mechanics

General mechanics of the JSE commission solution:

Commission Management Functions	Functions required to capture and manage daily commission entries
Commission Downloads	Downloading of detailed commission entry information for reconciliation, invoicing and collection processes
Commission Processing Times	Daily window periods for managing and settling commission entries
EOD Balancing & Settlement	Daily balancing and settlement of commissions at end of day
Commission Reporting & Invoicing	Reporting and invoicing of commissions between trading members and clients

JSE Commissions Solution:

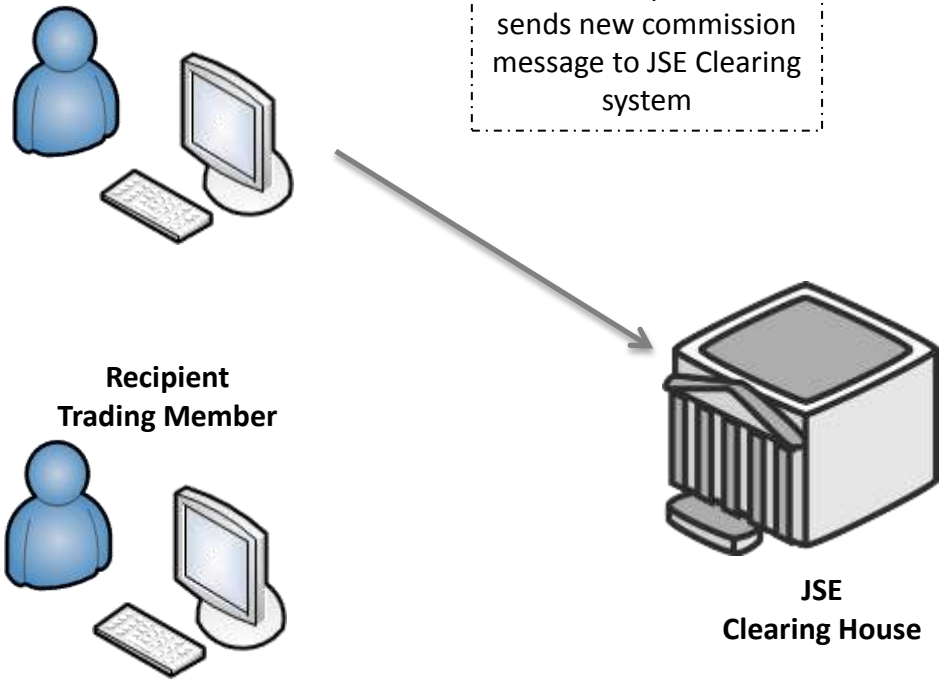
General Mechanics – Commission Functions



JSE Commissions Solution:

Commission Functions – Capture New Commission

Capture New Commission (Step 1 of 2):

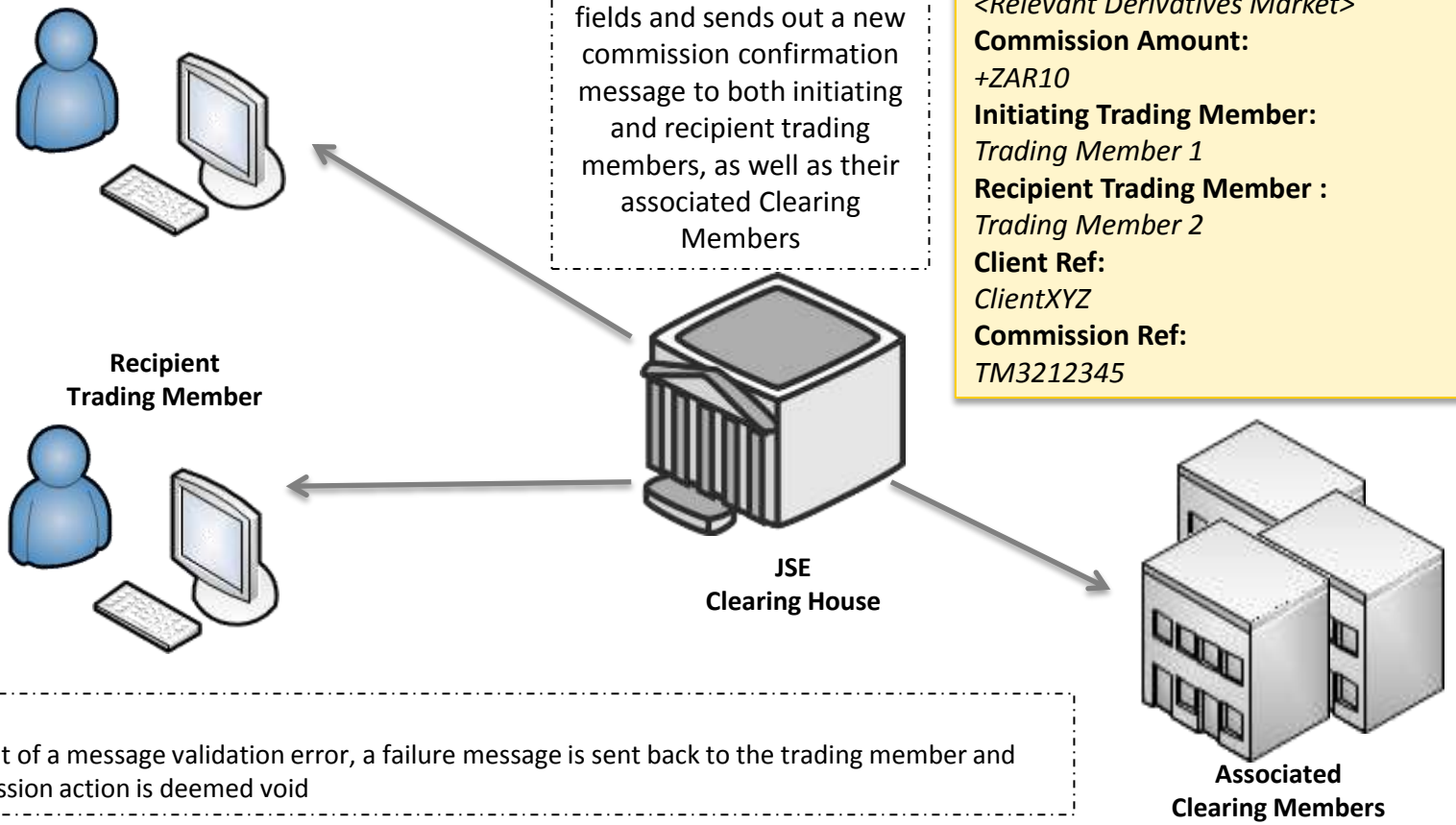


Example: New Commission Message
Market (mandatory):
<Relevant Derivatives Market>
Commission Amount (mandatory):
+ZAR10
Recipient Trading Member (mandatory):
Trading Member 2
Client Ref (optional):
ClientXYZ
Commission Ref (optional):
TM3212345

JSE Commissions Solution:

Commission Functions – Capture New Commission (cont.)

