

# CCP clearing for the South African bonds and repo markets

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Market workshop – Session 5  
28<sup>th</sup> Sep 2023

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*let's connect*

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JSE | CLEAR

- Introduction and project update
- Recap from previous workshop sessions:
  - CCP market structure
  - Daily CCP processes
  - Trade novation
  - Settlement management overview
  - Risk management overview
  - Securities collateral
- Summary and key takeaways
- Conclusion and next steps

## Primary objectives of the Bonds CCP market workshops:

- I. **Consulting and collaborating with market participants** including trading members, clients, clearing members, Strate and CSDPs around the detailed design and requirements of the CCP clearing service.
- II. **Discussing and understanding the change impact and interdependencies** across the various market participants' business processes and IT systems.
- III. **Providing necessary project status updates** including updates to project timelines and key milestones.
- IV. **Providing the required training and support** to operational teams prior to market testing and go-live.

### Who should attend these workshops?

Business managers, Business operation leads/managers, IT leads/ managers, Project managers

### MARKET WORKSHOP DATES FOR 2023:

- ✓ Session 1 – 11<sup>th</sup> May
- ✓ Session 2 – 26<sup>th</sup> Jun
- ✓ Session 3 – 12<sup>th</sup> Jul
- ✓ Session 4 – 8<sup>th</sup> Aug
- **Session 5 – 28<sup>th</sup> Sep**
- Session 6 – 11<sup>th</sup> Oct
- Session 7 – 8<sup>th</sup> Nov

*Agendas to be sent out two weeks prior to the workshop*

### Topics to be covered in workshop sessions:

- Trade novation ✓
- Account structure ✓
- Trade publication ✓
- Trade cancellation
- Integration with internal and external systems ✓
- Deal management
- Position management
- Collateral Management (cash & securities) ✓
- Settlement management ✓
- Risk management and margining ✓
- Fees and billing
- Reporting
- Default management ✓
- Clearing membership criteria ✓
- CCP rules, policies and procedures

## Primary drivers for Bonds CCP

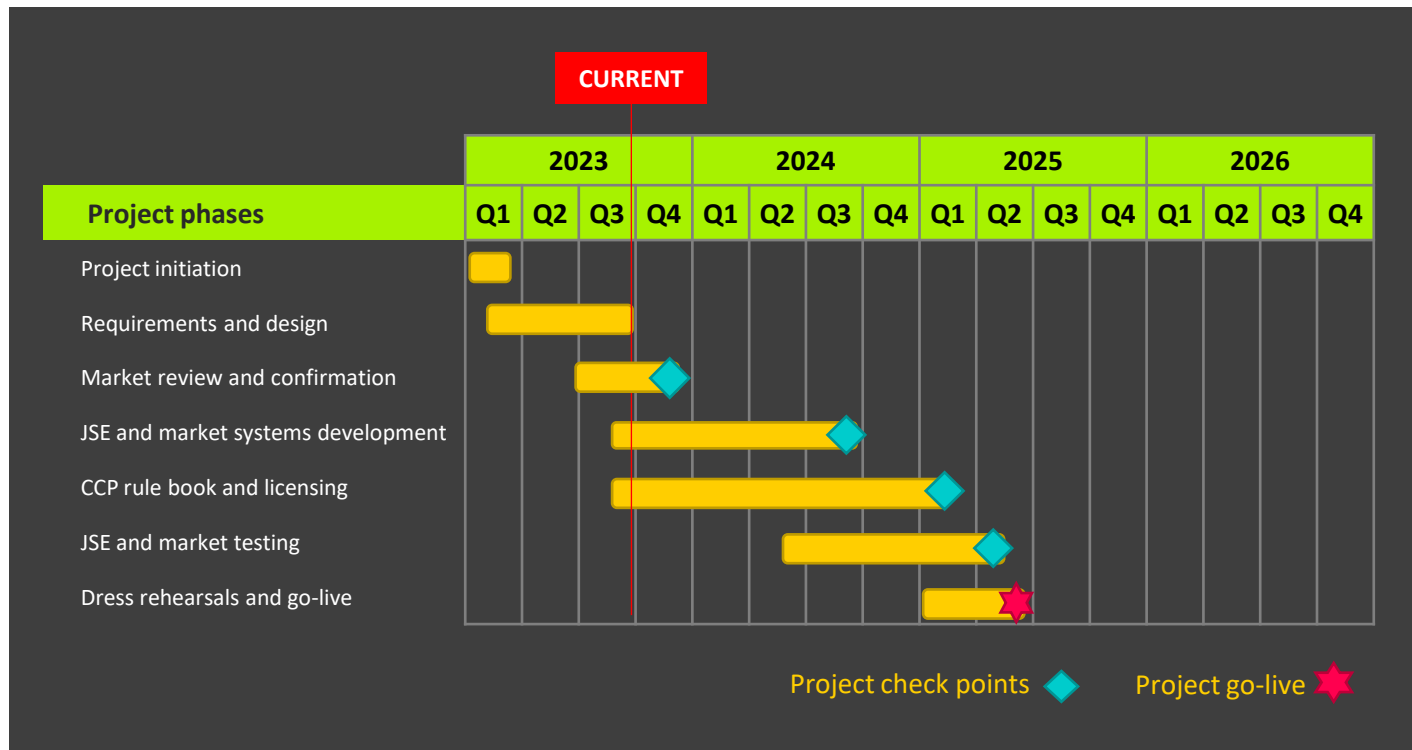
- CCP clearing is a critical service required to scale and increase trading activity in the Bonds ETP market, that is currently limited in access to the 10 Primary Dealers and represents only 1% of the total bonds and repo trading activity in SA. Electronic trading and CCP clearing of repos in European markets is close to 40% (and rising) of total trading activity.
- The three primary objectives and market benefits of Bond and Repo CCP clearing include:
  - i. broadened access to ETP and repo markets and increased trade liquidity;
  - ii. reduced counterparty credit risk and increased operational efficiency for banks; and
  - iii. improved market protection and price transparency.

## Why JSE Clear?

- JSE Clear is a fully independent and internationally recognised CCP.
- It is well positioned to leverage its existing CCP clearing infrastructure and integration with clearing member banks to provide a timeous and cost-effective domestic bond and repo CCP clearing service for SA.

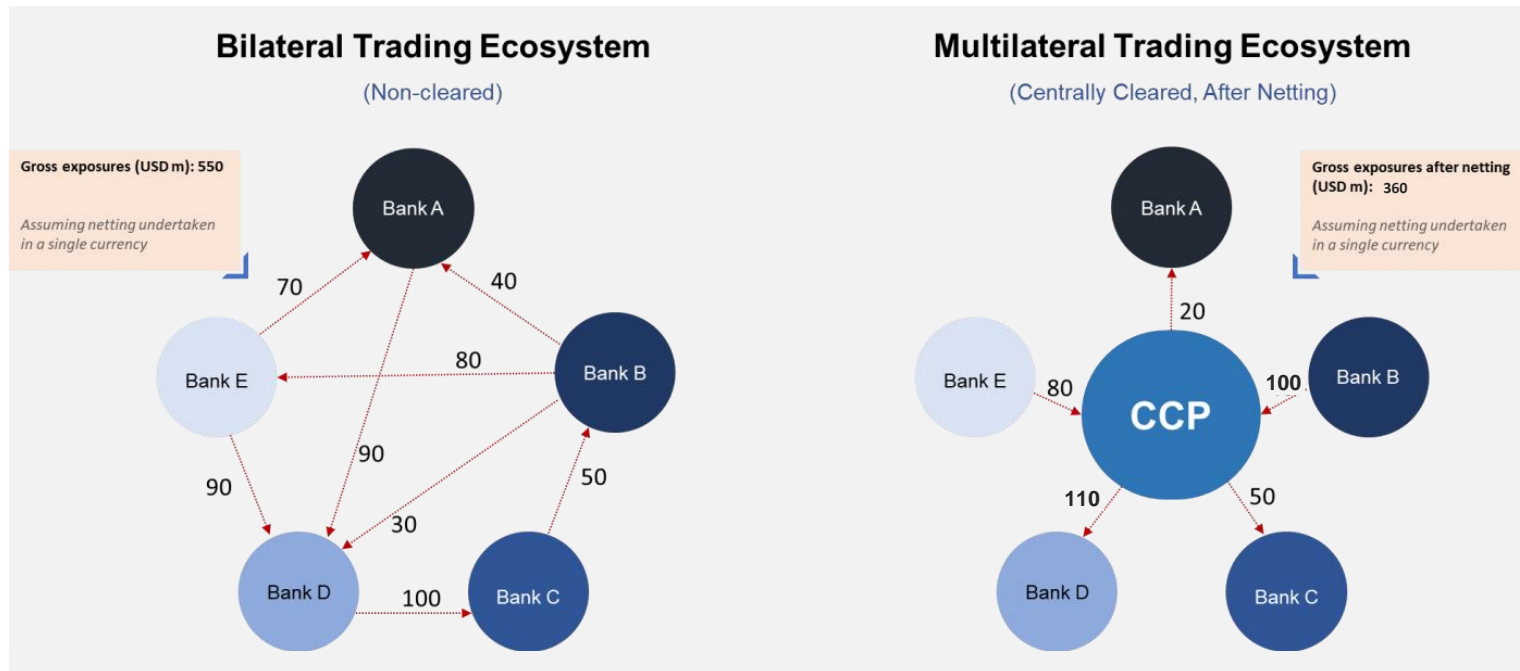


- Project progressing well and on track for H2 2025 go-live.
- Requirements and design of the Bonds CCP targeted for completion in Q3 this year.
- Market participants to start mobilising their internal teams to commence internal design and system development work in Q3/Q4 2023.

