

JSE ITAC INITIATIVE

Frequently Asked Questions

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Frequently asked questions – General:

What is ITaC?

“ITaC” is the abbreviation used for the JSE’s *Integrated Trading and Clearing* initiative. The ITaC project is a multi-year programme of work focused on the introduction of an integrated solution for the JSE’s trading and clearing services.

What does the ITaC project aim to achieve?

The objective of the project is to implement world-class, multi-product solutions to enhance the JSE’s current trading and clearing functions: on the trading side, that means migrating all Derivatives and Cash Bond markets to the MillenniumIT (MIT) trading platform, while for clearing, it involves the migration of all markets onto the new Cinnober Real-Time Clearing (RTC) solution.

Once complete, the ITaC implementation will bring about:

- Greater cross-market harmonization
- A faster, more stable technology platform aligned to international standards
- More robust and flexible Trading and Clearing systems with separate APIs for each
- Richer end-user functional capabilities (specifically in the clearing space)

Why is the JSE undertaking this project?

The JSE is committed to offering clients the best services on world class systems, and it is with this in mind that we have initiated the ITaC project. Spurred by the success of the MIT Trading system implementation for the Cash Equities market (and the considerable performance benefits it introduced), the JSE aims to extend these enhancements to the remaining markets, as well as substantially upgrade its clearing capabilities.

Additionally, ITaC will help realize two of the major strategic objectives of the JSE – Integrated trading and integrated Clearing.

The introduction of new, internationally recognised systems means the JSE will strengthen its position as a global market player, providing more a stable and efficient trading and clearing services to its clients.

How is the project structured?

The project is being implemented in a phased approach, and the JSE is currently determining which markets will be migrated when.

Our intended approach is to implement the trading and clearing capabilities for a particular market simultaneously, and that migration of multiple markets at the same time will be considered where possible. As it stands, the proposed schedule of implementation is as follows:

1. Equity Derivatives / Currency Derivatives
2. Interest Rate Derivatives / Commodity Derivatives / Cash Bonds
3. Cash Equities

What are the JSE's Design Principals and Approach to the ITaC Project?

The JSE's Integrated and Clearing Solution will be phased-in over a number of years, which will also include the clearing of Equities. While we will leverage economies of scale and make use existing JSE systems where possible, certain non-trading and non-clearing functions will be moved to systems built for purpose. This will include, for example, Reference Data, Statistics and Billing. We will be using out-of-box functionality that is aligned to international standards where possible, with a separation of the Trading and Clearing systems, each with its own API.

Who are the JSE's partners / service providers in this project?

The JSE will be partnering with 2 solution providers for the execution of the ITaC project:

- MillenniumIT (MIT): The current provider of the trading solution used for the JSE's Cash Equity markets, MIT's Millennium Exchange product – a low latency, flexible and scalable multi-asset class trading platform - will be rolled out to the remaining markets. MIT is a provider of trading software to a number of the leading global exchanges, including the London Stock Exchange, Borsa Italiana, EuroTLX, Oslo Bors and HKEx.
- Cinnober: The JSE will replace its current clearing technology with Cinnober's TRADExpress RealTime Clearing solution - a single, multi-asset real-time clearing platform. Cinnober is a provider of solutions across the capital markets transaction chain, and provides clearing solutions to the likes of BM&F Bovespa and LME Clear.

When will project go-live?

The JSE is currently involved in detailed design and planning for the ITaC project, and will announce its proposed implementation dates to the market in due course.

Due to the extensive changes being introduced, it is expected that the roll-out of the project will take place over a number of years.

Frequently asked questions – Clearing:

Why is the JSE replacing its Clearing systems?

Modern clearing requirements and the evolving regulatory landscape have resulted in a significant increase in the technology demands for exchanges worldwide. ITaC seeks to process all asset classes from all markets on a single integrated solution as well as enable our strategy for growth.

The new Integrated Clearing platform will unlock opportunities for centralized and more sophisticated risk management, allowing risks to be viewed across markets and facilitating the move to more real-time and proactive risk management. It will also provide the opportunity for more efficient use of assets through cross-market margin offset (where appropriate), cross-collateralisation and the acceptance of non-cash collateral. Consolidation and standardisation of Clearing and Settlement operations and processes is another key driver of the Integrated Clearing initiative.

Why has the JSE partnered with Cinnober for the Integrated Clearing solution?

The JSE has selected Cinnober as its partner for the development of the new multi-asset clearing technology platform. The new platform is based on Cinnober's high-performance and proven TRADExpress RealTime Clearing system, and

will phase out the current clearing technology at the JSE. The implementation of the new platform is a direct enabler of the JSE's strategic focus on integrated clearing and settlement.

Cinnober has solid experience in delivering clearing solutions to leading exchanges and marketplaces around the world.

Who are the Independent Software Vendors that Clearing Members can partner with for the provision of Clearing front-ends?