Capture New Commission (Step 2 of 2):



Example: New Commission Confirmation Message

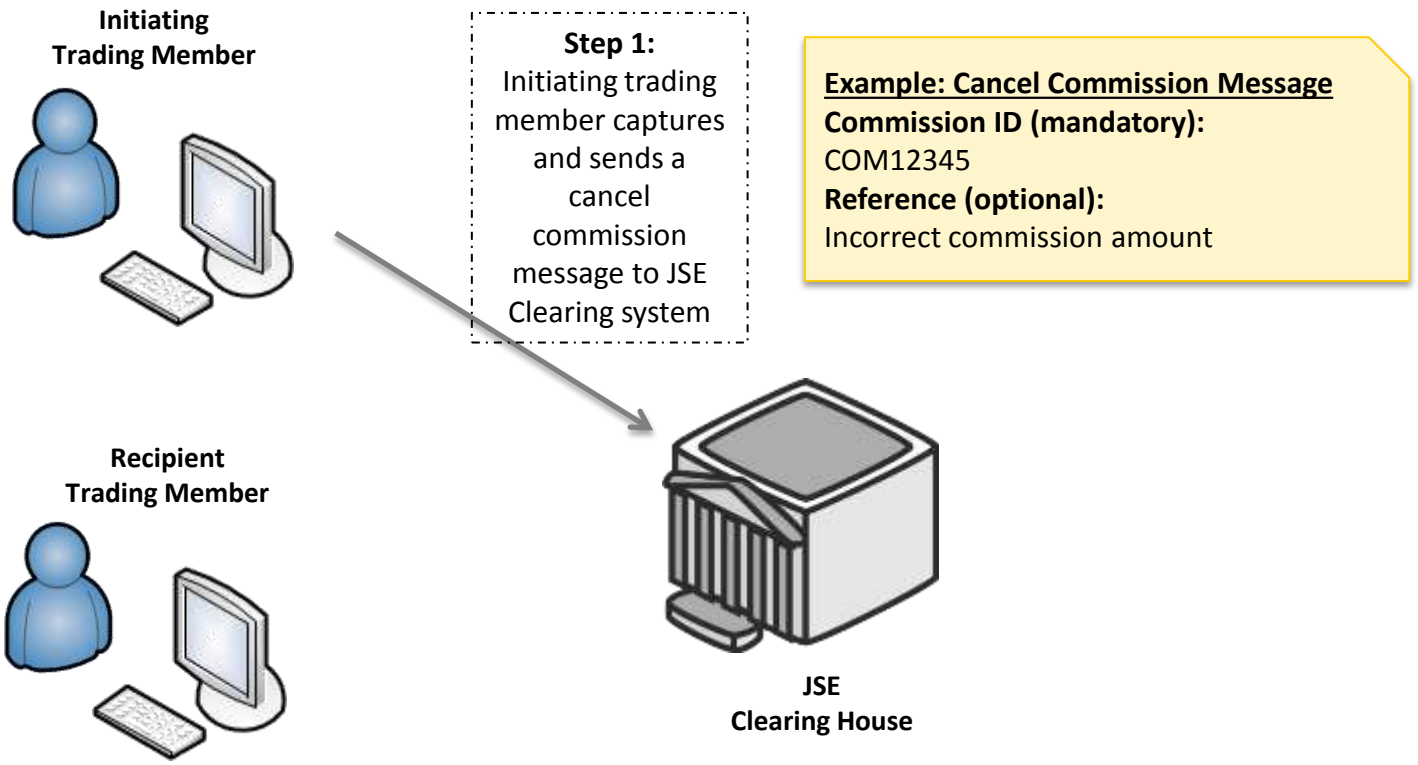
Commission ID:
COM12345
Market:
<Relevant Derivatives Market>
Commission Amount:
+ZAR10
Initiating Trading Member:
Trading Member 1
Recipient Trading Member :
Trading Member 2
Client Ref:
ClientXYZ
Commission Ref:
TM3212345

NOTE:
In the event of a message validation error, a failure message is sent back to the trading member and the commission action is deemed void

JSE Commissions Solution:

Commission Functions – Cancel Commission

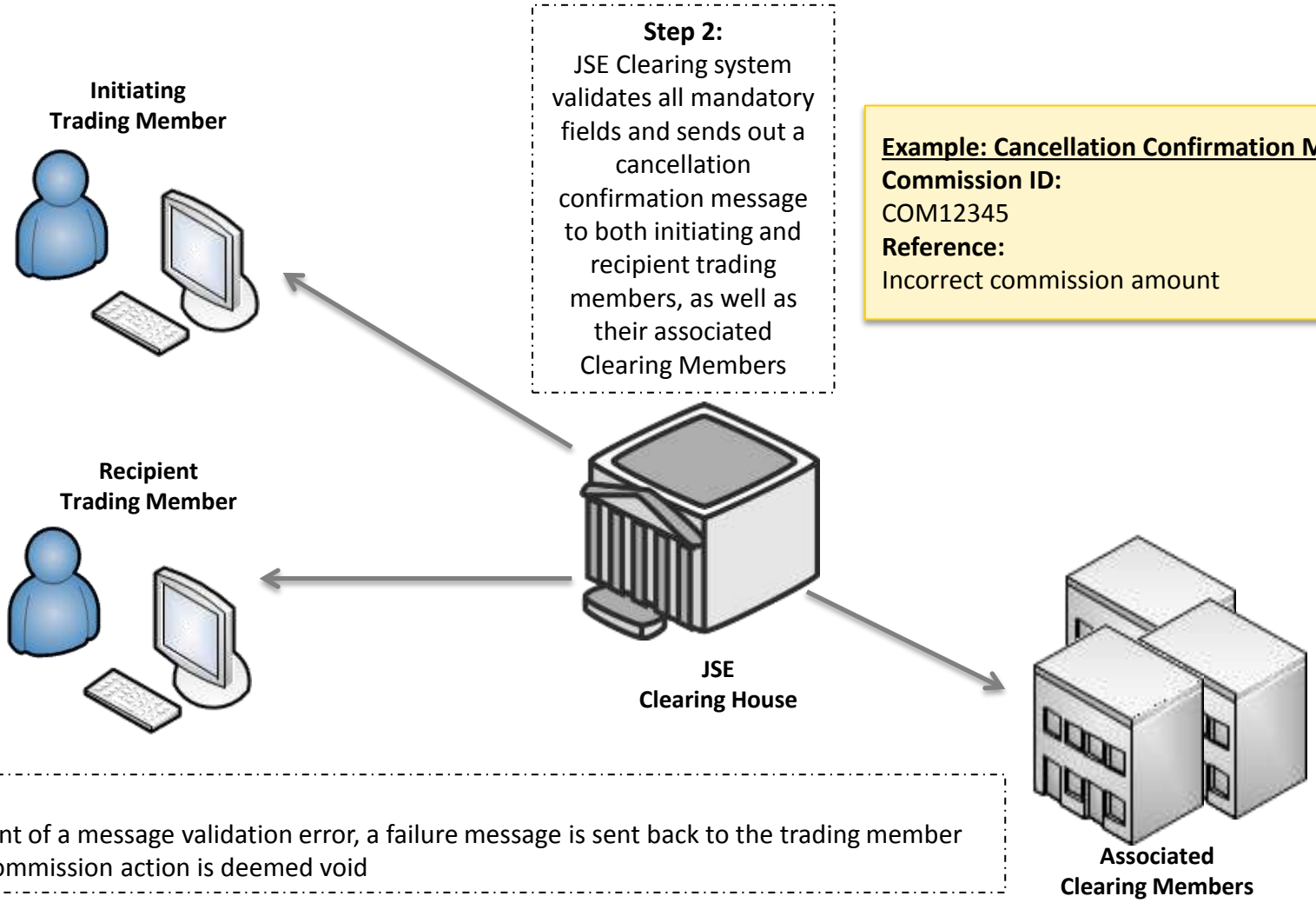
Cancel Commission (Step 1 of 2):