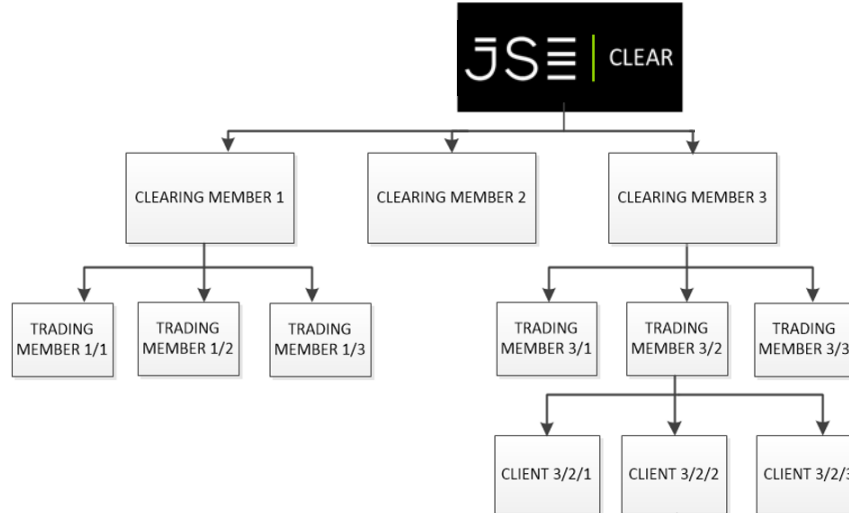


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- Recap from previous workshop sessions:
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  - Daily CCP processes
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When trades are novated at a CCP, the resulting multilateral netting benefits can increase the operational efficiency and reduce counterparty credit risk, collateral requirements and liquidity needs of members, by removing the complex web of bilateral exposures into a single net exposure with the CCP.

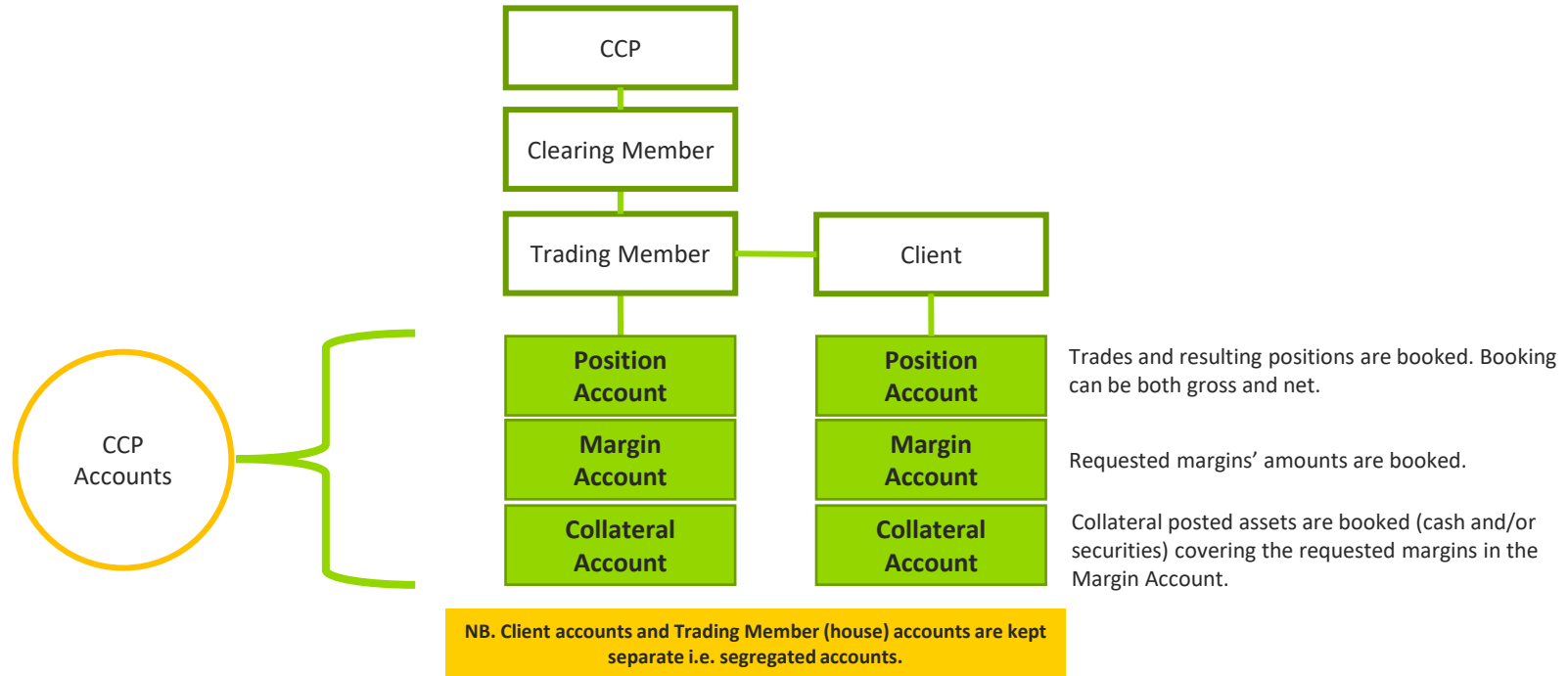


- The **Clearing House(CH)** represents the highest hierarchical level and is the CCP clearing business of the JSE i.e. JSE Clear
- A **Clearing Member (CM)** is a direct member of the Clearing House and has legal and contractual responsibility to uphold the rules of the Clearing House
- A **Trading Member (TM)** has a direct relationship with one or multiple CMs and has no responsibility to the CH other than through the CM
- A **Member Client** is associated directly with one or multiple TMs





CCP has generally three levels for a specific clearing account i.e. Position, Margin & Collateral account



- The existing JSE Clear clearing membership requirements will be applicable for clearing of bonds and repos.
- A few additional requirements for clearing bonds and repos will be applicable e.g. clearing members must have an arrangement with National Treasury to be the lender of last resort to fulfil client settlement obligations.

*NB. A final list of all additional membership requirements will be published in due course.*

JSE Clear currently provides clearing membership for three types of entities:

**A Bank / branch  
of a Foreign Bank**

(regulated by the  
Prudential Authority)

**A subsidiary of a  
Bank or a Foreign  
Bank**

(latter must be in a  
jurisdiction that  
adheres to BASEL)

**An Exchange  
Member  
(Non-bank)**

(prudentially  
regulated by the  
exchange)

The CCP will only clear products that have sufficient liquidity and daily trading volumes over a certain limit. This is to ensure that the CCP has the ability adequately liquidate positions in the event of a clearing member default.

