

# Electronic trading trends in Asia

*Technologies for connectivity and risk management*

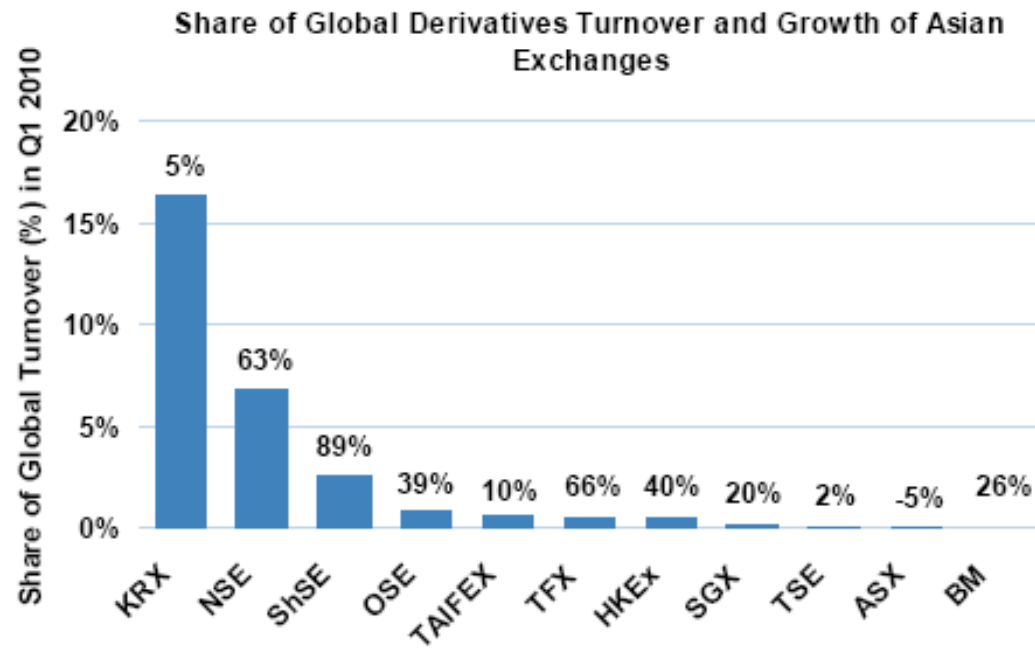
KWONG CHENG

GLOBAL ACCOUNT MANAGEMENT

# Electronic Trading Drivers in Asia

- Growing trend of high frequency, algorithmic trading in Asia region
  - Increase demand in CME proximity hosting and co-location services
  - Any methods to minimize latency
- Different regulatory requirements impact market access depending upon region
- Consolidation of front-ends; desire to access as many global markets as possible from few, key, front-ends; cost effective
  - CME Group's Partner Exchange initiatives of great interest
- Increasing interest in local hub connectivity to serve as primary market data distribution vehicle; reduce burden on customer WANs
  - CME Seoul hub launched in April 2009; Kuala Lumpur hub launched in May 2010
- Risk management tools a high priority for clearing firms and trading customers to better manage their risk exposure
- Local, personal customer service and proactive communications