JSE Commissions Solution:

Commission Functions – Cancel Commission (cont.)

Cancel Commission (Step 2 of 2):

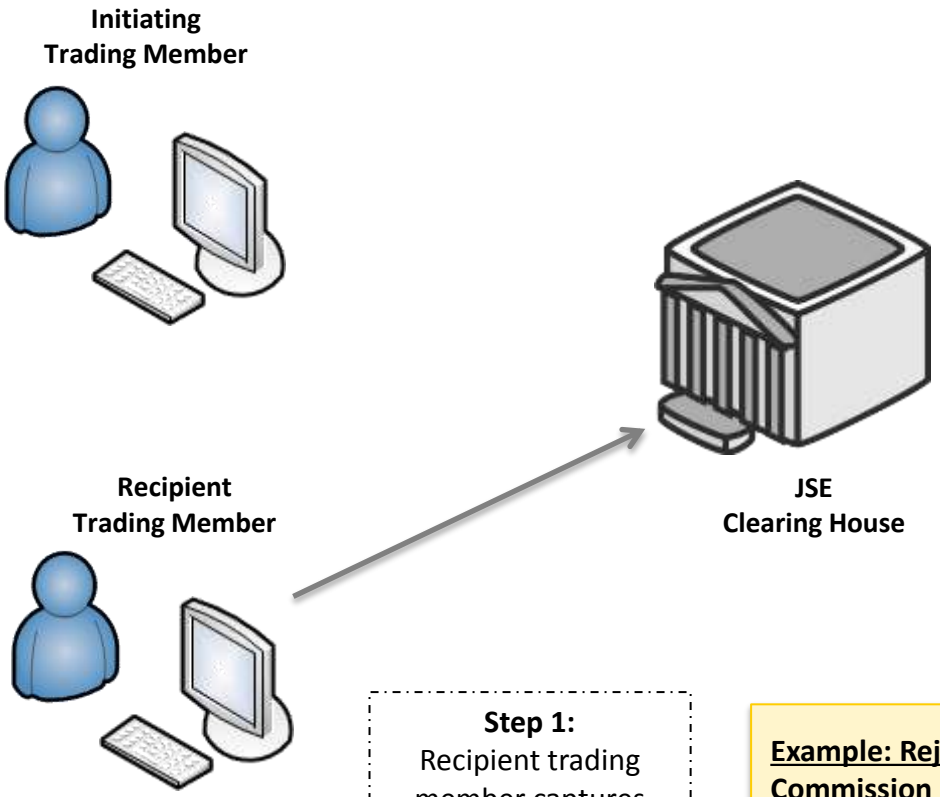


NOTE:
In the event of a message validation error, a failure message is sent back to the trading member and the commission action is deemed void

JSE Commissions Solution:

Commission Functions – Reject Commission

Reject Commission (Step 1 of 2):



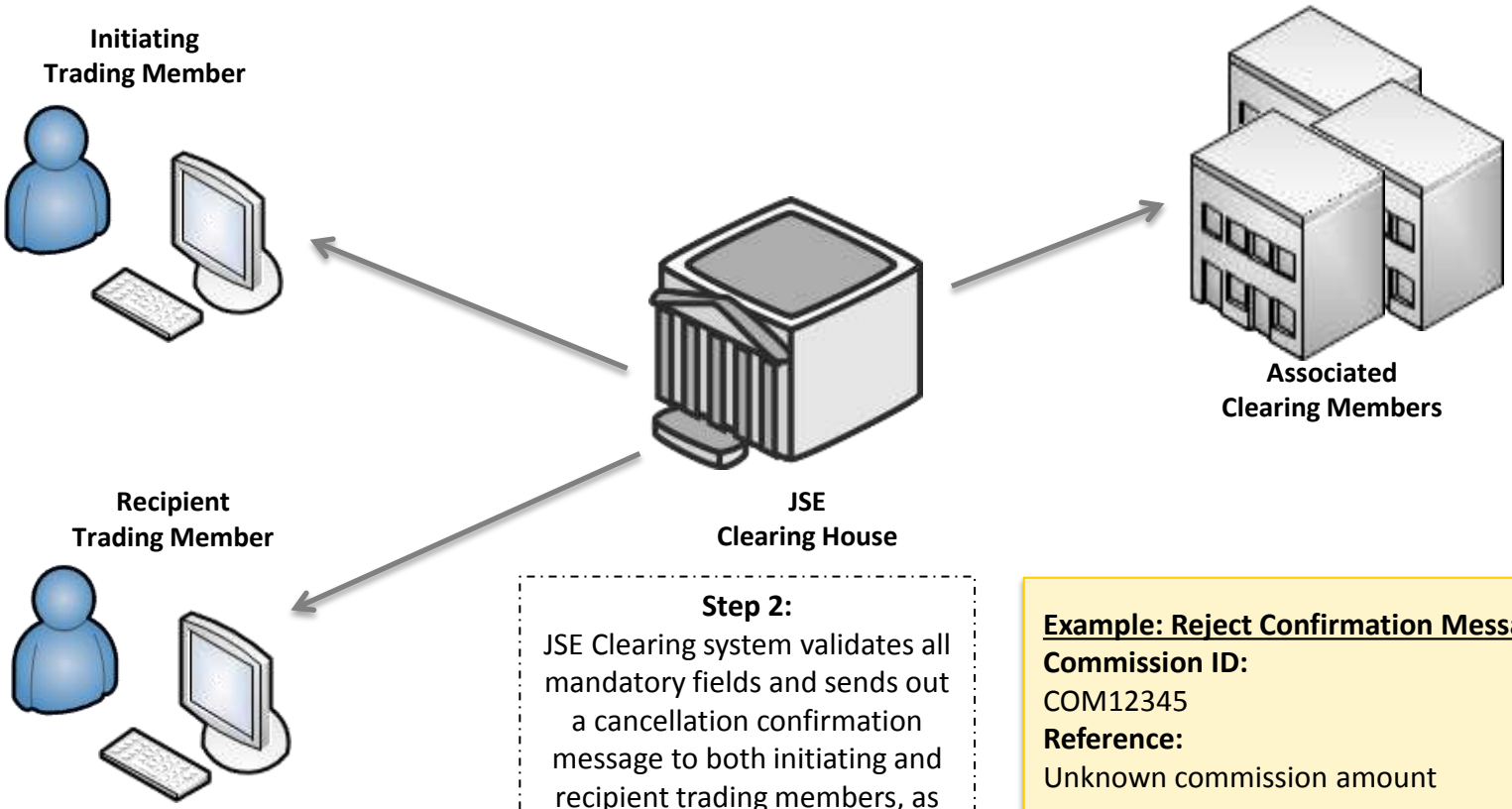
Step 1:
Recipient trading member captures and sends a reject commission message to JSE Clearing system

