

Direct Connection Information Pack (Leased Lines)

December 2019



Agenda

1

Overview

2

SSE Data Scope

3

SSE Data Content

4

Third Party Content

5

Application Flow

6

Network Diagram

7

Historical Peak

8

Connection Fees

1. Overview

China Investment Information Services Limited (CIIS)

- Established in Hong Kong in 1994
- A wholly owned subsidiary of Shanghai Stock Exchange (SSE)
 - To provide licensing and technical connection of real time SSE Level 1 and Level 2 data to overseas information vendors (external use) and end users (internal use)
 - To provide fundamental data service of SSE to overseas information vendors and end users, such as historical data, information disclosed by listed companies in XBRL format, listed company announcement, corporate action information etc.
- Established China Investment Information Platform (CIIP)
 - Technical and sales agent of mainland China exchanges and overseas exchanges market data (Third Party Content)

2. SSE Data Scope

All Level-1 and Level-2 data include all securities listed on SSE:

- Stocks
 - A shares, B shares, Science and Technology Innovation Board (STAR) shares
- Bonds
 - Government bond, local government bond, enterprise bond, convertible bond, corporate bond, bond with detachable warrant, asset-backed securities and SME private debt
- Bond collateral repos
- Funds
 - Open-ended fund, closed-ended funds and ETF
- Options (a separate license is needed)

3. SSE Data Content

Level-1 Data:

- Up to 5 levels market depth
- Update frequency is once per 3 seconds
- Content:
Previous day's closing price, today's high/low prices, last traded price, trading volume, turnover value, five best bid/ask prices and quantities of orders

Level-2 Data:

- Level 2 data includes Level-1 data
- Tick by Tick Information: Real Time Streaming
- Other Information: Once per 3 seconds
- Level-2 data additional information is shown in next slide

3. SSE Data Content

Level-2 Data Additional Information:

Additional Information	Description
Transaction Details	Dynamic number of transactions
	Tick by tick data
Order Information	Total instructed quantities
	Weighted average bid/offer price
	Quantity of each of the top 50 orders at the best bid/offer price
	Quantities of orders at the 10 best prices
Order Cancellation Information	Top 10 stocks in terms of cancelled order quantities
Ranking	Real-time trading value of each sector
	Real-time ranking of top 5 stocks of each sector in terms of traded value
	Percentage of trading value of each sector in the total turnover value.
Yield Rate On Bonds	Real-time yield-to-maturity of bonds

4. Third Party Content

China Securities Index Co, Ltd. (CSI):

- All the indices created by SSE
 - e.g. SSE Composite Index, SSE A share Index, SSE B share Index, SSE 180 Index, SSE 50 Index
- All the indices created by CSI
 - e.g. CSI 300, CSI 500

Dalian Commodity Exchange (DCE):

- Level-1 data
- Level-2 data

4. Third Party Content

Zhengzhou Commodity Exchange (ZCE):

- Level-1 data
- Level-2 data

China Financial Futures Exchange (CFFEX):

- Level-1 data
- Level-2 data

4. Third Party Content

Shenzhen Stock Exchange (SZSE):

- Level-1 data

*Licensing is handled by SZSE.