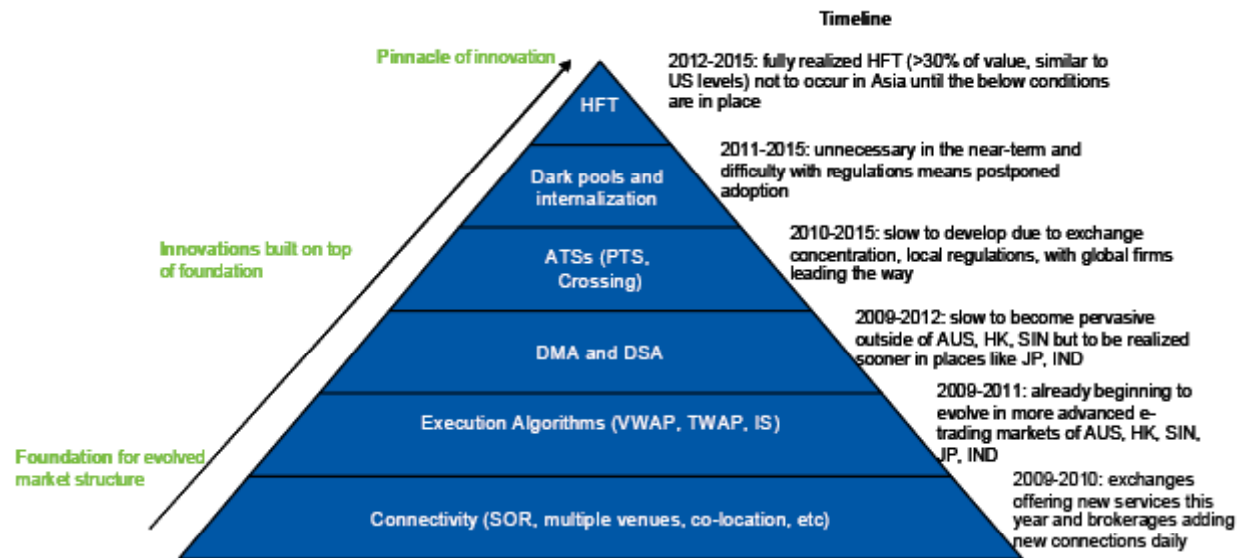
# Derivatives Size and Growth of Asian Exchanges



Source: WFE, Celent

□ Share of global derivatives turnover in the first quarter of 2010 along with the CAGR over 2005-2009

# The Evolution of the Asia-Pacific Market Structure and HFT



Source: Celent

❑ The innovations in trading required to support the evolution of the e-trading market structure in Asia

# What is Globex?

## The Complete Trading Experience

### *Technology:*

- Intellectual property
- Speed
- Reliability
- Industry standard-based interfaces (iLink & MDP FIX/FAST)
  - Order routing infrastructure
  - Market data distribution infrastructure
- Match engines
- Trading software
- Connectivity
  - Managed network
  - Telecommunications hubs

### *Support:*

- Development support
- Certification
- Order management tools
- Two customer testing environments
  - New Release
  - Certification
- Development staff

### *Markets:*

- Multiple asset classes
- Multiple exchanges
- Global distribution/participation
- Deep liquidity