Example: Reject Commission Message
Commission ID (mandatory):
COM12345
Reference (optional):
Unknown commission amount

JSE Commissions Solution:

Commission Functions – Reject Commission (cont.)

Reject Commission (Step 2 of 2):



Step 2:
JSE Clearing system validates all mandatory fields and sends out a cancellation confirmation message to both initiating and recipient trading members, as well as their associated Clearing Members

Example: Reject Confirmation Message
Commission ID:
COM12345
Reference:
Unknown commission amount

NOTE:
In the event of a message validation error, a failure message is sent back to the trading member and the commission action is deemed void

JSE Commissions Solution:

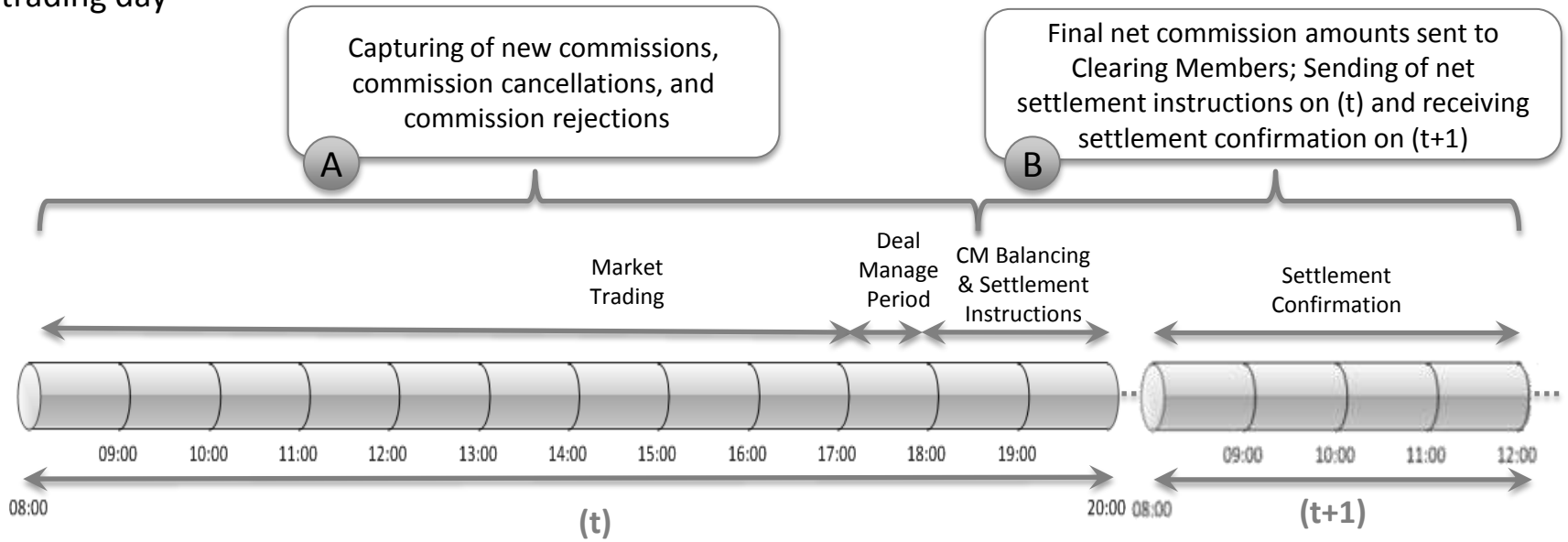
General Mechanics – Processing Times

Window Period A:

- All commission entries captured within this period will be settled as part of the daily settlement cycle. Any commissions not captured within this period, will need to be captured the following trading day
- Incorrect commissions that are not cancelled or rejected, will be settled as part of the daily settlement cycle. Commissions that were not corrected, can be corrected by capturing a new commission for the delta amount the following trading day
- Post the Deal Management Period, a short window period will be allowed to finalise new commission entries and reject any incorrect\unknown commissions

Window Period B:

- Clearing members to receive final net commission amounts as part of the daily balancing cycle. Net commission amounts across Clearing Members to be settled on (t+1)

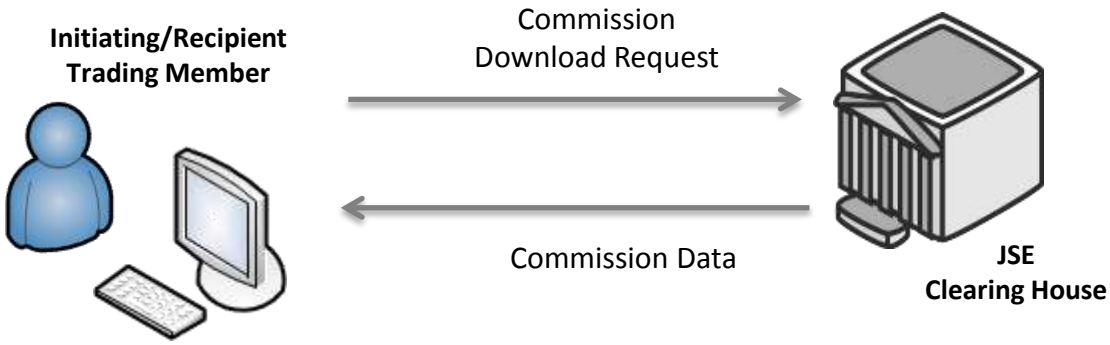


JSE Commissions Solution:

General Mechanics – Commission Downloads

Commission Downloads

- In addition to the real-time commission confirmation messages received upon new, cancelled and rejected commissions, recipient and initiating trading members , as well as associated clearing members, will be able to download all their commissions data during the course of the trading day and at EOD
- Commission entries will include all necessary information in order for trading members and clearing members to do reporting, reconciliations, VAT invoicing and cash collection down to client level
- Commission downloads will also include canceled and rejected commission entries
- Commission downloads will only include commission entries for the day – entries to be refreshed at the start of each day