## Phase 1

### Cash bonds:

- **Spot bond types:**
  - SA Government Nominal bonds
  - SA Government Inflation linked bonds
- **Settlement date:** T0 to T+n

### Bond repos:

- **Reference bonds:**
  - SA Government Nominal bonds
- **Repo type:** Buy-Sell back
- **Repo rate:** Fixed rate
- **Start settlement date:** T0 to T+n
- **Returns settlement date:** T1+ T+n

**NB: Classic repo may be included in phase 1.**

## Phase 2 (Indicative)

### Cash bond :

- **Spot bond types:**
  - Other Issuer segments e.g SOEs

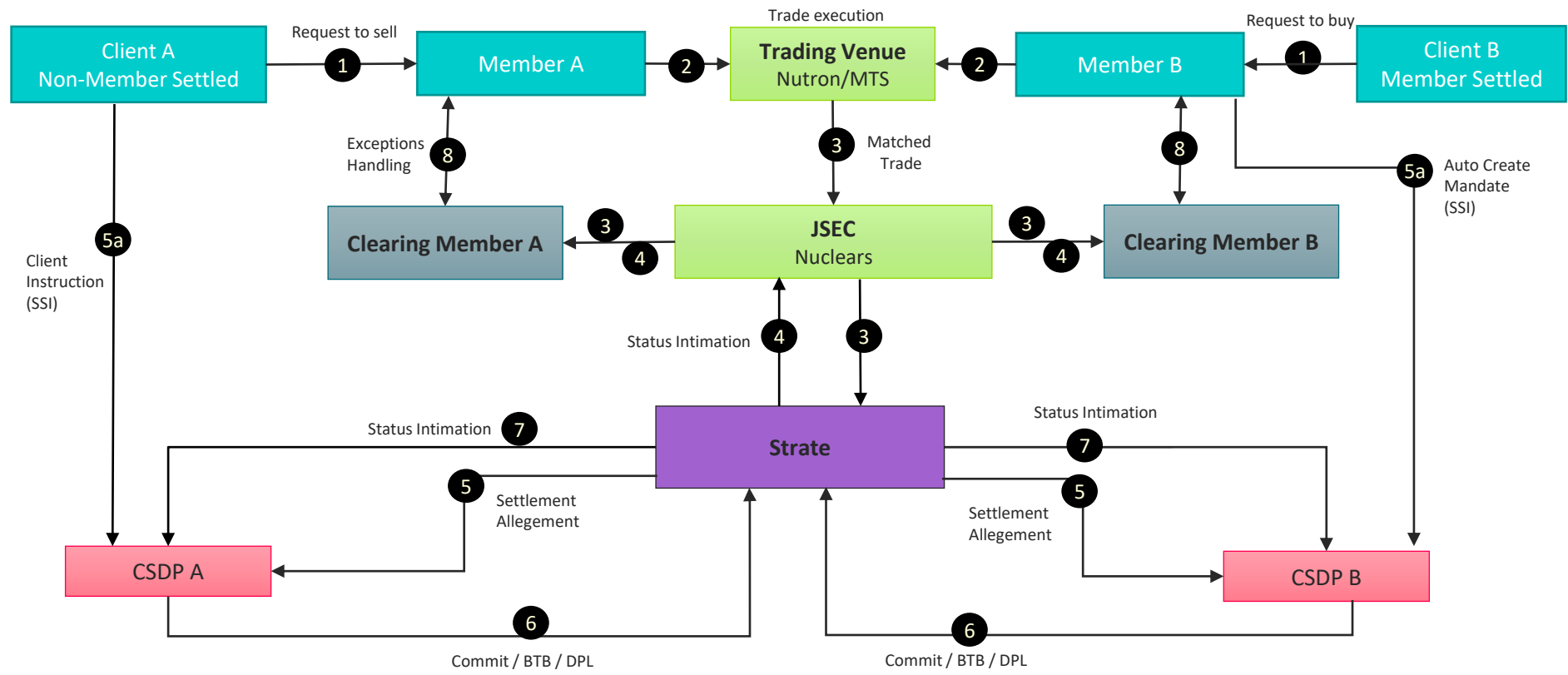
### Bond repos:

- **Reference bonds:**
  - SA Government Inflation linked bonds
- **Repo type:** Classic Repo & Open-ended repo, GC Baskets, Tri-partied repo
- **Repo rate:** Floating rate

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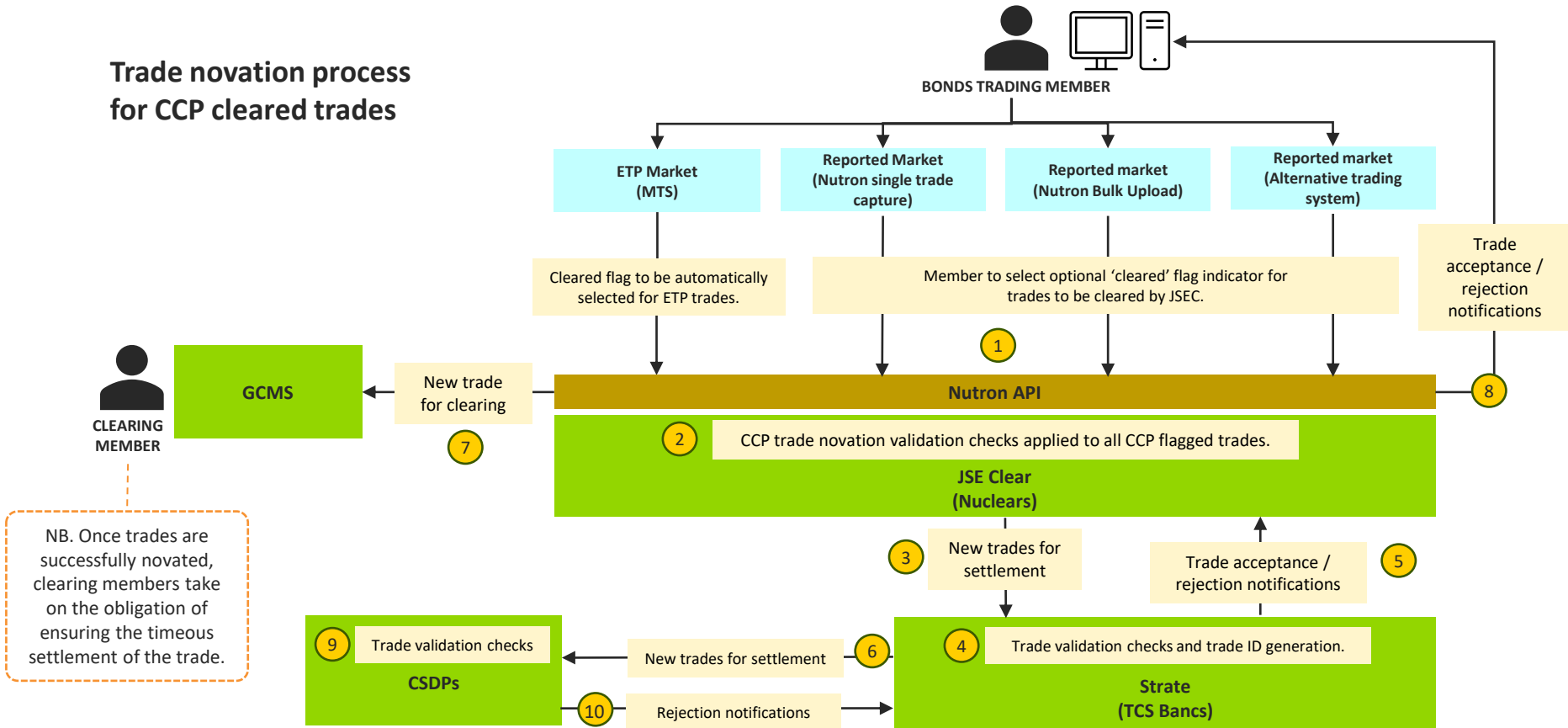
Daily CCP operations typically involves trade novation, deal and position management and daily margin management.