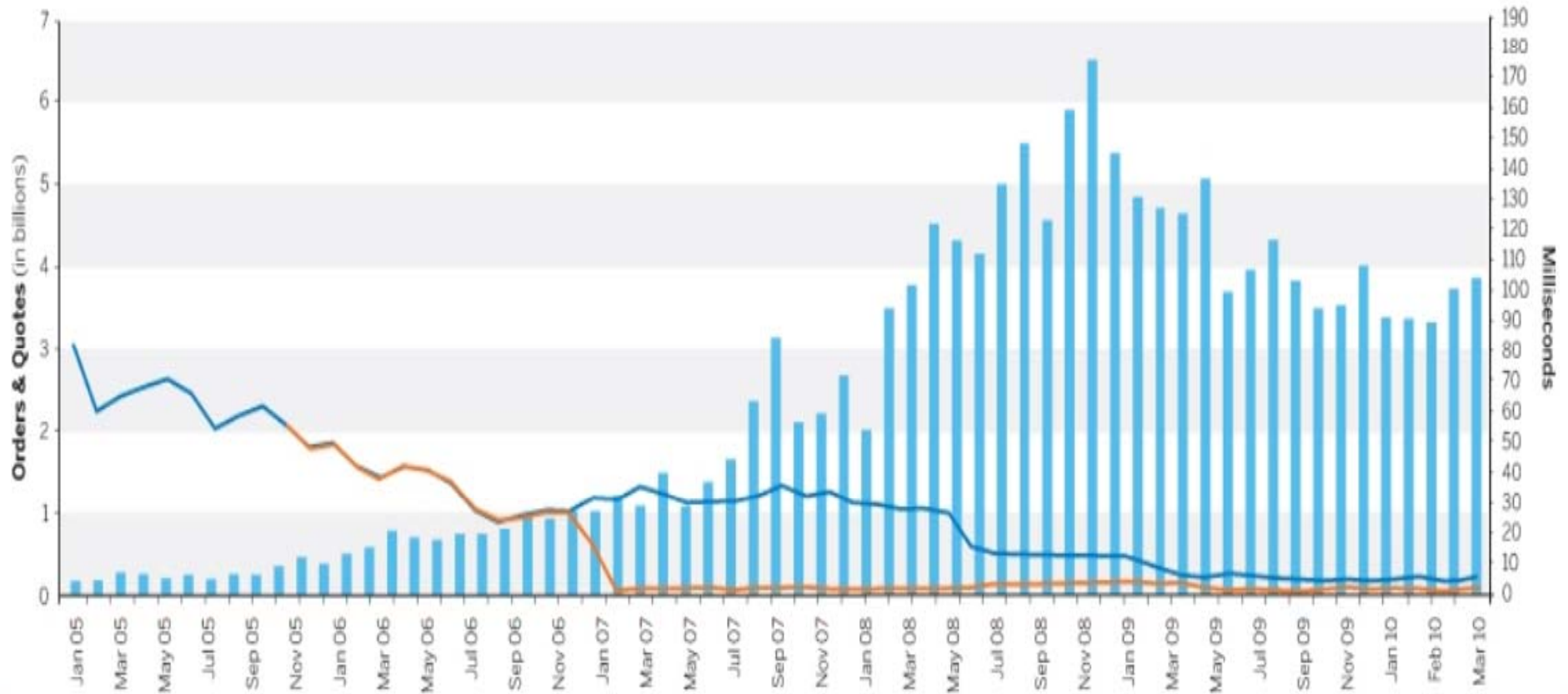
### *Customer Service:*

- 24 hour production support
- Knowledgeable operations staff
- Global account management

# MONTHLY TOTAL ORDER VOLUME VS. AVERAGE ROUND-TRIP TIMES (RTT)

(Jan 2005 – Mar 2010)

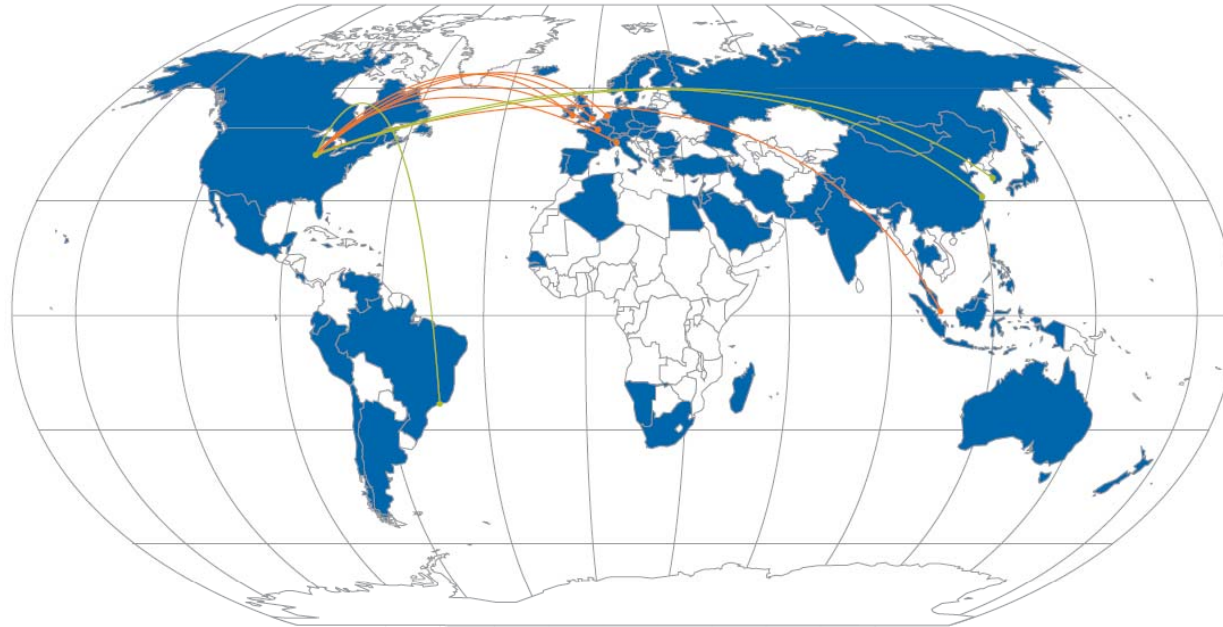
■ Total Order Volume    — Avg. Futures RTT    — Avg. Options RTT