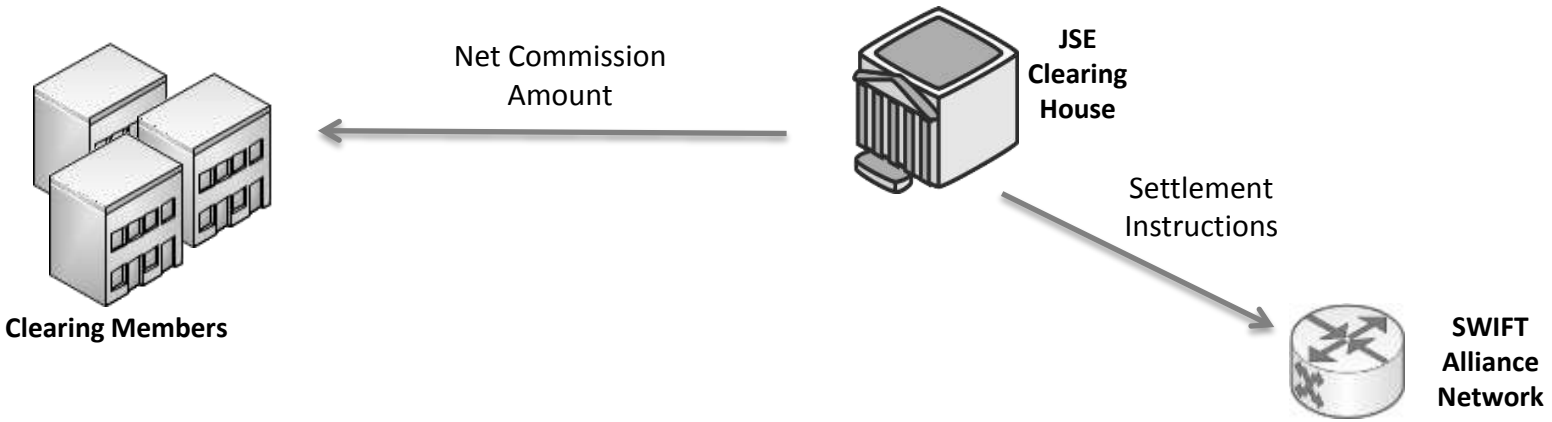


JSE Commissions Solution:

General Mechanics – End-of-Day (EOD) Balancing and Settlement

End 0f Day (EOD) Balancing and Settlement

- As part of the daily end of day process, the JSE clearing system will send the final net commission amounts to the Clearing Members
- The net commission amounts will be sent as part of the second balancing step that includes the booking fees and interest on margin amounts - first balancing is for daily margin amounts
- Once the second balancing process is complete, the settlement process is kicked off and all commission amounts are rolled-up with other cash amounts and settlement instructions are sent out

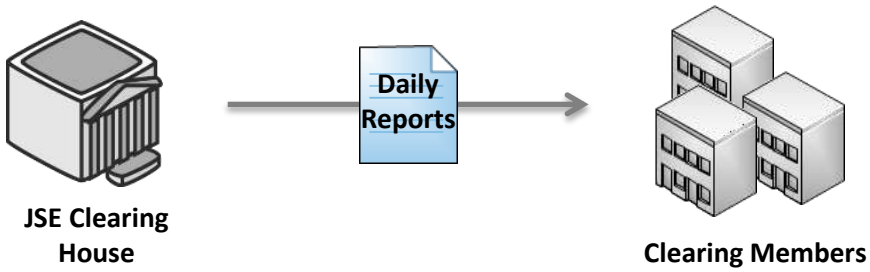


JSE Commissions Solution:

General Mechanics – Reporting and Invoicing

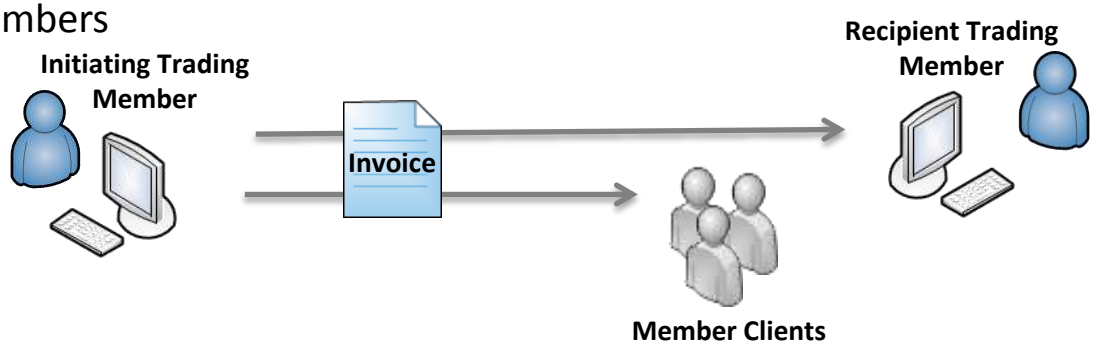
Reporting

- Net commission amounts will be included in the Daily Account Summary reports that are available to each Clearing Member
- Information in the Daily Account Summary report will be at the trading member level



VAT Invoicing

- Trading Members (or Clearing Members on their behalf) are responsible for generating and sending VAT invoices, for relevant fees and commissions, to their clients and associated trading members



JSE Commissions Solution:

Front-End Considerations

In order to fully utilise the new JSE commission service, Clearing Members, Trading Members and supporting ISVs will be required to develop the necessary front-end capabilities to manage their commissions. Depending on the cash collection and invoicing arrangements between the Clearing Member and Trading Member, some of the key developments may include:

Clearing Member Front-Ends:

- Ability to receive and monitor real-time commission confirmation messages across trading members and clients
- Ability to aggregate commission amounts for each trading member and determine their net commission amount to be settled
- Ability to receive and reconcile net commission amounts (payable/receivable) from the JSE and perform necessary VAT invoicing and cash collection where applicable

Trading Member Front-Ends:

- Ability to automatically calculate and send new commission entries to the JSE, based on member defined commission structures (this can either be done in bulk at EOD or real-time as trades are booked and deal managed)
- Ability to cancel and reject incorrect commission entries
- Ability to actively monitor and alert (where and when applicable) the validity of all new commissions booked against the trading member or trading member's clients
- Perform necessary detailed commissions reporting and reconciliations at end of day
- Ability to generate and send necessary VAT invoices to trading members and clients

