Welcome to the JSE Market Communication Broadcast
Session start: 13h30 SAST (GMT+2)
Teleconference number: +27 87 350 0288
Conference ID: 677002#
JSE moderator will dial in at 13h25 SAST

www.jse.co.za
Agenda

All Markets

• Colocation Services Update
• JSE London PoP Update
• Integrated Trading and Clearing (ITaC) Project Update

Equity Market Specific

• T + 3 Project Update
• Equity Market Clearing and Settlement Billing Model
• Equity Market Billing Reviews
• General
  » JSE TALX Services Update
  » Infoslips for Client Invoices

Questions
Colocation Service Update

Equity Market Changes:

- Updated Native Trading Gateway and ITCH Market Data specs were issued during February to include the changes for Colocation
  - Additional Native Trading Gateway for Colocation; and
  - New ITCH Un-throttled Market Data Gateway
- Equity Market production trading system upgraded 22 February 2014 to include the new production code to cater for the new Gateway being introduced
- Extensive internal production performance testing conducted to fine tune the configurations of the new Gateways and additional hardware for Go Live
- New Gateways are only started on Client take-on weekends and on the Participant Test Weekends (PTWs) and will go live as part of the Colocation Service Go live on Monday, 12 May 2014
Colocation Service Update

Derivatives Market Changes:

- Implemented new proxy layer for all markets in the trading network on weekend of 15 February 2014 to cater for Derivative market access via Colocation
- No other hardware or software changes applied
- Extensive internal production performance testing conducted to fine tune the proxy configurations as well as functional and connectivity testing
- New proxies only started on Colocation Client take-on weekends and Participant Test Weekends (PTWs) and will go live as part of the Colocation Service Go live on Monday, 12 May 2014
Indicative Latency Gain – Colocation vs Access Network

Local Client Network Latency Gain via Colocation: at least 24 x faster!

International Client Network Latency Gain via Colocation: 2 100 x faster!

μs = micro seconds
At the end of February, all Colocation clients were invited for an “open day” to view the Colocation facility and lots of positive feedback has been received from these visits.

JSE team has been in ongoing discussions with Colocation clients to finalise their Colocation setup and design especially connectivity - final JSE approved CSOFs to be issued to clients this week.

First client take-on appointments will be reserved for client signed off CSOFs.

JSE has received a number of queries w.r.t the freeze period post go live.

- Current freeze restriction is for physical equipment changes/install and any other environment and network changes that pose a medium to high risk to the environment.
- Client applicable tuning and enablement of additional connections to the services they subscribe to will be allowed from 2 weeks post go live of the Colocation as long as client infrastructure is already in colocation.

Monthly PTWs will be used for colocation client migration post go live.
JSE reminds clients that **it remains the clients responsibility** to finalise and implement their **telecommunications connectivity** with their chosen telecommunications provider for connectivity into Colocation.

- Colocation is a **external facility to** the JSE and is a logical extension of the Client’s data centre.
- Clients need to choose whether to make use of their existing lines or install new lines for Colocation connectivity.
- Required routing of client traffic between their office and their Hosting Unit must be agreed between clients and their telecommunications providers (not a JSE responsibility).
- JSE is responsible for providing and installing the cable between the client hosting unit and their chosen telecommunications provider in the Meet-Me-Room – JSE to provide cables and install these as Cross Connects.

**Time Synchronization Service** details that confirm how clients will receive this service has been finalised – updated service documentation to be issued tomorrow Tuesday, 25 March 2014.
Colocation Service Update

Reminder Customer Setup is in 3 stages

- **Data centre rack and stack** activities to ensure HU setup
- **Network connectivity tests** to prove HU connectivity within the Colocation network
- **Enablement of application connectivity** to services of the JSE which will include a live connectivity test to prove enablements and application connectivity to Gateways / Proxies
- Reminder post go live – client take-on activities/changes will only take place outside of Trading hours (Section 7 of services documentation)
- As previously communicated, CTS connectivity is only facilitated via the Client access network (CAN) and will not be provided via Colocation network

Clients who require access to CTS from their Hosting units need to discuss and agree their required connectivity **with their telecommunications provider** of choice
Colocation Service Update

Equity Market order rates per CompID will be at existing order rate maximums for a monitoring period of 6 weeks – thereafter, revised order rates may be allowed

- On going analysis conducted on historical data and is ongoing
- 3 CompIDs @ 300 orders per second
- All other CompIDs @ 100 orders per second