# Global Distribution & Channel Partners

- **Global distribution footprint**
  - Access from over 150 countries and foreign territories
  - Approximately 1200 direct connections
- **Many front-end system providers facilitate trading on CME Globex**
  - Connected entities support thousands of users through proprietary networks and data centers
  - More than 60 Independent Software Vendors (ISVs) have certified to CME Globex
  - More than 194 proprietary systems have certified to CME Globex
  - CME Globex Access Directory lists many ISV & broker systems  
[www.cmegroup.com/globexaccessdirectory](http://www.cmegroup.com/globexaccessdirectory)

# Expanding Global Distribution



- **Nine telecommunications hubs in Amsterdam, Dublin, London, Milan, Paris, Singapore, Kuala Lumpur, Seoul and Sao Paulo**
- **New Kuala Lumpur hub launched in May 2010**

- **Significant emphasis on building out sales, business and product development functions**
- **Emphasis on global emerging market products**
- **37% growth in the number of Singapore DMA customers in 2009**
- **Singapore hub volume has grown 167% in 2008 and 42% in 2009**



# CME Globex Interfaces

## iLink

- Order routing interface to CME Globex
- Based on FIX 4.2 protocol
- iLink “Session ID” is logical connection to CME Globex
  - Permissioned by Clearing Firm

## Market Data Platform (MDP)

- Price distribution vehicle
- Dual feed multicast (UDP)
- Based on FIX/FAST protocol
- IP Channel based
- Bandwidth required based on number of channels customer is “listening” to
- [www.cmegroup.com/bandwidthstats](http://www.cmegroup.com/bandwidthstats)

# Trading on CME Globex: Requirements

Customers must satisfy three requirements to begin trading

1. Establish a business relationship with a **Clearing Firm or broker**
2. Obtain, license or develop a CME Group-certified **trading application**
  - Use an application provided by your Clearing Firm or broker
  - Develop your own proprietary system
  - License from a third-party system provider (ISV)
  - License a CME Group provided application
3. Establish platform **connectivity**
  - Direct connectivity
    - CMEG membership is not required to establish connection to CME Globex
  - Indirect connectivity through a third-party provider (e.g., broker, ISV, datacenter)

# Trading on CME Globex: (1) FCM/Broker Relationship

## Identify the Clearing Firm(s) who will guarantee your business

- Partner Exchange products cleared by Partner Exchange Clearing Firms
- CME products cleared by CME Clearing Firms

## Secure Clearing Firm approval for

- Connection to CME Globex
- Front-end trading system
- Pre-trade risk management access
- 63 CME clearing firms

<http://www.cmegroup.com/tools-information/clearing-firms.html>

**The FCM/broker coordinates the access process for customers who connect through their access**

# Trading on CME Globex: (2) Trading Software

## Obtain, license or develop a certified trading application

- **Obtain an application from the FCM or broker**
  - Many certified applications can be found at [www.cmegroup.com/broker](http://www.cmegroup.com/broker)
- **License from a third-party system provider (ISV)**
  - 60 available, many listed at [www.cmegroup.com/isv](http://www.cmegroup.com/isv)
- **License a CME Group provided application**
  - Contact CME Global Account Management or your FCM
    - CME EOS Trader
- **Obtain an application from BMD**
- **Develop your own proprietary system**
  - Contact CME Global Account Management