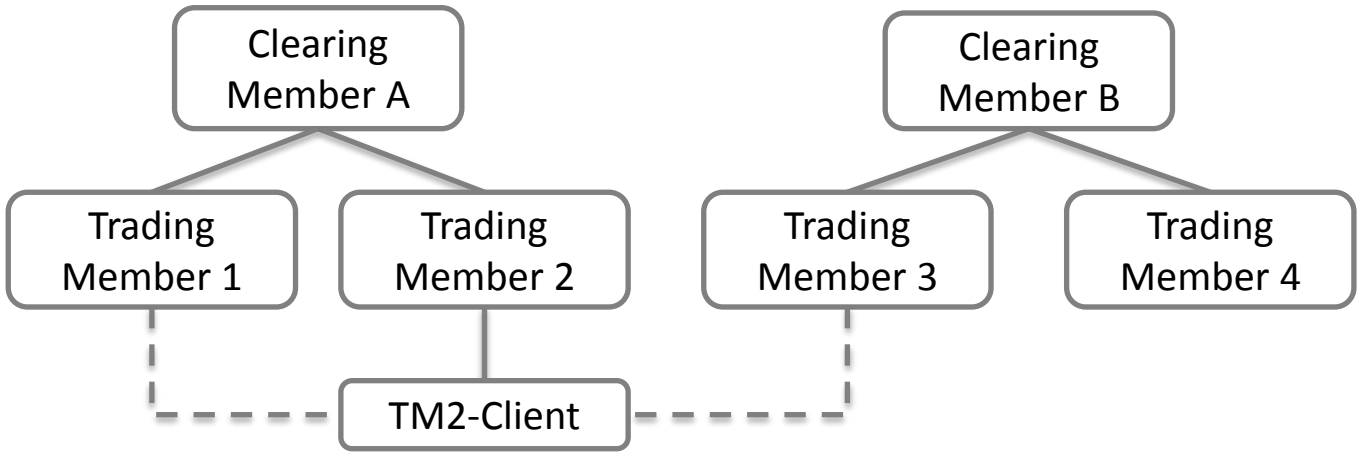
JSE Commissions Solution

Questions

JSE Commissions Solution:

Appendix A – Commission Scenarios

Market Structure:

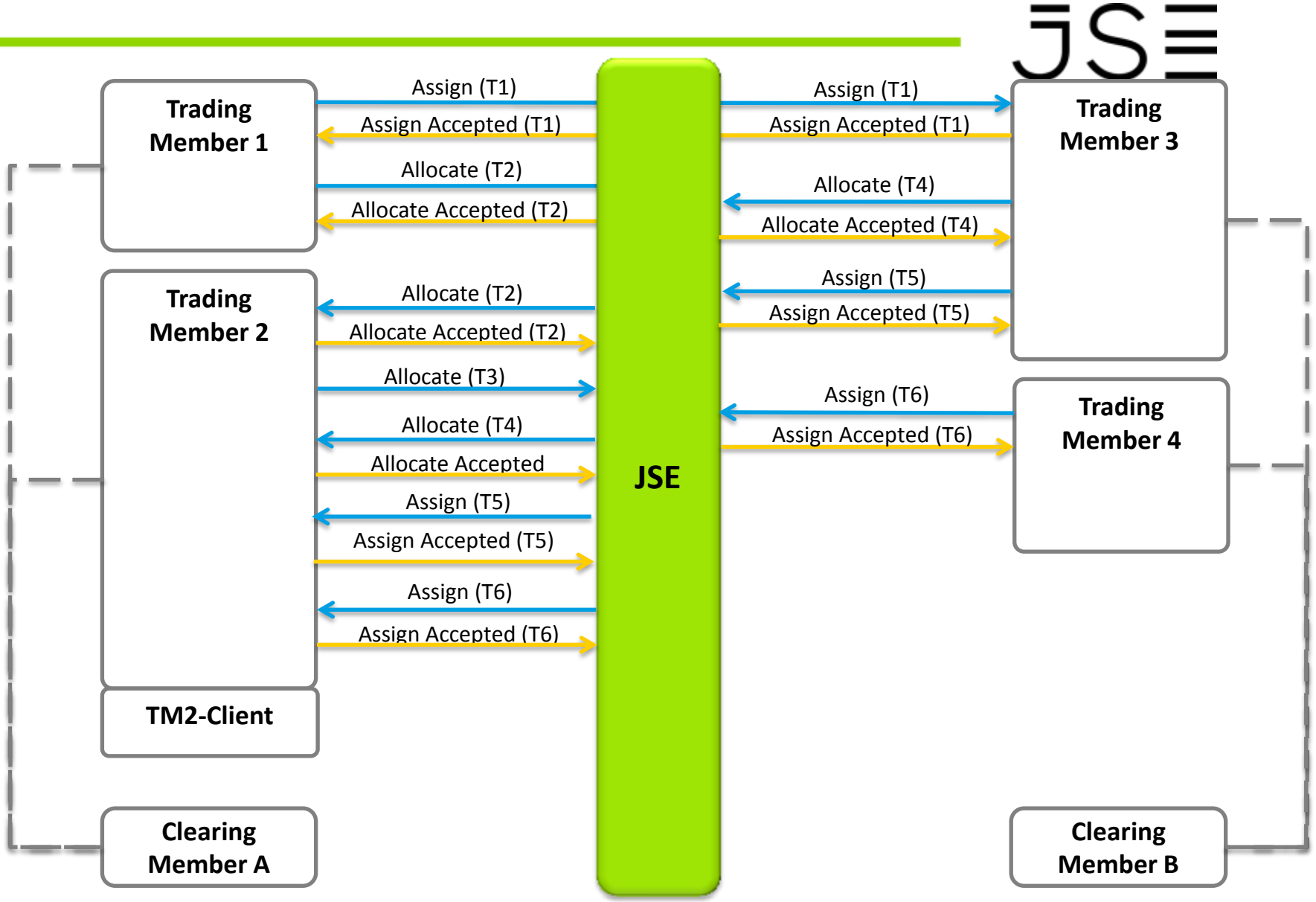


Scenarios:

a. TM1 assigns trade (T1) to TM3 and charges a R10k commission.
b. TM1 tripartite allocates trade (T2) to TM2-Client and charges a R20K commission
c. TM2 allocates trade (T3) to TM2-Client and charges a R5k commission
d. TM3 tripartite allocates trade (T4) to TM2-Client and charges a R30K commission
e. TM3 assigns trade (T5) to TM2 and charges a R50k commission
f. TM4 assigns trade (T6) to TM2 and charges a R15k commission