Freeze period currently till end-July 2014 – several requests received to reduce the freeze period post the Colocation go live. JSE will monitor Colocation post the go live of the service and notify clients of a revised decision if/as required
Customer Patch panel In a Hosting Unit to facilitate Inter-Connects

- All Cross Connects are installed as Fibre cable drops in the centre of the Hosting Unit
- Inter-Connects between adjacent Customer Hosting Units – Clients can choose to install a Customer specific patch panel for managing inter-connect cabling between their adjacent Hosting Units and will be responsible for maintaining such patch panels
- JSE recommends a Customer patch panel be considered when a client has more than 6-10 Cross Connects or inter-connects into their Hosting Unit, or if they want to have flexibility in adding/changing Cross Connects without point to point connections
- JSE can assist in providing local service provider contacts for the purchase and structured cabling setup for Customer Patch panels within a Hosting Unit – however the JSE will assume no responsibility for the patch panel once installed
- JSE data centre staff will assist with the setup of the structured cabling between Customer patch panels and will charge for this on a time and material basis
Colocation Service Update

Monitoring

- JSE has installed Corvil for monitoring and measurement of all JSE network traffic in Colocation
- Dimension Data is the local supplier assisting JSE with Corvil
- Monthly monitoring reporting on SLA monitoring will be based on basic Corvil reporting
- Colocation SLA monitoring:
  » Original proposal was to provide SLA reporting of 100 microseconds average round trip latency for Colocation clients
  » To provide more accurate latency reporting to clients contracted network SLA of 100 microseconds will be measured and reported as follows:
    » 50 microsecond in-bound message rate
    » 50 microsecond out-bound message rate
Work is in progress to complete the new JSE Meet-me-Room and Network Service Provide (NSP) agreement and policy document

These will cover requirements for the provision of telecommunications connectivity (on sellers of bandwidth and connectivity) and equipment in the JSE Meet-Me-Room as well as the minimum requirements to be met by telecommunication providers who wish to facilitate connectivity into Colocation

Agreement will be signed by all telecommunications providers

Only those telecommunication providers wishing to facilitate connectivity into Colocation will need to be accredited by the JSE in accordance with the principles set out in the NSP policy

Once policy document is issued in April – JSE will allow an initial grace period for those wishing to obtain NSP accreditation e.g. 4 month period within which to qualify
## 2014 Key Market Facing Dates

As communicated in Nov 2013 – remaining key dates for Mar/Apr/May 2014

<table>
<thead>
<tr>
<th>#</th>
<th>Date</th>
<th>Description</th>
<th>Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>15 Mar 2014 29 Mar 2014 5 Apr 2014 3 May 2014</td>
<td>Colocation Customer Take-on</td>
<td><strong>All Markets</strong> - Booked Colocation Customers for connectivity tests</td>
</tr>
<tr>
<td>2</td>
<td>21 Mar 2014 Contingency: 29 Mar 2014</td>
<td>JSE London PoP migration</td>
<td><strong>Equity Market</strong> - All JSE London PoP Clients for connectivity tests</td>
</tr>
<tr>
<td>3</td>
<td>5 Apr 2014 Contingency: 3 May 2014</td>
<td>Colocation Client Take-on for Remote Management via the JSE London PoP</td>
<td><strong>All Markets</strong> - Booked Colocation Clients - connectivity tests</td>
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### 2014 Key Market Facing Dates

As communicated in Nov 2013 – **remaining** key dates for Apr/May 2014

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<tr>
<td>4</td>
<td>5 Apr 2014</td>
<td>Colocation Customers Take-on for Remote Management via the JSE London PoP</td>
<td><strong>All Markets</strong>&lt;br&gt;- Booked Colocation Customers for connectivity tests</td>
</tr>
<tr>
<td></td>
<td>Contingency: 3 May</td>
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<tr>
<td>5</td>
<td>10 May 2014</td>
<td>Cut over and go-live weekend for Colocation Customers</td>
<td><strong>All Markets</strong>&lt;br&gt;- All Colocation Customers</td>
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</tbody>
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2014 Participant Test Weekends (PTWs)

- Remaining Equity Market Participant Test Weekends (PTWs) for 2014
- Post go live of Colocation, clients can use the PTWs (run in PROD) for LCON of new trading enablements via Colocation as well as client unscripted testing of their Colocation applications/solutions