# Trading on CME Globex: (2) Software Development

**If you decide to use a proprietary front-end trading system**

- **Contact CME Global Account Management (GAM)**
- **Certify for the following interfaces:**
  - iLink: Order routing interface to CME Globex
    - Based on FIX 4.2 protocol
  - FIX/FAST protocol on the Market Data Platform
    - Scalable, dual feed multicast interface to the CME Globex price feeds
- **Software Development Kits available at**
  - [www.cmegroup.com/globexsdk](http://www.cmegroup.com/globexsdk)

# Trading on CME Globex: (3) Connectivity

**Customers can connect to CME Globex directly or indirectly**

- **Directly Connected**

- Order your own line to CME Globex
  - Both customer and CME Group-managed options available
- CMEG membership is NOT required

- **Indirectly Connected**

- Connect to CME Globex via your broker, CME Partner Exchanges, FCM, Clearing Firm, data center / facilities provider

**If you decide to establish a new, direct connection to CME Group and your Clearing Firm approves, contact CME Global Account Management (GAM) for details**

Access details on web site at [www.cmegroup.com/networkaccess](http://www.cmegroup.com/networkaccess)

# CME Globex Production Connectivity

## Customer-Managed Connectivity

### CME Globex Hubs (Worldwide)

- Access via CME Group-managed hubs
- Amsterdam, Dublin, London, Milan, Paris, Singapore, Kuala Lumpur, Sao Paolo & Seoul
- Client contracts with two local telecom vendors to connect to two hubs in each city

### LNet (Worldwide)

- Access via co-lo facility
- 40 and 100 Mbps

### Client INTERNETLink (Worldwide)

- Access via secure VPN over the Internet
- 0.5 – 20 Mbps

## CME Group-Managed Connectivity

### CME DIRECTLink (U.S. Only)

- CME-managed Ethernet network
- 20,40 and 100 Mbps

All directly connected entities must complete a Customer Connection Agreement (Schedule 1), Access Request (Schedule 2), and Market Data License Agreement (MDLA):

- [www.cmegroup.com/connectionagreement](http://www.cmegroup.com/connectionagreement)
- [www.cmegroup.com/mdla](http://www.cmegroup.com/mdla)

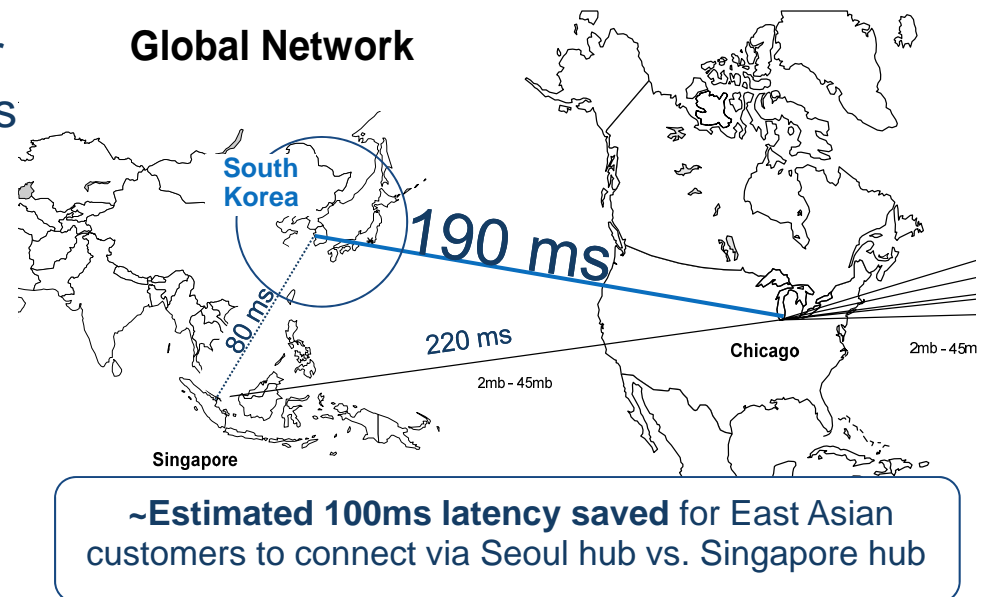
Bandwidth recommendations vary based on market data channel subscriptions, see:

- [www.cmegroup.com/bandwidthstats](http://www.cmegroup.com/bandwidthstats)

# Seoul Communications Hub

Telecom hub in Seoul facilitates CME Group customers connecting from Korea

- Can serve Far East customers for access to CME Group products as well as KOSPI futures
- Costs to connect to hub in Seoul are less vs. connecting through Singapore or U.S.
- Latency is greatly reduced
- Hub launched in **April 2009**
- Consistent with other CME Globex hubs
  - Customer orders their own connections via 2 carriers
  - 20, 40 or 100 mbps redundant connections
  - \$6000 annual hub charge





# Continuous Technology Improvement

## CME Co-Location Services

### **CME Group is launching a co-location offering at our new, state-of-the-art data center in Aurora, Illinois**

- The Phase I co-location suites are currently under construction with expected customer installation in Q3 2011 and production trading in early 2012
- Beginning October 1, 2010 CME Group will begin accepting applications for Phase I occupancy and Phase II expansion
- Phase II occupancy planned 9-12 months after Phase I go live (subject to customer demand)

### **Highlights**

- Lowest latency connection to CME Globex platform, located in the new data center
- Purpose built, high-density data center with significant power
- Room to grow with contiguous space options
- No change to existing connectivity options: LNet, Jackson Direct, CME DIRECTLink, Client INTERNETLink, CME Globex Hubs
- Pricing is transparent and non-discriminatory; all customers treated equally
- Co-location facilities are under the management and control of CME Group and available to all customers

# CME Co-Location Services: Overview

## CME Co-Location Hosting Services

- Licensed Space
- Power
- Data Center Environmentals

## CME Co-Location Connectivity Services

- CME GLink - Equidistant connectivity to the CME Globex platform
- Cross Connects
- Utility Networks