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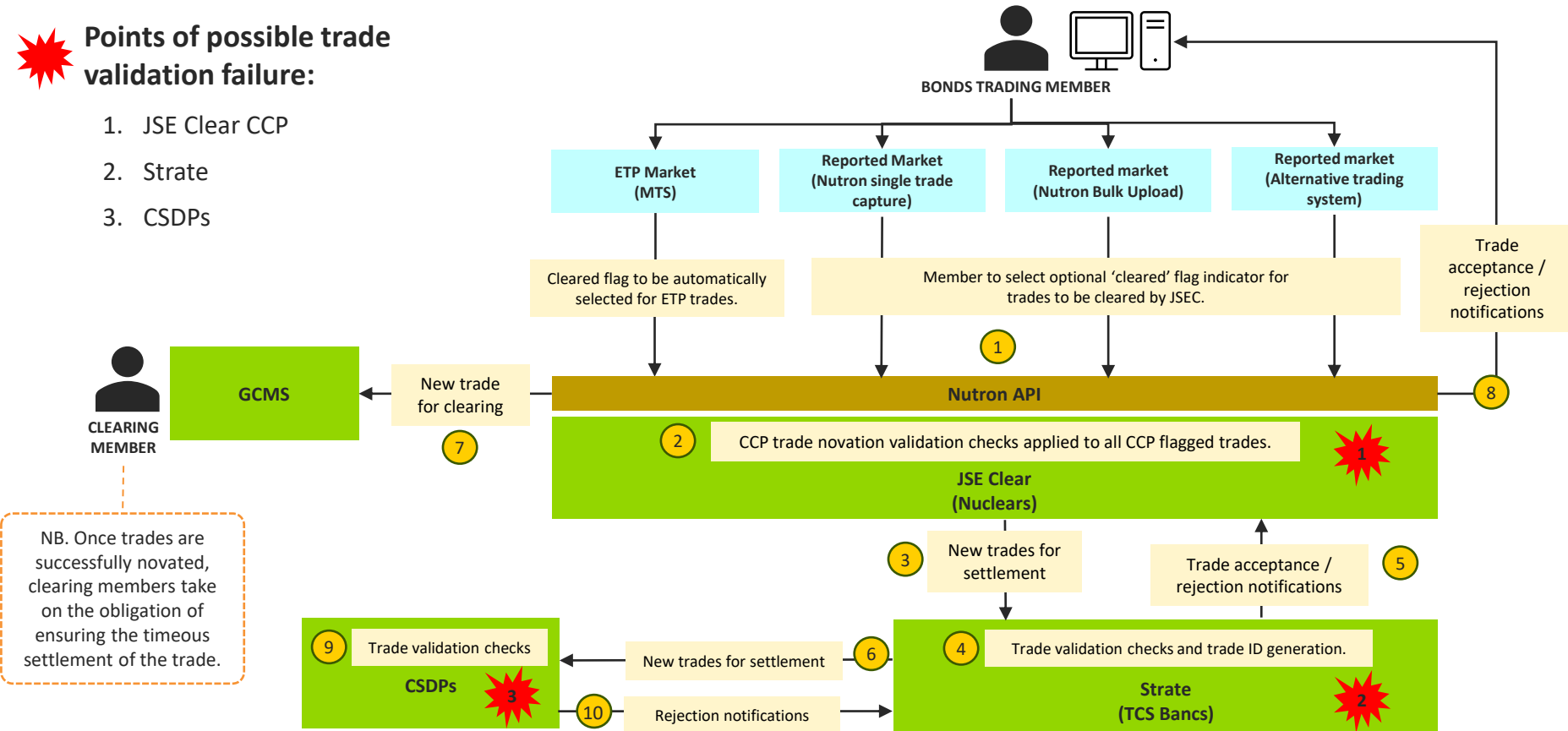
## Trade novation process for CCP cleared trades





## Points of possible trade validation failure:

1. JSE Clear CCP
2. Strate
3. CSDPs



NB. Once trades are successfully novated, clearing members take on the obligation of ensuring the timely settlement of the trade.

## Common trade rejection reasons:

No.	Rejection reasons	Potential failure point		
		JSE Clear	Strate	CSDP
<b>1</b>	<b>Invalid trade data</b>			
1.1	Mandatory field validation failure	✖	✖	✖
1.2	Invalid settlement date	✖	✖	
1.3	Invalid trade date	✖	✖	
1.4	Duplicate exchange reference number		✖	
<b>2</b>	<b>Invalid instrument ref data</b>			
2.1	Invalid ISIN/security ID	✖	✖	
2.1	Security ID is not a clearable instrument	✖		
<b>3</b>	<b>Misaligned/Invalid Member/Client reference</b>			
3.1	Member/Client has invalid Strate code	✖	✖	✖
3.2	Member/Client has invalid Scrip/Cash accounts	✖	✖	✖
3.3	Member is not eligible for clearing	✖		

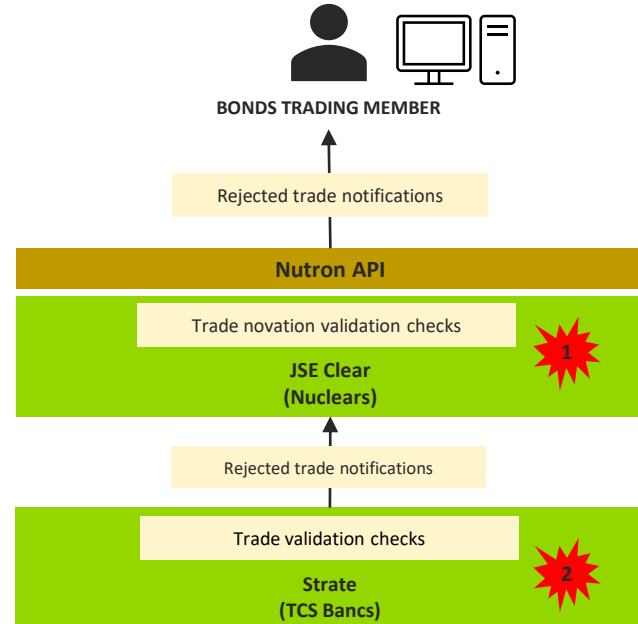
*NB. This is not an exhaustive list of all the rejection reasons – a complete list will be provided in due course*

## Managing trades rejected by JSE Clear and Strate

- Trading members will receive all rejected trade notifications via the Nutron API in real-time.
- Rejected trade messages will include all the necessary information, including the reason for rejection, that is required for members to resolve the issue.
- Trading members will be responsible for resolving all rejected trades. JSE Clear, Strate and CSDPs will support trading members in the resolution process.
- Trading members should have the necessary systems and business processes to receive, monitor, and resolve all rejected trades in real-time.
- All rejected trades that are not resolved by end-of-day on T will be deemed canceled by the CCP and will need to be rebooked the following day.
- Trades in a rejected state will not be deemed as CCP novated trades i.e. the CCP and clearing members will not be liable for the trade in the event of default.

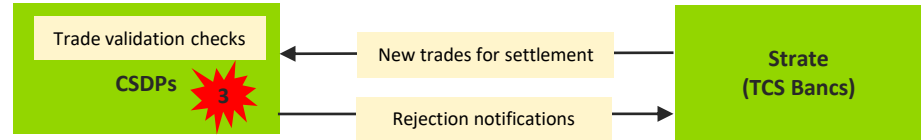
Example of rejected trades queue

No.	Trade ID	Trade Source	Rejection Code	Rejection Description	...
1	435245	MTS	30001	Invalid settlement date	...
2	353456	IRC	30001	Invalid settlement date	...
3	564634	IRC	40001	Security ID is not a clearable instrument	...
....	...	...	...	...	...





## Managing trade rejected by CSDPs



### Rejection reason

- CSDPs can reject the trade even after the trade is novated (between T and S-1) i.e. trade has been validated successfully at JSE Clear and Strate; and sent to the clearing member.
- Trade rejections at CSDPs mainly occur due to misalignment of scrip and cash accounts details between JSE Clear, Strate and CSDPs.

e.g. Members/client may change their CSDPs however failed to update the correct details at JSEClear/Strate.

