

# Singapore Exchange adopts Financial Information eXchange Protocol to strengthen position in global financial markets





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**With continued globalisation of world markets and ensuing intensified competition, the Singapore Exchange Limited [SGX] had to further augment its market position as a leading global financial hub to attract greater interest from international investment houses and institutions.**

**A means to achieving this was to deliver greater investor access to the island republic's market than was currently available via SGX' proprietary SESOPS trading terminals [Stock Exchange of Singapore Order Processing System].**

During 2000 SGX embarked on a strategic plan that would improve means for accessing its markets. Understanding 'global competition' was integral to its ability to provide a more open trading platform. SGX underwent a major paradigm shift to facilitate detachment from the "closed" proprietary trading environment where dealer representatives could only access Singapore's securities markets through its proprietary systems.

SGX's global market initiative was realised in March 2001 with the launch of SGXAccess for the securities market. SGXAccess was developed as an open interface technology based on the global financial messaging interface standard; the Financial Information Exchange protocol [FIX]. FIX would enable computer-to-computer connections between SGX and its market participants. FIX would provide direct access to the SGX' matching engine, allowing market participants to trade in Singapore's securities market from anywhere in the world, via alternative front-end trading terminals and order management systems procured or developed by the member firms. With SGXAccess platform the SGX was now able to provide global access to its securities market.

Following the launch of SGXAccess, several local and international Members have also implemented FIX for their trading needs.

### **Background to Singapore Exchange Limited**

The SGX was formed in December 1999 following the merger of the Stock Exchange of Singapore [SES] and the Singapore International Monetary Exchange [SIMEX]. SGX is Asia-Pacific's first demutualised, integrated securities and derivatives Exchange.

Leveraging the combined strengths of Stock Exchange of Singapore and Singapore International Monetary Exchange, its broad range of products and services, strong international alliances, and technologies, SGX established itself as a leading integrated Exchange and endeavored to expand its presence in the global financial marketplace. On November 23, 2000 SGX became the first Exchange in Asia Pacific to be listed via public offer and private placement. SGX is listed on its own Mainboard, and its Members include UBS, Nomura, Citigroup, Merrill Lynch, DBS Vickers Securities, CLSA, J.P. Morgan and Credit Suisse First Boston.

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SGX manages its diverse operations through five wholly owned subsidiaries: Singapore Exchange Securities Trading, The Central Depository, Singapore Exchange Derivatives Trading, Singapore Exchange Derivatives Clearing, and Singapore Exchange IT Solutions. SGX securities products include equities, warrants, Exchange Traded Funds (ETFs) and Real Estate Investment Trusts (REITs), while derivatives include major international interest rates and Asian equity index futures and options.

SGX aims to build an enduring marketplace, and to be a hub for Asian derivatives contracts and listings, both local and foreign.

## Adopting FIX - the challenge for the Singapore Exchange

FIX was traditionally deployed in the global securities industry for the buy-side to facilitate order routing by clients to broking houses. SGX was the first major Exchange to adopt and implement FIX on the sell-side to facilitate seamless access and straight-through processing into its trading engine. The major challenges facing SGX for the adoption of the FIX standard were:

- i) Managing resistance to the strategic paradigm shift to providing "open access" to the trading engine, and
- ii) Encouraging marketplace adoption of SGXAccess.

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"When we embarked on SGXAccess, we had to start from ground zero with our knowledge on FIX and FIX engines. The steep learning curve and the ambitious project timeline compounded the challenge for the implementation team. We are grateful for our Members' support to make SGXAccess a success," said Chew Hong Gian, Executive Vice President and Head of Technology at SGX. "As early adopters, International Members were quick to reap the benefits of open access. Local Members, who were heavy users of proprietary trading terminals provided by SGX gradually made the transition as well. Besides education, SGX adopted a two-pronged approach to encourage industry adoption: firstly, offering incentives and setting up a dedicated unit to market SGXAccess, and secondly, setting up a fully staffed SGXAccess Test Centre to provide technical support to Members."

## Adopting FIX - major considerations for SGX

The operating conditions for SGXAccess were very demanding. Market participants would not tolerate any downtime, inferior performance in response time and inferior functionality of the SGXAccess platform, any of which would have an impact on their ability to gain access to the market. To meet operational standards, stringent

requirements were specified for the development of the SGXAccess trading gateway to ensure that it is a technically superior platform for future growth.

On the technical side, the important considerations for adopting FIX for SGXAccess platform were:

- i) Robust application with high availability capability,
- ii) High performance,
- iii) Customisation of the trading engine to support FIX, and
- iv) Delivery of functionalities similar or superior to those offered by SGX's proprietary trading terminals.

## SGX FIX Implementation - 2001

SGX approved FIX implementation of SGXAccess in August 2000. The solution was deployed seven months later in March 2001, utilising an off-the-shelf FIX engine. Following FIX implementation, the immediate benefits of the protocol for Singapore Exchange were the open access platform to the securities market based on a global standard, ease of connection for Members, and ease of establishing co-trading links with global financial markets and industry players.

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SGX implemented FIX protocol version 4.2 to provide open access for enabling seamless electronic order routing into the SGX securities market. The broader benefits for the market participants were threefold.