## CME Co-Location Support Services

- Remote Hands
- Shipping & Receiving
- Customer Support Portal

# CME Co-Location Hosting Services

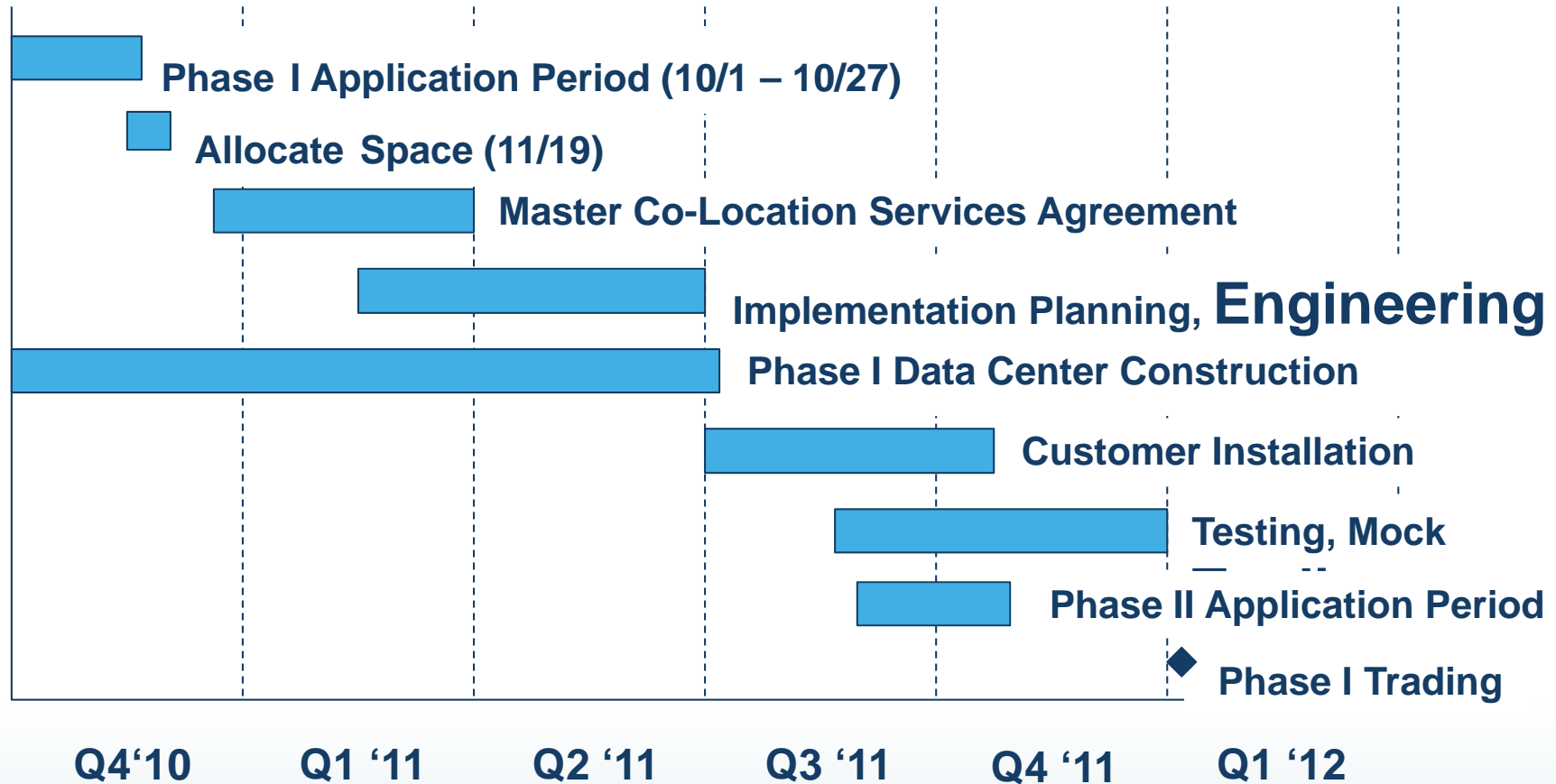
## Licensed Space

- Customers may license CME Group provided cabinets
- Dedicated cages are available in multiples of 7, 8 or 15 cabinets
- Standard CME Group provided cabinet is 32" W x 48" D x 96" H with 52U total and minimum of 48U usable
- Card key access control to all cabinets and cages

## Power

- AC power is available in two tiers of redundant service:
  - 8.5 kW delivered as 2, 208V, 30 Amp 3-phase AC Circuits (one "A" feed and one "B" feed)
  - 17 kW delivered as 4, 208V, 30 Amp 3-phase AC Circuits (two "A" feeds and two "B" feeds)
- Power strips will be available in various configurations, all with intelligent remote control

# CME Co-Location Services Expected Timeline



# CME Co-Location Services: Key Dates

<b>9/21/10 – 9/24/10</b>	CME Co-Location Services announced. Global Account Management distributes application materials upon request, responds to inquiries
<b>10/1/10 – 10/27/10</b>	Co-Location Application Period
<b>11/19/10</b>	Customers notified of space allocations
<b>11/22/10 - 12/10/10</b>	Customer acceptance period

**Contact your Global Account Manager with questions:**

**Chicago +1 (312) 634-8700**

**London +44 20 7796-7100**

**Asia +65 6593 5574**

**[globalaccountmanagement@cmegroup.com](mailto:globalaccountmanagement@cmegroup.com)**

**Visit [www.cmegroup.com/colo](http://www.cmegroup.com/colo) to learn more.**



# Trading on CME Globex: Risk Management

Risk management tools for clearing firms and trading customers to better manage their risk exposure:

- **FirmSoft** - [www.cmegroup.com/firmsoft](http://www.cmegroup.com/firmsoft)
  - A browser-based order management tool that provides real-time visibility into working and filled orders, with order cancel capabilities across multiple firm IDs
- **Cancel on Disconnect (COD)** – [www.cmegroup.com/cod](http://www.cmegroup.com/cod)
  - COD automatically cancels resting session/day futures and options orders for a user when their iLink session involuntarily disconnects
- **Drop Copy** – [www.cmegroup.com/dropcopy](http://www.cmegroup.com/dropcopy)
  - Risk management application where copies of CME Globex order entry responses are delivered to the drop copy customer via an alternate FIX connection
- **CME Globex Credit Controls** [www.cmegroup.com/globexenhancements](http://www.cmegroup.com/globexenhancements)
  - Allow clearing firms to set credit limits and choose a set of real-time actions to follow if these limits are breached, including e-mails notification, order blocking and order cancellation.
- **CME Globex Control Center** - [www.cmegroup.com/gcc](http://www.cmegroup.com/gcc)
  - Production support to registered customers by phone 24 hours a day, from 2:00 p.m. Sunday through 4:45 p.m. Friday, U.S. Central Time