### Resolution steps:

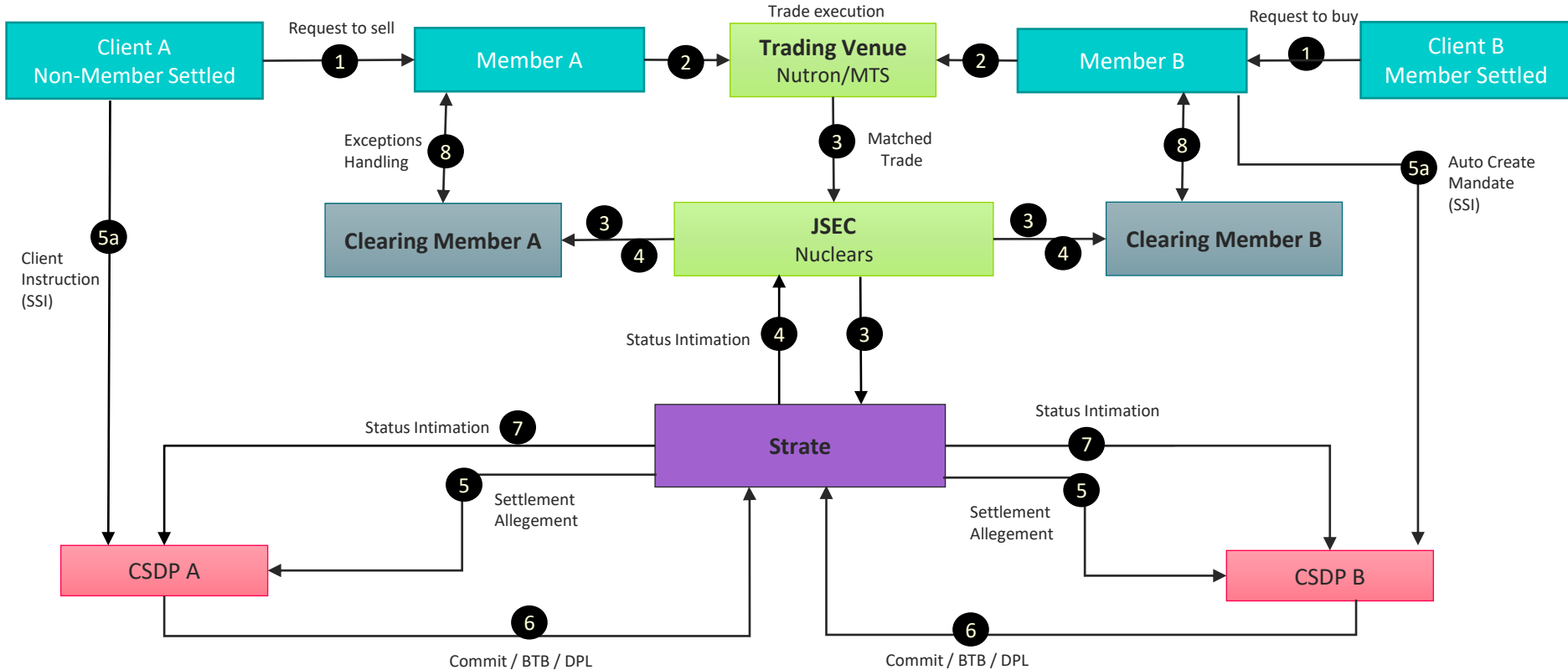
1. CSDPs to send trade rejection notification to Strate and trading members/clients.
2. Trading member / Clients to update the CSDPs details at JSEClear and Strate.
3. Trading members to cancel the existing trades and rebook a new trades.  
(Alternative resolution method being considered for MTS trades.)

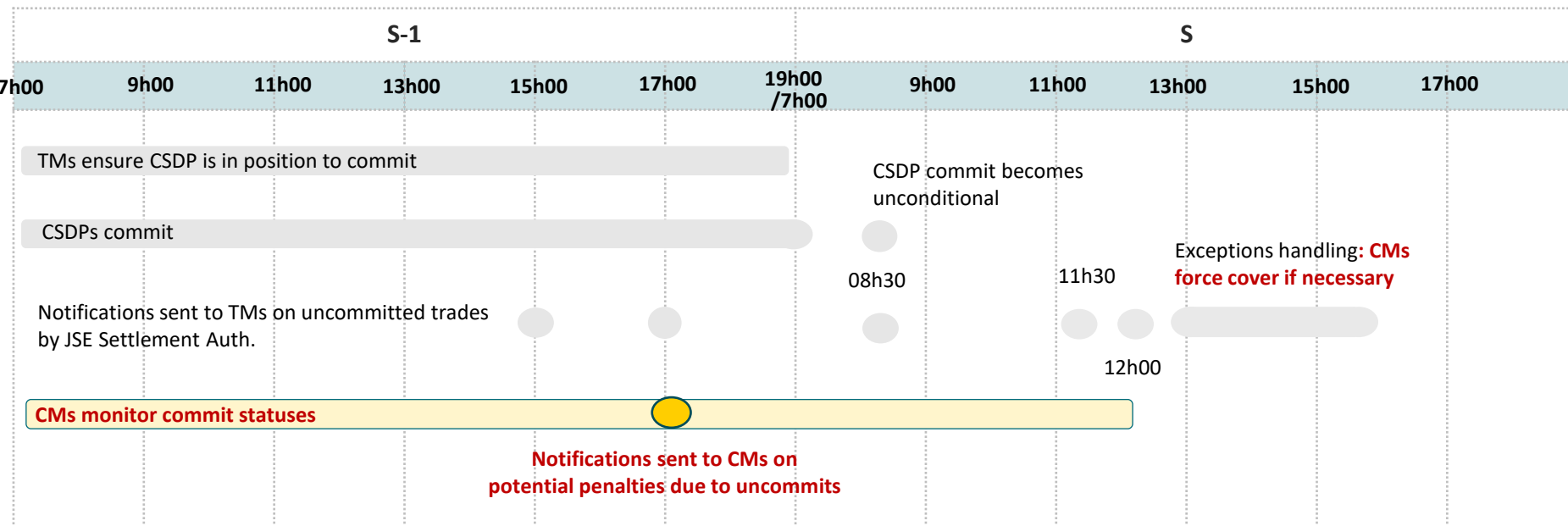
**NB. CCP margin requirements will still be applicable for all trades rejected by CSDPs until resolved.**

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## Settlement Principles

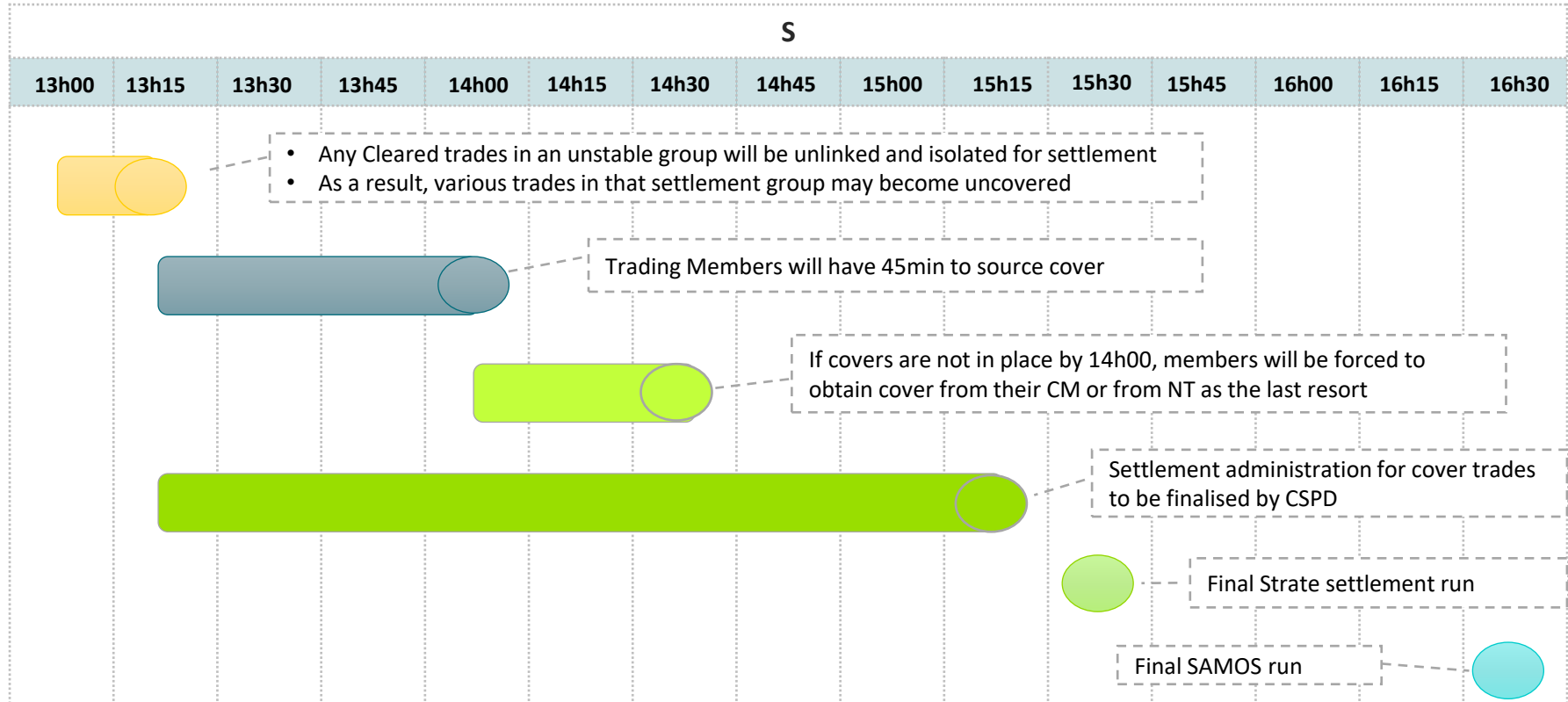
- Alignment as far as possible between cleared, uncleared and OTC markets.
- Back-to-back links will be used across cleared, uncleared and OTC markets.
- No settlement failures of cleared trades.
- All Clearing Members required to have access to National Treasury liquidity as last resort.