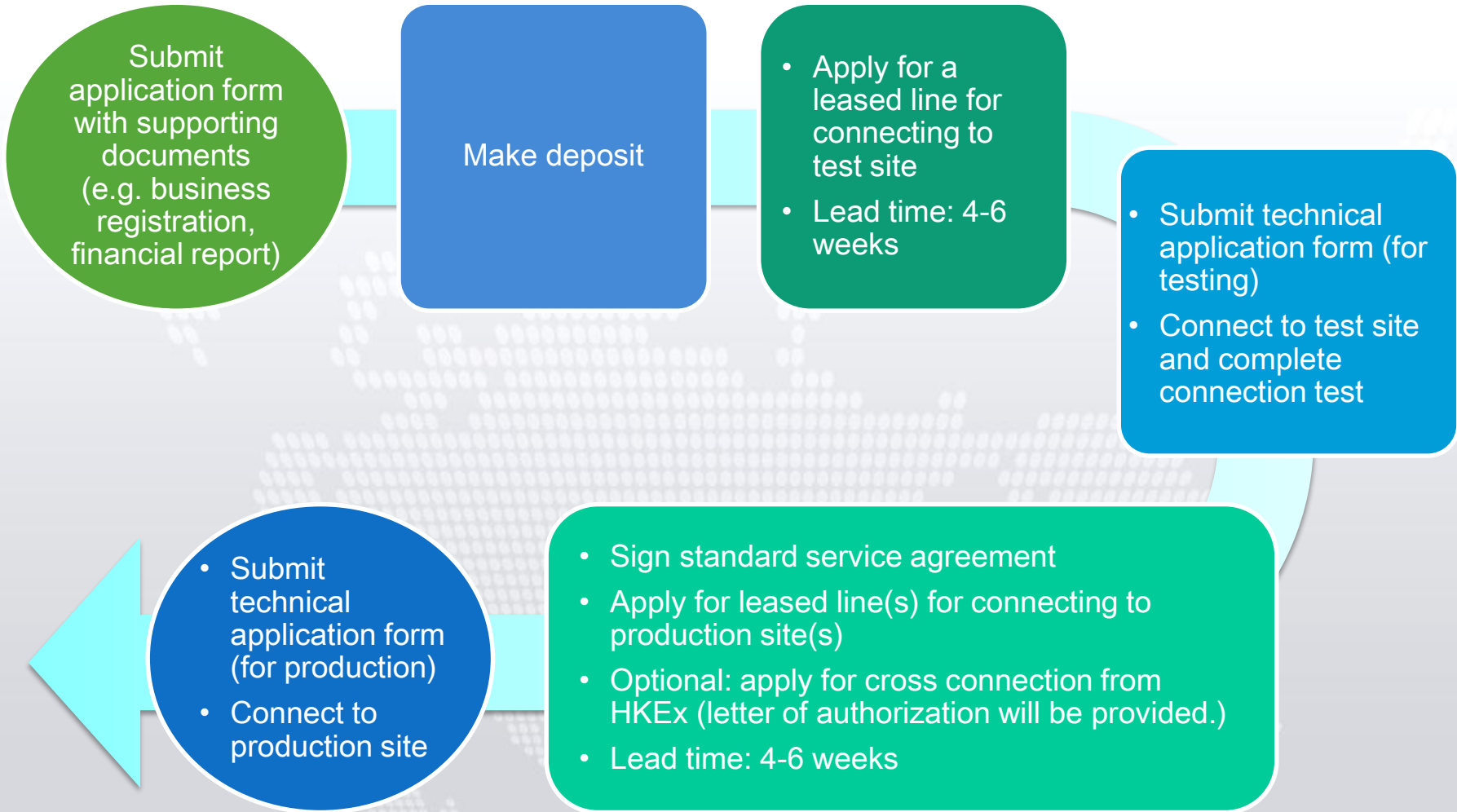
Shanghai Futures Exchange (SHFE) & Shanghai International Energy Exchange (INE):

- Level-1 data

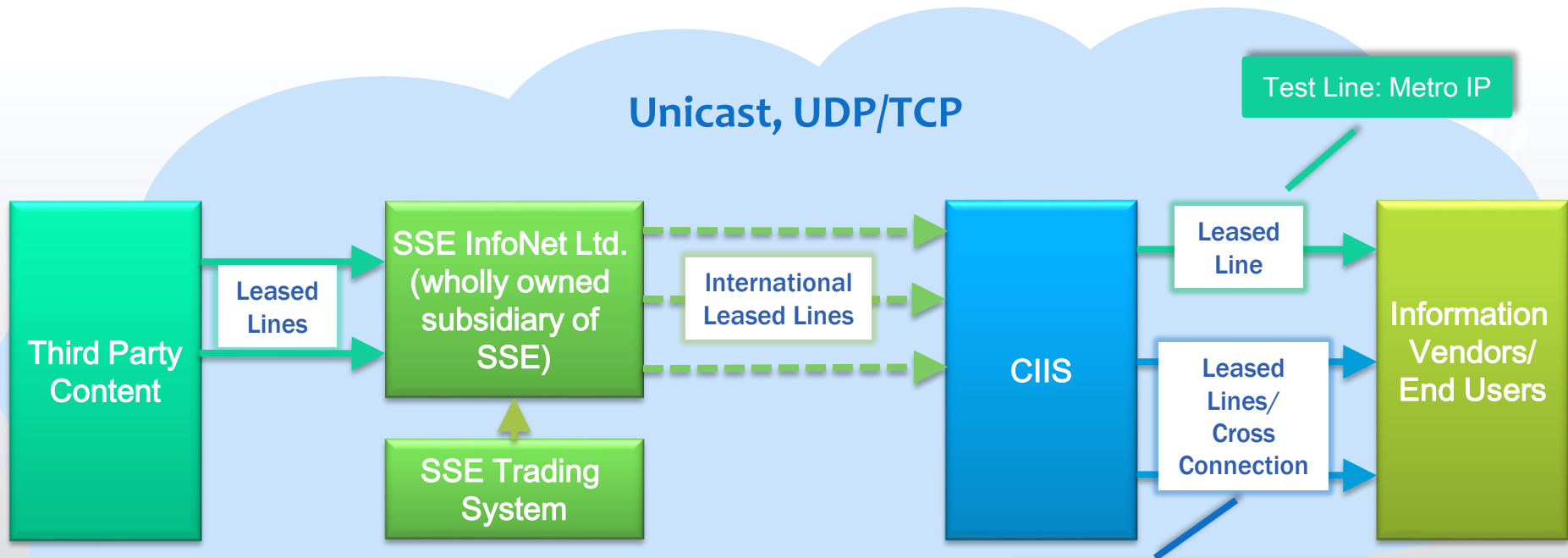
*Licensing is handled by SHFE.