# Contacts & Resources

## CME Group Global Account Management Contacts:

- Singapore office: Kwong Cheng, ph: +65 6593 5574, [kwong.cheng@cmegroup.com](mailto:kwong.cheng@cmegroup.com)
- Shanghai office: Lian Hao, ph: +86 2 16 101 0065, [lian.hao@cmegroup.com](mailto:lian.hao@cmegroup.com)
  - [GlobalAccountManagement@cmegroup.com](mailto:GlobalAccountManagement@cmegroup.com)

## CME Development Support: Certification Support for Electronic Trading Group (CSET)

- Support customers developing iLink and Market Data Platform applications
- CSET is available from Central Time 4:00 p.m. Sunday to 4:00 p.m. Friday
  - +1 312 930-2322
  - [csetgroup@cmegroup.com](mailto:csetgroup@cmegroup.com)

## CME Production Support: Globex Control Center (GCC)

- Support Globex production and problem management to registered contacts via Globex Account Managers.
- GCC is available 24 hours a day, from Central Time 2:00 p.m. Sunday to 4:45 p.m. Friday
  - +1 312 456-2391 or + 44 4420 7623 4708
  - [gcc@cmegroup.com](mailto:gcc@cmegroup.com)

## CME Group Resources:

- CME Globex New Customer On-boarding process: [www.cmegroup.com/globexstart](http://www.cmegroup.com/globexstart)
- CME Globex development documentation: - **iLink:** [www.cmegroup.com/ilinksdk](http://www.cmegroup.com/ilinksdk)  
- **FIX/FAST:** [www.cmegroup.com/fixfastsdk](http://www.cmegroup.com/fixfastsdk)
- Sign up for CME Globex notices and newsletters at [www.cmegroup.com/subscribe](http://www.cmegroup.com/subscribe)



# Appendix A: Development and Certification Overview

**The development and certification process consists of the following steps:**

1. Review Software Development Kit (SDK) on CME's web site
2. Review CME Globex Interface Development Agreement
3. Connect to CME's development environments
4. Develop your applications
5. Certification via Autocert (iLink order entry) and Autocert+ (FIX/ FAST market data)
6. Regulatory certification



# Appendix B: SDKs Documentation

- Please download the iLink and FIX FAST MDP software development kits (SDKs) and certification guide from CME's web site:
  - [www.cmegroup.com/ilink](http://www.cmegroup.com/ilink)
  - [www.cmegroup.com/fixfast](http://www.cmegroup.com/fixfast)
  - [www.cmegroup.com/certsdk](http://www.cmegroup.com/certsdk)
- After reviewing the SDKs please contact GAM at +65 6593 5574 in Asia, +1312 634 8700 in U.S, +44 207 623 2550 in Europe or email [Globalaccountmanagement@cmegroup.com](mailto:Globalaccountmanagement@cmegroup.com)
  - review the CME Front-end Developer's Agreement
  - review the development and certification process.

## Appendix C: CME Globex Interface Development Agreement to access testing environments

- Prior to connecting to the certification and new release test environments, the Schedule A and Schedule B to the Interface Development Agreement are required .
- The agreement and forms are available at
  - <http://www.cmegroup.com/globex/files/IFDevAgrmtSchA.pdf>
  - <http://www.cmegroup.com/globex/files/IFDevAgrmtSchB.pdf>
- These forms need to be signed and returned to the Global Account Managers.
- Certification environments network connection guide are detailed at
  - <http://www.cmegroup.com/globex/files/CertConnectivity.pdf>