- Notifications sent to CMs from Clear Insights, include all client info on one report
- Exceptions handling for Cleared trades prioritised (like ETP trades are today)
- CMs will require access to NT liquidity as final step in exceptions handling
- Penalties will be instituted and charged to CMs for late commits





- ETP Trade Cancellations:
  - Only cancellations on T will be allowed
  - As ETP is anonymous central order book trading, any cancellations will need to be approved by JSE Market Regulation
  - If approved CSDPs will be asked to uncommit to trades so that cancellations may be processed
  
- IRC Cancellations
  - All trades which need to be cancelled or reallocated should be done before settlement day
  - No cancellations or reallocations are allowed on S (with the exception of same say trades)
  - Member's need to request that their CSDP lift their commit prior to processing the cancellation in order for the cancellation to be properly processed

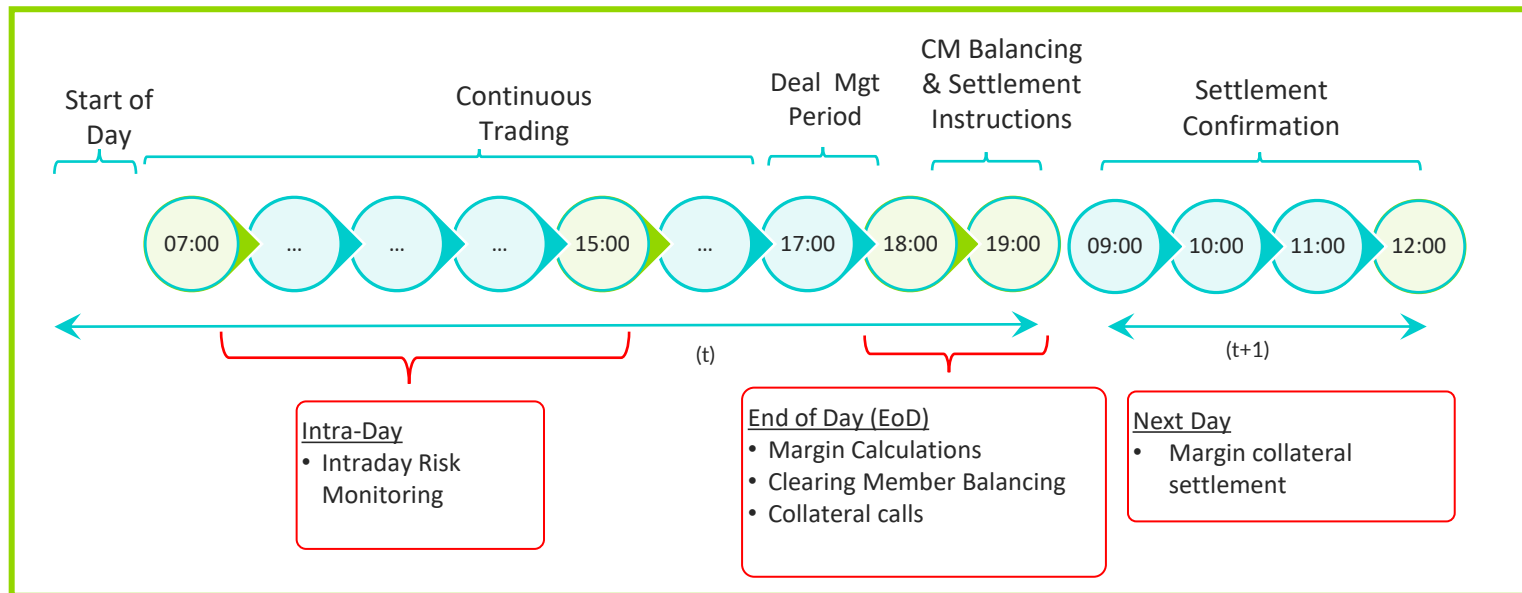
**NB. Any cleared trades not cancelled by end of day T, will be margined and TMs will be liable for the margin on T+1**

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CATEGORY	DESIGN	REASONING
Default fund structure	<p><b>Single mutualised default fund</b> The inclusion of cash bonds and repos in the current JSEC default fund structure that currently covers clearing of all JSE listed derivatives markets i.e. EQD, FXD, IRD and CMD.</p> <p><b>Risk management hierarchy (as per current JSEC model)</b> CCP → Clearing member → Trading member → Client</p>	<ul style="list-style-type: none"> <li>• Greater capital efficiency</li> <li>• Easier to provide cross product margin offset.</li> <li>• Aligned with current JSE Clear structure.</li> </ul>
Margining methodology	<p><b>Portfolio VaR (with time-weighting)</b></p> <ul style="list-style-type: none"> <li>• BRW historical simulation with Lamda (decay factor): 0.998</li> <li>• CI: 99.5%</li> <li>• Liquidation Period: 2 days</li> <li>• Lookback Period: 5 years rolling lookback + 1 year stress period</li> </ul>	<ul style="list-style-type: none"> <li>• Aligns closely to other CCP margining methodologies.</li> <li>• Aligns to current JSEC model review proposal</li> </ul>
Daily risk management processes	<p><b>Two core risk management processes</b></p> <ul style="list-style-type: none"> <li>• <b>EOD margin run</b> : Each day JSE Clear will run a single End-of-Day (EOD) margin run for all markets. Margin calls are required to be settled by clearing members on T+1 ( by 12:00pm).</li> <li>• <b>Intra-day margin run</b>: Additionally in extreme volatile markets JSE clear may elect to run an adhoc intraday margin call. Intraday margin call take place during the trading day and must be settled in cash before 15:00pm.</li> </ul>	<ul style="list-style-type: none"> <li>• Aligns with current IRD process</li> </ul>
Cross product margin offset (under consideration)	<p><b>Cross product margin offset to be enabled</b> Cross product margin offset between listed bond future, cash bonds and bond repo positions within the same underlying group i.e. nominal govt bonds and inflation linked bonds.</p>	<ul style="list-style-type: none"> <li>• Cross product margin offset will assist in reducing the overall initial margin which will aid in growing cleared volumes.</li> </ul>
Security collateral	<p><b>Securities collateral to be allowed</b> ZAR cash and securities (liquid SA govt bonds) will be accepted as collateral against bond futures, cash bonds and bond repo margin requirements. Pledging of securities to be done via the Strate CMS service.</p>	<ul style="list-style-type: none"> <li>• Will significantly reduce the cash capital required for initial margin and members can utilize lazy assets on their balance sheet to meet the margin requirements.</li> </ul>

## Two core risk management processes are conducted daily by the CCP

- EOD margin run** : Each day JSE Clear will run a single End-of-Day (EOD) margin run for all markets. Margin calls are required to be settled by clearing members on T+1 ( by 12:00pm).
- Intra-day margin run**: Additionally in extreme volatile markets JSE clear may elect to run an adhoc intraday margin call. Intraday margin call take place during the trading day and must be settled in cash before 15:00pm.



Time	EOD Risk management Process
Before 18:00	<b>Final settlement run</b> <ul style="list-style-type: none"> <li>• Strate to complete the final settlement run for spot bond and repo market.</li> </ul>
18:00	<b>Market Close</b> <ul style="list-style-type: none"> <li>• Cash bond &amp; IRD market close.</li> </ul>
18:02	<b>EOD process begins.</b> <ul style="list-style-type: none"> <li>• JSE calculates IM and VM &amp; fees per client and member account and aggregates at CM level. (Bonds CCP cleared trades will be included)</li> <li>• JSE disseminates the EOD reports to CMs. (Reporting will include Bonds CCP cleared trades)</li> <li>• Clearing members run their EoD process. (CMs to include Bonds CCP cleared trades )</li> </ul>
18:30 to 19:00	<b>Security collateral</b> <ul style="list-style-type: none"> <li>• JSEC sends eligible spot bond prices to STRATE CMS.</li> <li>• JSEC sends exposure to STRATE CMS i.e Maximum security value that can be pledged for each client. (Exposure will include both IRD and bond CCP cleared trades)</li> </ul>
After 20:00	<ul style="list-style-type: none"> <li>• JSE prepares net settlement instructions for CMs, to be released next day at 6:00 am. (Bond CCP cleared trades margins and fees will be included)</li> </ul>

## Intraday monitoring and intraday margin call process

### 1. Routine market assessment during trading hours

JSE Clear's policy is to conduct a routine market assessment, which may in turn trigger an intraday margin shortfall calculation and the issuance of an intraday margin call (IMC).