<table>
<thead>
<tr>
<th>PTW Date</th>
<th>Cut-off Dates for Bookings (12h00 SAST)</th>
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<tbody>
<tr>
<td>Sat, 12 April 2014</td>
<td>Friday, 28 March 2014</td>
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<tr>
<td>Sat, 10 May 2014</td>
<td>Friday, 25 April 2014</td>
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<td>Sat, 14 June 2014</td>
<td>Friday, 30 May 2014</td>
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<td>Sat, 12 July 2014</td>
<td>Friday, 27 June 2014</td>
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<td>Sat, 16 August 2014</td>
<td>Friday, 1 August 2014</td>
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<td>Sat, 13 September 2014</td>
<td>Friday, 29 August 2014</td>
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<tr>
<td>Sat, 11 October 2014</td>
<td>Friday, 26 September 2014</td>
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<tr>
<td>Sat, 8 November 2014</td>
<td>Friday, 24 October 2014</td>
</tr>
<tr>
<td>Sat, 6 December 2014</td>
<td>Friday, 21 November 2014</td>
</tr>
</tbody>
</table>
Change Management

- Emergency and Planned changes
- High level change process as per Services Documentation which includes best practise standards for implementation of changes into a production environment
- No changes will be allowed without the correct documentation or approval in place
- Summary of change activities permitted / not permitted
  - Trading hours
    - No changes except critical **approved emergency** changes
    - Equipment installation, setup and connectivity will **not** be permitted
  - Non-trading hours
    - **Approved planned and emergency** changes
    - Equipment installation, setup and connectivity will **be** permitted
  - Non Business days
    - No changes except critical **approved emergency** changes
    - Equipment installation, setup and connectivity will **not** be permitted
JSE enhanced London Point of Presence (PoP) services offered to clients and to address the reliability as well as the functionality available to clients.

The JSE international links **成功地替换在上周五** through a new service provider and two different telecommunication providers will be used for the last mile connectivity from the UK landing site to the JSE London PoP in LD4 – thank you to all clients who assisted with proving the change.

The new JSE international links are Layer 3 circuits and will therefore allow for dedicated international bandwidth to be procured by the JSE on behalf of its clients for trading and/or colocation remote infrastructure management connectivity.

Ports will be provided to facilitate connectivity for both primary and secondary connections to the JSE Production Site, as well as the JSE Remote Disaster Recovery site.

Clients can decide what bandwidth they require for trading and/or colocation management connectivity and the cost of bandwidth will be quoted on request.
The JSE, as previously communicated, identified the need to replace the technology platform for the Equity Derivatives Market.

At the same time the JSE has set a strategy for 2017, key aspects of which are Integrated Trading & Clearing.

The JSE has concluded the analysis on the best way to proceed for the Equity Derivatives Market which has informed a broader JSE decision to embark on a strategic journey to transition all Derivative Markets and the Interest Rate Market across to a single new Trading System and a single new Clearing Solution. This extensive programme of work for all the markets will be phased over a number of years.

We firmly believe that this strategic journey is critical to the JSE enhancing the quality of our products and services to the South African and global financial community.
The JSE still needs to satisfactorily conclude final contract negotiations with the potential vendors early in the new year.

All the Derivative Markets and the Interest Rate Market will take at least a 3 year period commencing with the replacement of the Equity Derivatives Trading and Clearing platforms.

Planning of the various project phases will be done in such a way that the change can be digested by both the JSE and our clients.

The JSE also has to balance the start date of the programme with other competing priorities and projects that are already underway such as T+3 and Colocation, and we will engage with our clients in the new year on the potential timing of the programme.

The Equity Market transition to the single new Clearing Solution will be dealt with later in the Programme.
The ITaC project has been initiated and is currently in high level design. High level design, scope and time line is expected to be completed by mid 2014.

Project governance structures have been agreed internally.

JSE has satisfactorily concluded final contract negotiations with the potential vendors and the agreements are going for approval to a JSE Board sub-committee on 3 April 2014.

During the high level design phase, the JSE will be engaging with sample participants from all the markets to gather input on various high level business and functional considerations that may impact design e.g. front ends, trade reporting, publication of open interest, etc.
Programme Phasing / Legacy Platform Considerations

During 2013 STT developed a technical roadmap to advance their solution which requires transition to a new architecture (major software release)

We have had to consider the requirements for further functional enhancements vs the effort for both the JSE and our clients to transition to the new STT architecture.

In considering the entire ITaC programme and its impact on our clients, the JSE has made the following principle decisions:

- We will not implement the STT technology roadmap / new technology architecture and therefore we will implement one final STT functional release in 2014 with the exception of releases required for big fixes or regulatory requirements.