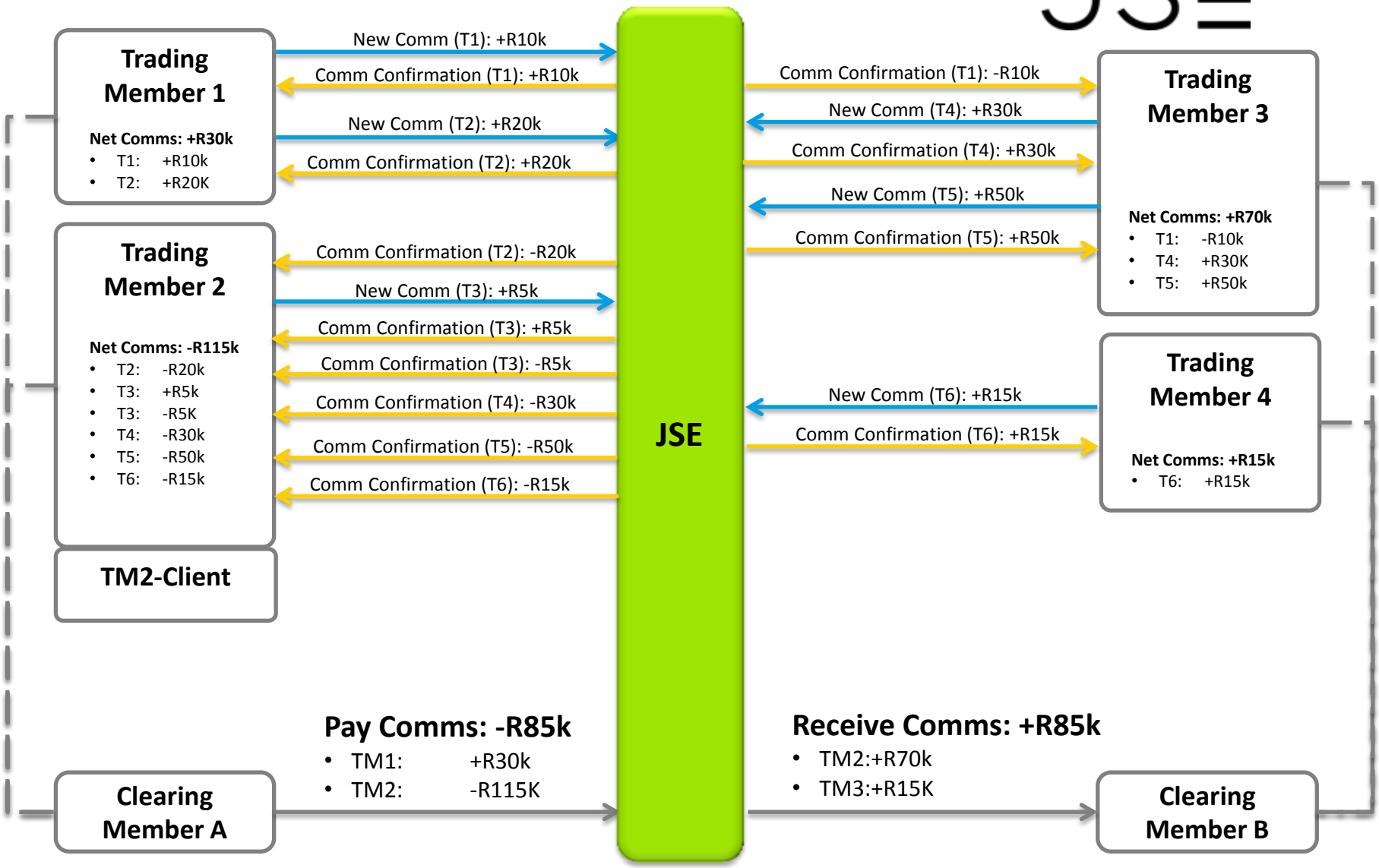
JSE Commissions Solution:

Appendix A – Commission Scenarios: Trade Flows



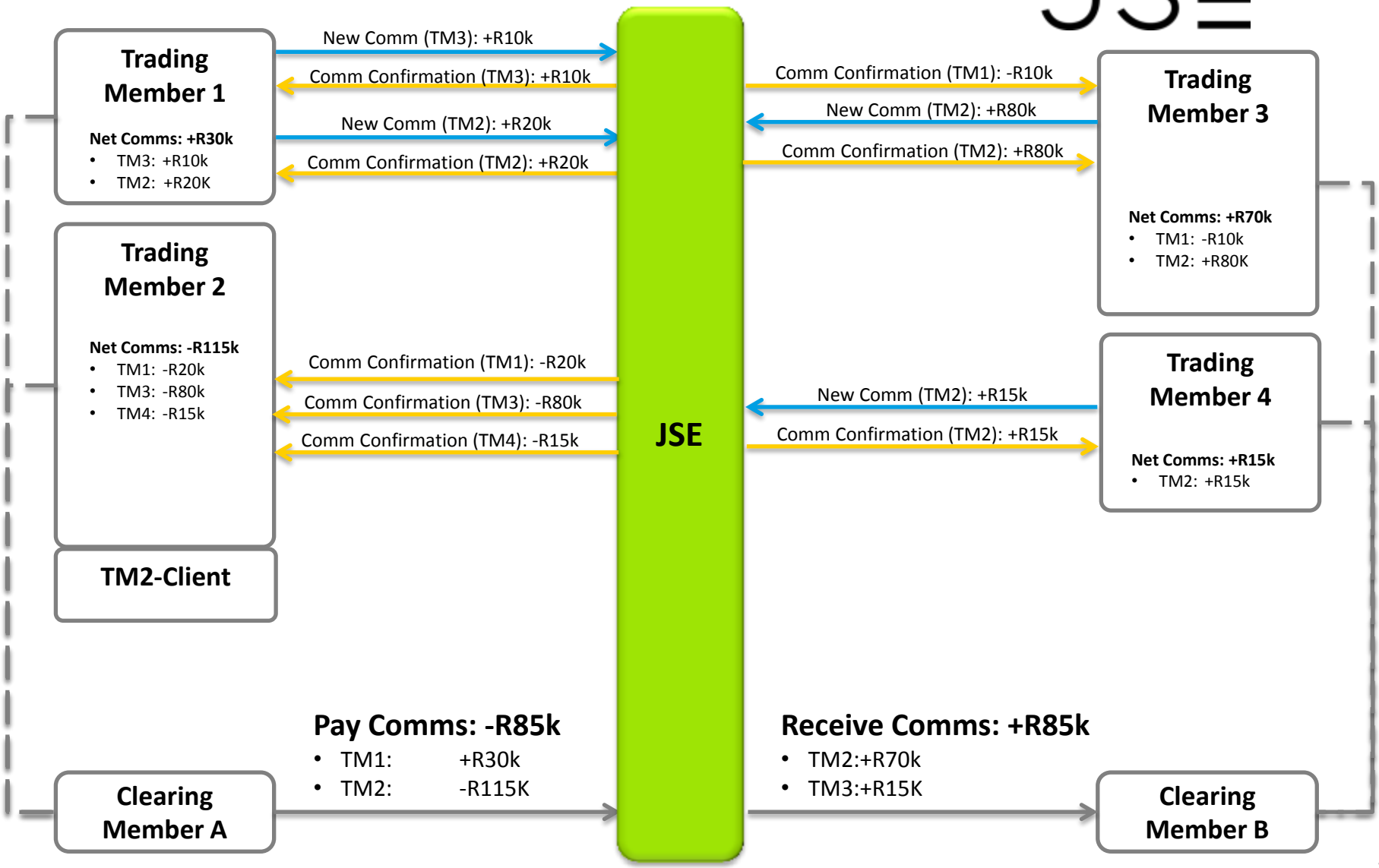
JSE Commissions Solution:

Appendix A – Commission Scenarios: Commission Flows (booked @ trade level)



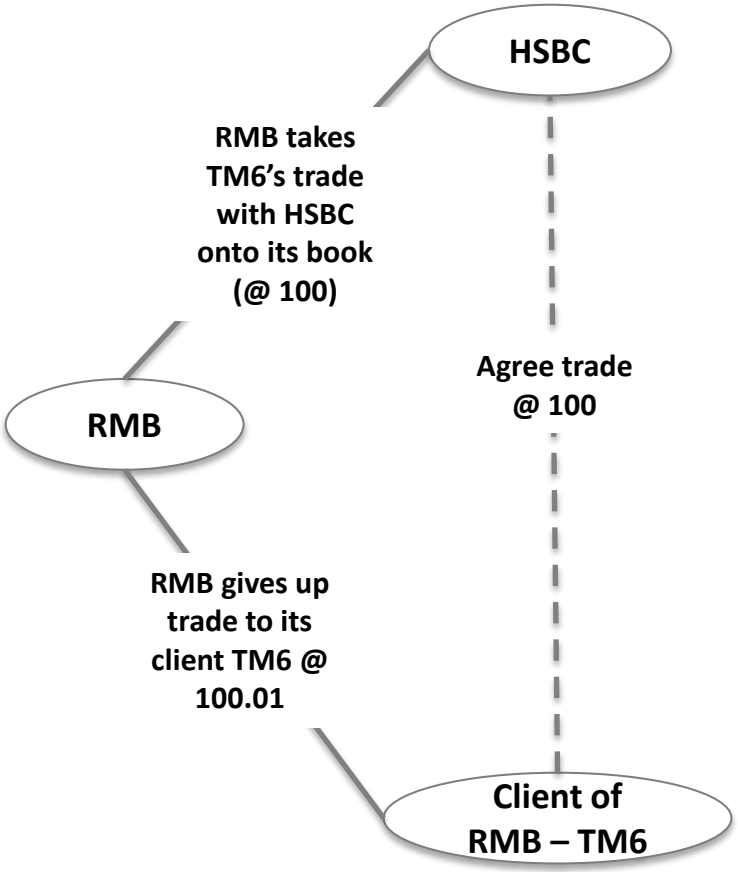
JSE Commissions Solution:

Appendix A – Commission Scenarios: Commission Flows (booked @ member level)



JSE Commissions Solution:

Appendix B – Example: Prime Broker with another member as client



Current

Event	Deal ID	Mem	Client	B/S	Qty	Price	Comm
Trade	1	RMB		B	600	100	
Trade	2	HSBC		S	600	100	
Trade	3	RMB		S	600	100.01	
Trade	4	TM6		B	600	100.01	

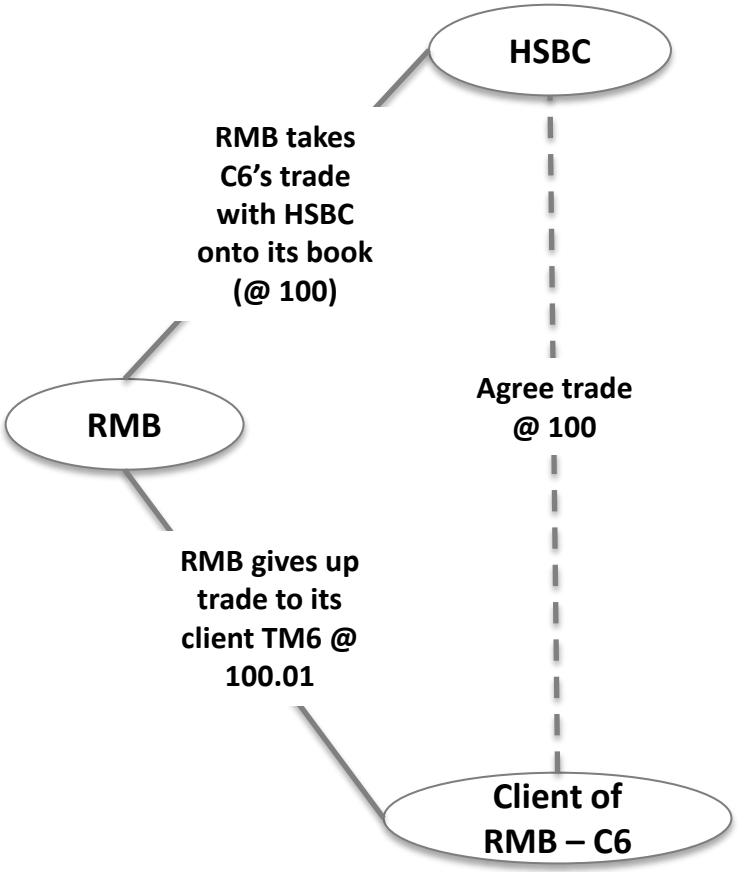
Future

Event	Deal ID	Mem	Client	B/S	Qty	Price	Comm
Trade	1	RMB		B	600	100	
Trade	2	HSBC		S	600	100	
Assign	3	RMB		S	600	100	6
Assign	4	TM6		B	600	100	6

RMB to book a new commission against trading member TM6

JSE Commissions Solution:

Appendix B – Example: Prime Broker with tripartite client



Current

Event	Deal ID	Mem	Client	B/S	Qty	Price	Comm
Trade	1	RMB		B	600	100	
Trade	2	HSBC		S	600	100	
Trade	3	RMB		S	600	100.01	
Trade	4	RMB	C6	B	600	100.01	

Future

Event	Deal ID	Mem	Client	B/S	Qty	Price	Comm
Trade	1	RMB		B	600	100	
Trade	2	HSBC		S	600	100	
Alloc	3	RMB		S	600	100	6
Alloc	4	RMB	C6	B	600	100	6

RMB to book a new commission against client C6

Agenda

- Post-trade Services Documentation for ITaC
  - Volume 00 – Post-trade Services Overview
  - Volume 01 – Post-trade EMAPI Common Specifications
  - Volume 02 – Post-trade EMAPI Clearing Specifications
  - Volume 03 – Post-trade Margin Methodology Specification
  - Technical Specification Documents
    - EMAPI protocol – HTML format
    - EMAPI protocol – XML format
    - EMAPI protocol – XSD Schema
    - EMAPI TagWire Encoding

- JSE commissions
- Software Provider showcase day
- Questions?

2016 Software Provider Showcase

- JSE to schedule a Software provider showcase day
- All clients will need to **find a replacement terminal for the current Nutron terminal** (as and when they markets migrate to new ITaC technology)
- Showcase to be held at the JSE and to provide clients with an opportunity to engage with the software providers on the functionality they will offer across the various JSE markets for trading, clearing and deal management
- Looking to hold this session once draft of the deal management and clearing specifications have been published
- Potentially looking to host this in June 2016
- JSE will be in contact with software providers
- Estimated stand costs around R6000 for a basic stand – details will be published soon

Questions?

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