### 2. Conduct crisis meeting upon threshold breach

This would happen if predefined thresholds are breached and the resultant crisis meeting, convened to discuss the observed breach, determines that an IMC is required.

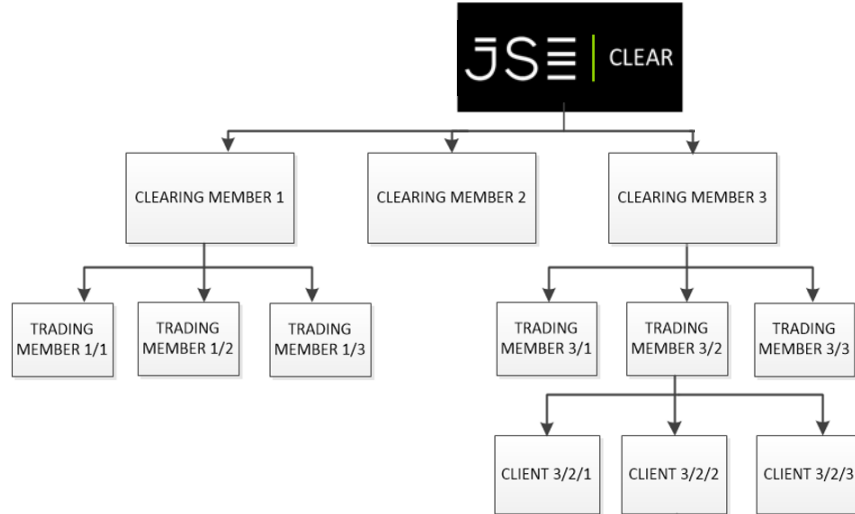
### 3. Clearing member notification for IMC

JSE Clear will notify the relevant Clearing Members of their intention to issue an IMC and must issue the IMC **by latest 14h00 South African Standard Time (SAST)**.

### 4. 60 min deadline for CMs to settle IMC i.e by 15:00 pm IMC must be settled

The IMC shall be enforced immediately and must **met by the relevant Clearing Members no later than 60 minutes after the Clearing House has issued the margin call.**

- In a **client default** the Trading member must meet the obligations of the defaulted client
- In a **trading member default**, the clearing member must meet the obligations of the defaulted trading member
- In a **clearing member default**, the defaulted clearing member's portfolio is closed out through the default auction or other mechanisms and the prefunded resources in the risk waterfall are used to settle the obligations of the defaulted clearing members





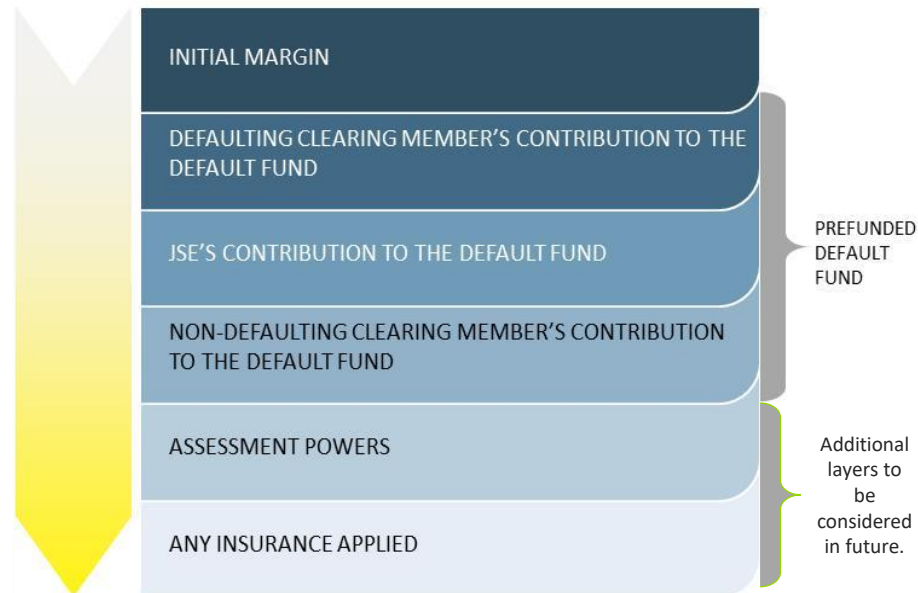
1) All initial margin, additional margin and/or other collateral held by JSE Clear in favour of or on behalf of or for the account of the clearing member is used first to settle any obligations the clearing member has to the market.

2) Should these be insufficient to cover all obligations, the defaulting clearing member's contribution to the JSE Clear Default Fund is used.

3) Thereafter, JSE Clear's contribution to the JSE Clear Default Fund is used.

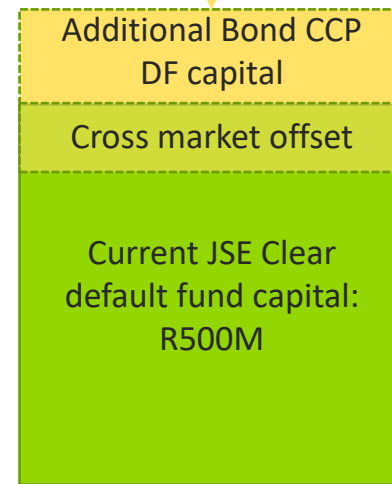
4) If any obligations to the market remain thereafter; the non-defaulting clearing members' contributions to the JSE Clear Default Fund are utilised.

5) Should the defaulting clearing member have any obligations to the market that are not covered by the financial resources listed above, affected market participants will have a claim against the defaulting clearing member.



- A single mutualised default fund will be implemented that adds cash bonds and repos into the current JSEC default fund structure that includes all JSE listed derivatives markets i.e. EDM, FXD, IRD and CMD.
- A single mutualised default will enable easier cross product margin offset between listed interest rate derivatives and cash bonds and repos, and OTC interest rate derivatives in the future.
- A single mutualised default fund will provide greater capital efficiency through a potential reduction in default fund capital requirements.

The current margins on deposit in the ETP market is likely to be sufficient to cover the additional Bonds CCP DF capital requirements. As the ETP market and CCP cleared volumes increase, additional DF capital may be required.



## Default

When a Client, TM or CM is unable to meet their margin obligations to the CCP

## Settlement failure

When a Client or TM is unable to meet their trade settlement obligations (stock if selling, cash if buying) their counterparty on S

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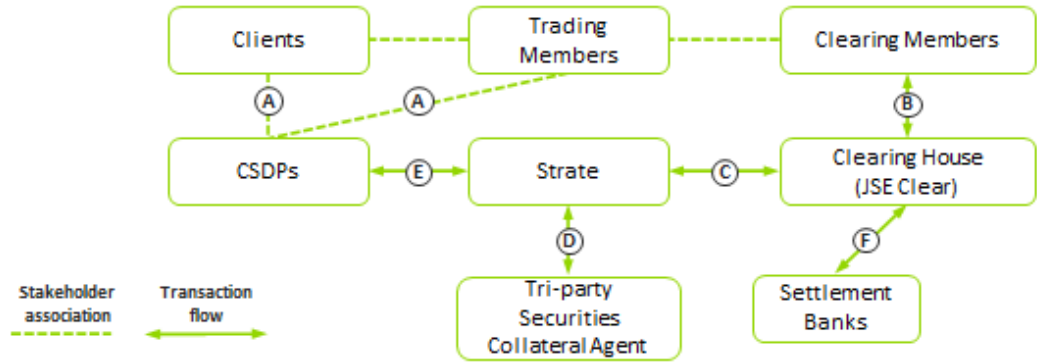
- **Background**
  - Initial Margin (IM) requirements is calculated as part of the daily EOD process and settled on T+1 and is payable in ZAR-cash only.
  - The acceptance of securities collateral by JSE Clear, will allow members to meet their IM requirements through a combination of ZAR cash and liquid South African fixed rate government bonds.
- **Securities collateral will be offered in the following markets for Bond CCP**
  - Interest Rate Derivatives and cleared Bond CCP trades
- **Securities Collateral Value Proposition**
  - Reduce liquidity pressures and funding costs for derivative market participants in an environment of increasing regulatory capital requirements and other cost pressures
  - Alleviate liquidity pressures in times of market stress when margins inevitably increase
  - Mitigation of the concentration risk that arises from the CCP investing the margins it receives from clearing members for derivative exposures back with the same institutions