- In considering the business needs, we are investigating bringing Currency Derivatives into the Phase 1 scope of ITaC i.e. with Equity Derivatives. As part of this we will consider go-live risk which may or may not mean a staggered deployment / go-live approach for Phase 1.
T+3 Project Update
T+3 Agenda Items

- Recap of previous communications
- High level status update
- Phase 2 scope reconfirmation
- Next steps
Recap of Previous Communications

In the last hotline distributed to the Market, the following was communicated:

- The T+3 Project is introducing a number of complex changes to the JSE’s systems
- Extensive testing has been conducted by the JSE but it was felt that these complexities need to be tested further
- A decision was made by the JSE to add two additional System Integration Testing (SIT) cycles into the current T+3 Phase 2 test programme - the two additional testing cycles would mitigate some of the implementation risk
- As a natural consequence of this, Phase 2 User Acceptance Testing (UAT) would commence during May 2014
Phase 2:

- Currently executing System Integration Testing Cycle 5
- 2 cycles of System Integration Testing were added to do additional testing on the complex integration between the two systems
- It is likely that the implementation of Phase 2 will be done in a staggered approach. This is being considered in an effort to minimise the risk during the implementation
# Phase 2 Scope Reconfirmation

<table>
<thead>
<tr>
<th>Phase</th>
<th>Summary of changes</th>
<th>Benefits</th>
</tr>
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</table>
| Phase 2 (ECS Go-live T+5) | • ECS (First Phase)  
• Deal Management  
• Prime Broking  
• Technology Roadmap Upgrade (ECS) | • Introduction of the new equities clearing system which allows more automation in terms of clearing and settlement in preparation for the move to T+3  
• Automation of Prime Broking transactions between executing broker and prime broker will enable prime broker to:  
  • easily identify prime broking transactions; and  
  • automation in managing settlement risk on prime account  
• Will enable market participants to achieve settlement commitment on T |
Next Steps

Phase 2:

- Conclude System Integration Testing (SIT) Cycles 5, 6 & 7
- The next checkpoint to confirm the start of User Acceptance Testing (UAT) will be in mid-April

Phase 3:

- JSE will communicate final go-live dates in due course
Equity Market Clearing and Settlement Billing Model
Proposed Clearing and Settlement Fee Model consulted on during January and February 2014:

- Value Based Model with parameters as follows:
  - % charge: 0.0036%
  - Cap: R 150
Market Consultation

- All members were sent an impact analysis pack in December 2013.
- Formal consultation took place through January and February 2014.
- Far fewer responses received (relative to the Equity Trading Fee review) to both the invitation for a one-on-one session as well as in the formal feedback forms:
  - 14 feedback forms received by mid February 2014
  - 19 one-on-one member consults conducted through January and February 2014.
Client Feedback

- Feedback from both one-on-one member consults and feedback forms received indicate general agreement with proposed methodology.
- Some concern expressed around increase in HFT type activity with no floor present and JSE asked to consider alternatives to limit “noise” in the market.
- General concerns with levels of JSE revenue on the whole.
Accounting for client feedback together with revised activity considerations, notice will be given to Equity Market members on 24 March 2014 for go-live on 30 June 2014 based on the following parameters:

- % charge: 0.0034%
- Cap: R130
Ongoing Considerations

- Continuous monitoring of market volumes and trading behaviour changes due to new Trading Fee Billing Model introduced on 30 September 2014

- Incentive schemes (incl. market making schemes, activity based discounts, etc.)

- Further trade type billing and regulation analysis (incl. ODs specifically)

- BDA Billing Model Revision
  - First workshop held with JSE Equity Market Members
Future of TALX product offering

The JSE will no longer be providing the TALX front end for Equity Market clients. This will now be provided directly by SunGard from the JSE colocation facility in their accredited SIP capacity.

The current JSE support structure will remain in place until all clients have transitioned.

Thereafter clients will need to log software related issues with SunGard directly.

Thank you to all our clients for their support over the last 12 years!
Phase 1 of the new JSE Invoices only applicable to JSE Equity members

New Invoices have been running in parallel since October last year

Thanks to all who took the time to check and provide feedback to the JSE during this parallel period

New invoices will go-live with March 2014 month-end

Please communicate any issues and/or request for further changes to Customer Support
Questions?

Refer queries to:

CustomerSupport@jse.co.za

+27 11 520 7777