Firstly, greater choice of products and services. SGXAccess gives Members the flexibility in choice of front-end trading solutions to suit their business needs. Therefore they could deploy sophisticated multi-market, multi-functional trading terminals, with plug-in news services, research papers, charting tools, etc. Members and investors could take advantage of SGXAccess to implement more sophisticated trading strategies, such as program trading, etc. This flexibility would enable them to innovate and differentiate their products and services for competitive edge.

Secondly, improved management control. Members are faced with the necessity to take greater risks competing for liquidity in an increasingly competitive, fast-changing environment. In doing so, they need to be able to manage their risks more efficiently and effectively. SGXAccess enables Members to exercise better capital management and risk management by integrating their risk management strategy and system into the OMS. This measure translates to lower cost of investment to investors and increasing Singapore's competitiveness.

**Through SGXAccess, Members would have the flexibility to trade from any location, via their own trading terminals.**

Finally, a more rewarding transaction experience for Members and clients. SGXAccess enables Members to provide multiple delivery channels for their products and services, such as through the Internet, mobile phones, PDA, etc. These online channels provide alternative, direct access to the marketplace. Clients will no longer need to face the frustration of not getting through to their dealer representatives in any active market day. With the growth of online trading over time, dealer representatives can devote more time and energy to customer relationship management, providing value-added customer service, marketing and financial advisory planning. Through SGXAccess, Members would have the flexibility to trade from any location, via their own trading terminals. It is possible for dealer representatives to be "business-anywhere". They can remain in constant touch with the market and provide uninterrupted service to their customers, as long as they are connected to their office, resulting in improved customer services and operational efficiency.

### **SGX FIX Upgrade - 2004**

SGX decided mid 2003 to upgrade its FIX engine. This decision was actioned August 2004 with the CameronFIX engine selected and installed with SGXAccess, to provide enhanced electronic order routing to the SGX securities market via FIX. SGX also integrated the FIX engine with its order routing and market data trading link for greater connectivity between SGX and other Exchanges.

"There were a number of new developments in the FIX protocol front and in FIX engine technology since our initial engine implementation in March 2001. The existing FIX engine had reached end of life and therefore we took the opportunity to evaluate various market offerings," said Chew. "The CameronFIX engine provided efficient global access to our marketplace through SGXAccess, which is key to our growth strategy for extending our reach and increasing market depth and liquidity."

SGX has taken a further step forward in its strategic thrust to renew its front-end trading technology. Besides upgrading its SGXAccess gateway, it also decided to phase out its proprietary SESOPS trading terminals with a new order management system, known as SGXTrade, based on the open access FIX platform. The rollout of SGXTrade to the industry is currently underway and is expected to be completed by Q4 2004, by which date SGXAccess will be the sole means of accessing the domestic market.

"Upgrading SGXAccess with a new FIX engine was the right decision for SGX," said Chew. "SGXTrade is a high performance order management system. To deliver fast, reliable and responsive access to the marketplace, it requires a fast access gateway to the trading engine. CameronFIX fits the bill. It has been operating reliably since implementation, and the Members are particularly pleased with the superior access to the marketplace made possible by the high performance of the upgraded system."

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### **SGX launch SGX QUEST**

The Singapore Exchange launched SGX QUEST (SGX Quotation and Execution System) in August 2004 for derivatives trading. SGX QUEST provided SGX with an integrated trading engine for securities and derivatives trading that supported a range of new products including Nikkei 225 Futures and Options during the main Japanese trading hours, and sophisticated trading strategies.

## QUEST - Phase One: Derivatives

It is possible that SGX may consider adopting the FIX protocol for derivatives trading on SGX QUEST in future.

SGX QUEST replaces Singapore Exchange's old derivatives trading engine, SGX ETS (Electronic Trading System). The launch of the new trading engine in the Exchange's derivatives market completes the first phase of developing an integrated trading engine for its securities and derivatives market. SGX QUEST will allow participants to trade a wider range of derivatives instruments electronically on SGX, and accelerate the progress toward introducing more electronic-based derivatives products. SGX QUEST offers a platform for global connectivity and broadens its reach to market intermediaries and investors.

## SGX QUEST - Phase Two: Securities

Phase two of the SGX QUEST system for its migration of the securities market is planned for mid 2005. SGX QUEST for securities trading will be implemented on the SGXAccess "open access" platform using the FIX protocol. "The decision for FIX was a strategic one," said Chew, "By adopting global standards, we greatly streamline and simplify Member connection into our marketplace with plug-and-trade ease."

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## FIX powering the SGX domestic market

Globally, FIX is making inroads into many capital markets around the world as a major force in transaction protocol. Likewise, strategically, SGXAccess is strongly anchored for the SGX domestic securities market. SGX has installed CameronFIX at all its trading Members' sites. With SGXAccess, member firms can have direct, seamless access into the trading engine via their own order management system and trading terminals which can be located from anywhere in the world. A number of SGX Members have taken advantage of this flexibility to trade directly into SGX outside Singapore.

## FIX enabling the SGX Link

SGX' FIX strategy is also to employ the FIX protocol for its SGXLink; the technology infrastructure established to facilitate co-trading links with other capital markets. FIX will be used for order routing and market data. The co-trading link with Australian Stock Exchange [ASX], launched 2001, was built on the technology foundation of SGXLink. The SGX and ASX co-trading link is the world's first co-trading link. Investors in Australia and Singapore are the first to co-trade selected securities in each others market directly, through brokers in their own countries, whenever the respective markets were open. **FIX**

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