- **Eligible securities**
  - Initial phase - liquid South African government bonds
  - Later phases - equities will be considered
- **Obligations for which securities collateral will be accepted**
  - Initial margin (including the margin add-on's)
  - Clearing member default fund contributions will be catered for in a later phase
  - Note:
    - Additional margin required by Clearing Members on top of the CCP margin call will not be able to be covered by securities via the JSE Clear collateral solution
    - Variation Margin will remain payable in ZAR cash
- **A minimum percentage of the IM obligation will still need to be settled in ZAR cash**
  - Initially this will be 65% i.e., up to 35% of the IM obligation can be collateralized through securities

- **The following criteria will be used to determine which bonds form part of the list of eligible securities:**
  - Nominal value in issue greater than R100 billion
  - Average daily value traded (ADVT) of more than R500 million
  - Term to maturity greater than 6 months
  - Ability to value the security and determine the valuation haircut and concentration limits
  - Availability of data to support these functions
  
- **Eligible collateral will be reviewed quarterly and ad hoc as required**

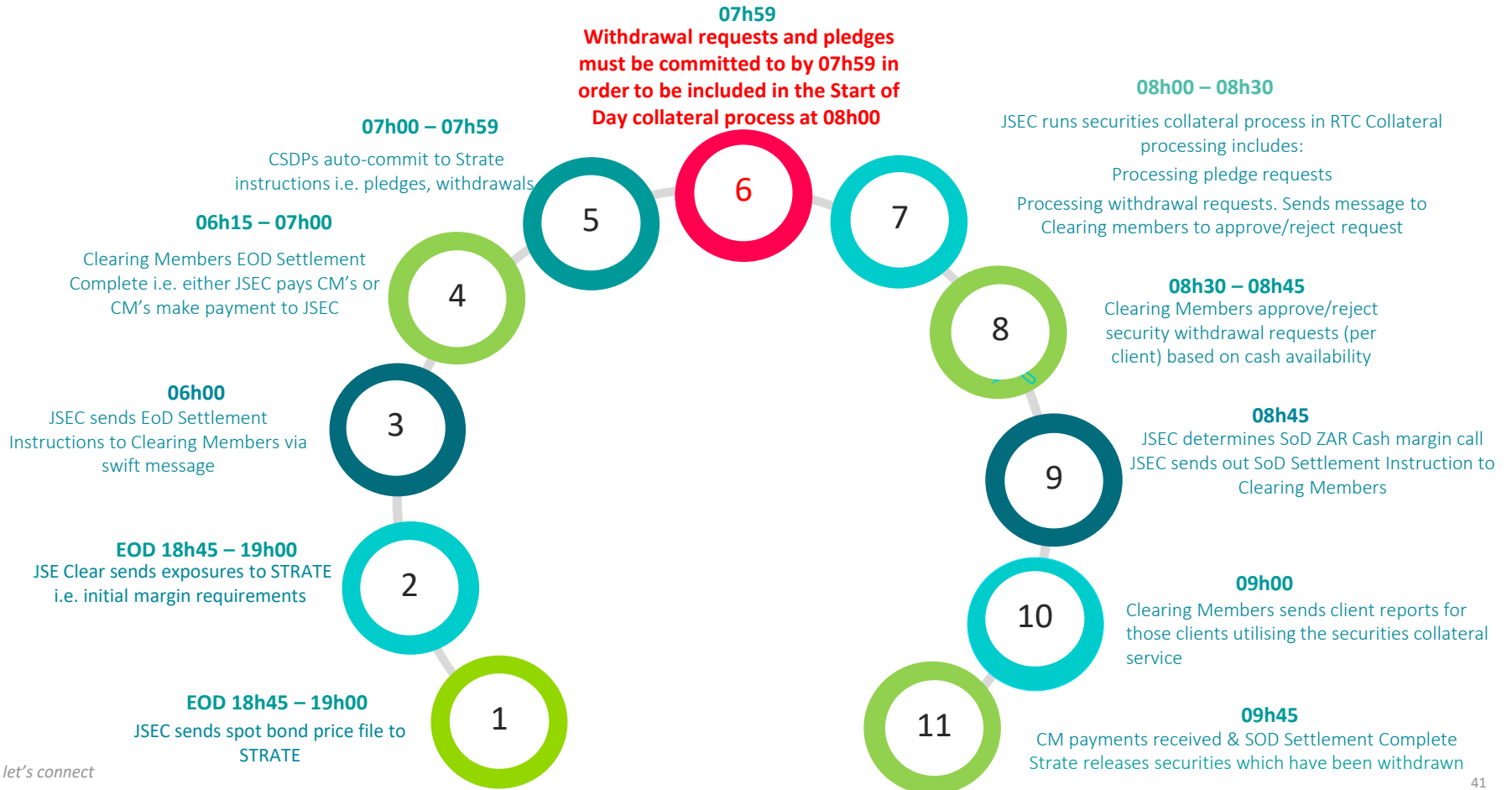
**Current list of eligible SA Govi bonds based on the eligibility criteria above with indicative haircuts**

ISIN	Alpha Code	Haircut (%)
ZAG000016320	R186	6.96
ZAG000106998	R2030	8.32
ZAG000077470	R213	8.98
ZAG000125980	R2040	9.08
ZAG000107004	R2032	9.3
ZAG000125972	R2035	9.53
ZAG000107012	R2037	9.72
ZAG000030404	R209	10.32
ZAG000106972	R2044	10.59
ZAG000096173	R2048	10.87



- Associations and transaction flows:**
- A) Clients and Trading Members to open an independent collateral giver account or trading collateral giver account at STRATE via their CSPDs for the pledging of securities collateral
  - B) Initial margin amounts confirmed by JSE Clear with Clearing Members as part of the daily end-of-day process
  - C) Allowable securities margin amount sent to Strate per Client and Trading Member for securities collateralisation
  - D) Strate will allocate or release securities as available in Client and Trading Member independent collateral giver account
  - E) CSPDs are required to commit to all security pledges and release requests for them to be valid (automated process)
  - F) JSE Clear to determine remaining cash amount required (i.e. total margin required less pledged securities) and once clearing members confirm the cash breakdown cash settlements are done via the settlement banks





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No.	Capability	Trading Members	Strate	CSDPs	Clearing Member
1	The ability to select the 'cleared' indicator for reported bonds and repo trades when reporting to the JSE.	✓			
2	The ability to receive house and/or client trades that are selected for CCP and monitor trade exposures in their GCMS system.				✓
3	The ability to receive cleared/non-cleared indicator into settlement system.		✓	✓	
4	The ability to break BTB links between cleared and non-cleared trades.		✓	✓	
5	The ability to priorities commits for all cleared trades.		✓	✓	
6	Liquidity lines from NT (via PD banks) to facilitate cover trades for trading members/clients.				✓
7	The ability to monitor settlement commits in real-time and chase-up with trading members/clients for commits based on settlement cut-off times.				✓
8	The ability to provide and force cover on trading members/clients in the event of commit cut-off times being reached.				✓
9	The ability to balance on daily CCP margin requirements and fees at EOD, and fund margin requirements (in cash or securities) on morning of T+1.	✓			✓
10	Participate in CCP default auction process.				✓

**NB. The list above only highlights the primary settlement management capabilities to be developed by market participants and is not exhaustive.**

**A formal and exhaustive list of all clearing, settlement and risk management capabilities to be shared with market participants in due course.**

## Conclusion and next steps:

- JSE to continue with the detailed design and requirements of the CCP with targeted completion in Q3 this year.
- Market participants to review the CCP design and requirements shared thus far and engage directly with JSE on any questions or queries they may have.
- Market participants to start mobilising their internal teams to commence internal design and system development work in Q4 2023.

### UPCOMING MARKET WORKSHOP DATES FOR 2023:

- ✓ Session 1 – 11<sup>th</sup> May
- ✓ Session 2 – 26<sup>th</sup> Jun
- ✓ Session 3 – 12<sup>th</sup> Jul
- ✓ Session 4 – 8<sup>th</sup> Aug
- ✓ Session 5 – 28<sup>th</sup> Sep
- Session 6 – 11<sup>th</sup> Oct
- Session 7 – 8<sup>th</sup> Nov

*Agendas to be sent out two weeks prior to the workshop*

### Topics to be covered in next workshop sessions:

- Trade novation ✓
- Account structure ✓
- Trade publication ✓
- Trade cancellation ✓
- Integration with internal and external systems ✓
- Deal management
- Position management
- Collateral Management (cash & securities) ✓
- Settlement management ✓
- Risk management and margining ✓
- Fees and billing
- Reporting
- Default management ✓
- Clearing membership criteria ✓
- CCP rules, policies and procedures

# Thank you

## Q&A

...for further info or questions, please contact:

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*let's connect*