*SHFE & INE only have Level-1 data.

5. Application Flow



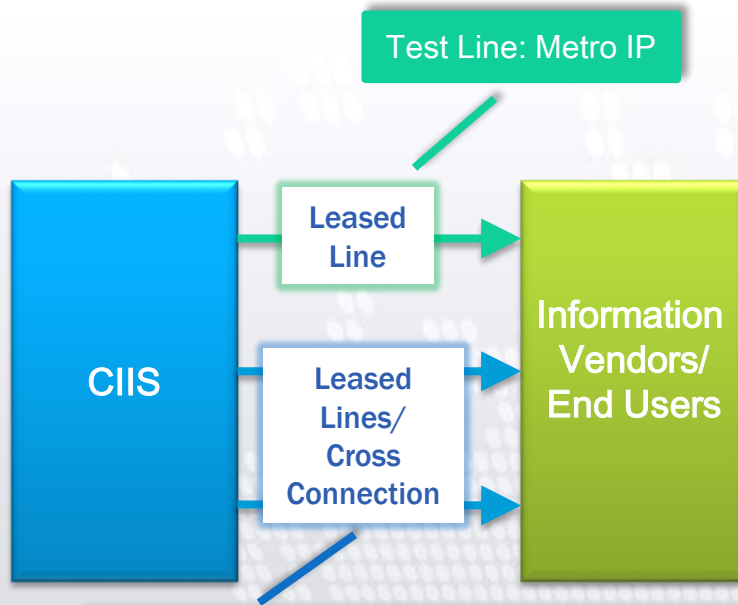
6. Network Diagram



Unicast, UDP/TCP

Production Lines
Method 1:
Connect both production sites via MPLS
Method 2:
Connect 1 production site via cross connection and 1 production site via MPLS

6. Network Diagram



Production Lines

Method 1:

Connect both production sites via MPLS

Method 2:

Connect 1 production site via cross connection and 1 production site via MPLS

One Set of Connections*:

- 2 Production Lines
- 1 Test Line

Interface:

- VDE (Java API)

Test Site Location:

- Wanchai

Production Sites Locations:

- Ap Lei Chau
- Tseung Kwan O (HKEx Data Center)

* 2 production lines and 1 test line are minimum requirements. In order to prevent single point of failure, 2 production lines are compulsory for all information vendors/end users.

7. Bandwidth

As of 9 April 2019

Market Data	Bandwidth
SSE Level-2 data	3.2Mbps
SSE Level-1 data	1.1Mbps
CFFEX Level-2 data	2.6Mbps
DCE Level-2 data	1.1Mbps
ZCE Level-2 data	1Mbps
SZSE Level-1 data	2.5Mbps

7. Bandwidth

- For receiving SSE Level 2 data, the minimum bandwidth requirement is 10M.
- For SSE market:
 - On 9 April 2019, the number of transactions is around 19.32 million.
 - As of 4 December 2019, the highest number of daily transactions in 2019 is around 26.96 million.
 - In past 5 years, the highest number of daily transactions is around 44.68million.

8. Connection Fees

For receiving SSE (and CSI) data:

- Connection fee: US\$10,000 per annum

For receiving SSE (and CSI) data + 1 Third Party Content:

- Connection fee: US\$10,000 + US\$10,000
= US\$20,000 per annum

For receiving SSE (and CSI) data + 2 Third Party Content:

- Connection fee: US\$10,000 + (2 x US\$10,000)
= US\$30,000 per annum

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