The JSE will be providing a list of JSE-endorsed ISVs that will be providing front-end solutions as part of the ITaC initiative. In addition, the JSE will publish a list of the base functions required to be catered for by any ISV offering a front-end service (covering trading, clearing, risk management etc.).

What are the bandwidth impacts on Clearing Members?

The JSE will in due course be providing information that can be used by Clearing Members to analyse and estimate their bandwidth requirements. Clearing Members will be able to connect to both the Trading and Clearing systems with a single line. The final bandwidth impacts will of course be different for different Clearing Members, depending on the activities that Clearing Member engages in and their associated volumes.

Are trading performance (low latency) objectives being pursued to the detriment of risk management and the protection of the integrity markets?

While achieving low and consistent latency for all the JSE markets is a key objective of ITaC, the JSE will ensure that the right level of pre-trade risk management controls are in place in the new solution, so as to protect market quality and integrity. Examples of the proposed pre-trade controls are:

- Trading permissions;
- Limits (market-wide and entity limits);
- Price monitoring; and
- Protection mechanisms such as circuit breakers and order monitoring and cancellation capabilities.

The JSE is working with our Trading and Clearing solution providers (and engaging Clearing Members and other market participants) on the proposed design of these aspects of the solution.

In addition to the various pre-trade risk management controls being considered, the JSE is intending to introduce an intraday risk monitoring solution to allow the Clearing House and market participants to monitor and manage participants' risk more proactively. This solution involves the calculation of portfolio exposures and other risk measures as trading and deal management proceeds throughout the day and comparison of these measures to predefined limits (with alerts being generated in the event of limit breaches).

How are the proposed intraday margin calls different to what is catered for today?

The JSE currently caters for ad-hoc intraday margin calls, which can be executed at the JSE's discretion in periods of extreme volatility and which would involve the calling of initial margin and variation margin. This capability will be retained. What is being considered in addition is the introduction of daily, scheduled intraday margin calls involving the calling of variation margin. This is subject to the satisfactory resolution of a number of practical and timing issues. The JSE will continue consulting with Clearing Members in this regard.

How will deal management, position keeping and other functions be affected by the decoupling of the Trading and Clearing systems?

Although the Trading and Clearing systems will be decoupled, trades will feed down to the Clearing system in real-time and will be pushed out on the Clearing system gateway to allow deal management activities to proceed throughout the day (as happens today).

The Clearing system will calculate positions as it receives trades from the Trading system and as deal management is performed. Position updates will be pushed out on the Clearing API in near real-time (2-5 seconds). Participants who require position keeping in real-time will be able to calculate positions themselves by interfacing to the MIT solution (to receive trades) and to the Clearing API (to receive deals resulting from deal management activity).

The JSE is proposing to publish Open Interest on a snapshot basis via the MIT market data gateway.

Contracts created dynamically intraday will be available on the Clearing API in real-time. Similarly it will be possible to load and maintain new clients dynamically intraday via the Clearing API.

Frequently asked questions – Trading:

Why is the JSE replacing its Trading systems?

The JSE's Derivatives Trading solution is a locally developed solution that has been tailored to the unique requirements of the individual derivatives markets and its market participants. Built for a South African ecosystem, maintaining a low cost base was a key necessity for our emerging markets. The resultant system (with a proprietary API, little known to international players), is tightly coupled between trading and clearing and has become uncompetitive internationally with regards to latency. Our new trading solution will allow the JSE to compete on the global market stage in terms of speed and latency. By decoupling trading and clearing in our new solution, the JSE's respective strategic objectives for trading and clearing will be realised.

Will the JSE be providing a front-end for Trading and Deal Management?

While it was absolutely necessary in the early stage of our market development to provide a Trading and Deal Management front-end, the provision of a trading front-end by the JSE will be discontinued as part of the ITaC project.

What protocol will the JSE be using for the various gateways in the new solution?

MillenniumIT's internationally recognised open API will be used in our new solution. The Trading Gateway for all derivatives will be in the Native protocol (i.e. no FIX solution), which will help in reducing bandwidth requirements. A Drop Copy Gateway, which allows for a drop copy of all order management data, will be available in FAST/FIX. Off Book Trade Reporting will be facilitated through the Post Trade Gateway's FIX solution.

The Market Data gateway for all derivatives will be in the MITCH protocol (Millennium Direct Data Feed based on the ITCH protocol) (i.e. no FIX FAST solution).

What level of latency can be expected?

The solution latency target will be similar to what is achieved currently in the equities market. Access from the Co-Location facility at the JSE will further reduce the effective latency experienced by users of the market.

What are some of the high-level solution changes?

Separate gateways for Trade Reporting, Order Management and Market Data will allow for a separation of On Book (Central Order Book) and Off Book trading. Trader log-on's and cancel-on-disconnects will now be handled via the Interface User, also known as the CompID. Message routing for Member Branches will now be facilitated via your Independent Software Vendor (ISV) solutions.

What trading enhancements can we expect with the new solution?

Some of the high-level trading enhancements the new solution will cater for will be configurable trading strategies and order types. We will be consulting with the market around these new features prior to each being implemented.