

January 2017



**CHINA CONNECT CENTRAL
GATEWAY**

HKEX
香港交易所

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INTRODUCTION

1. China Connect Central Gateway (CCCG) is based on Orion Central Gateway (OCG) model for HK Securities Market to provide a consistent interface to China Connect Exchange Participants (CCEPs)
2. It is used for connection between Broker Supplied System (BSS) and China Stock Connect System (CSC), and order routing to mainland stock exchange(s)
3. CCCG supports multiple connections from CCEP via “CCCG Session” (i.e. each CCEP can have more than one CCCG session connecting to CSC)
4. Types of CCCG Session: Trading and Backup
5. Optional for CCEP to migrate from China Connect Open Gateway (CCOG) to CCCG during the transition period (ending at the cut-off date for CCOG tentatively set for Q1 2018)



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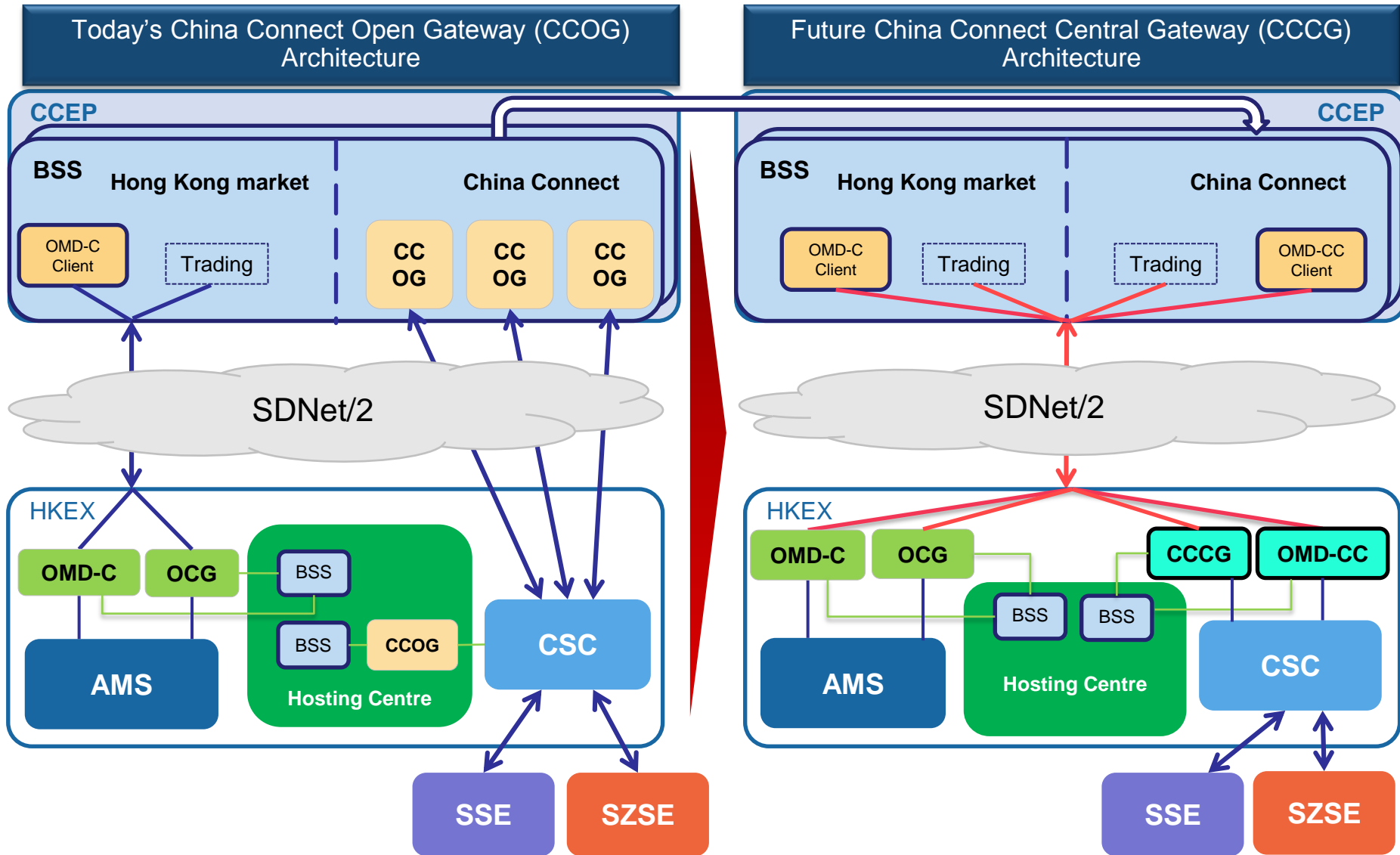
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GATEWAY ARCHITECTURE



COMPARISON OF CCOG AND CCCG

Key Feature	CCOG	CCCG
Hardware	By CCEP	By HKEX
Resilience	High Availability (HA) requires HA CCOG Disaster Recovery (DR) Requires Backup CCOG	HA and DR resilience built in
Interface	CSC Open Message Protocol	FIX or Binary protocol
Capacity	Max 60 Throttles (Trading)	Max 250 Throttles per CCCG Session
SDNet Circuit	Separate circuit for each CCOG	Circuit consolidation for each location
Market Data	Via CCOG	Via OMD-CC
Trade Data	Central Trade Feed (CTF)/ECP (day end)	Drop Copy Service/ECP (day end)



BENEFITS OF CCCG TO CCEP

Cost Savings

- Eliminate OG hardware
- Support SDNet/2 circuit consolidation
- Eliminate monthly Backup Throttle charges
- Enable Application Service Provider (ASP) model

New Functionality

- Support FIX and Binary protocol
- Drop Copy service

Reliability & Efficiency

- One Standard Throttle permits 2 messages per second
- Provide HA and DR to all CG users
- Faster onboarding time for new CG Session
- Decouple Trading and Market Data
- Centralize all Market Data distribution from OMD platform
- High Capacity Session supports throttle consolidation for better utilization



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HKEX ORION MARKET DATA PLATFORM – CHINA CONNECT (SECURITIES) (OMD-CC)

1. To support the rollout of CCCG, China Connect Market Datafeed Products (“OMD-CC”) will be introduced to disseminate the same market data services as currently disseminated from CCOG. Alternatively CCEPs can obtain market data from IVs or SSE/SZSE directly if they wish.
2. OMD-CC disseminates updates on northbound market data under the Shanghai Connect and the Shenzhen Connect at the intervals as provided by SSE and SZSE respectively to CCEPs.
3. OMD-CC implementation is based on HKEX Orion Market Data Platform and follows the same mechanism for receiving real-time data and data recovery (retransmission and refresh). This facilitates easy on-boarding for CCEPs who are having direct connection with OMD-C and use the existing OMD-C application which has passed the OMD-C Readiness Test according to the record of HKEX-IS to gain access to and process the OMD-CC data.



HKEX ORION MARKET DATA PLATFORM – CHINA CONNECT (SECURITIES) (OMD-CC)

Data coverage in OMD-CC is listed as below:

OMD Message	Content Coverage			
Market Definition (610)	Market Code	Market Name	Currency Code	Number of Securities
Security Definition (611)	Security Code	ISIN Code	Security English Name	Currency Code
	Security Chinese Name	Lot Size	Previous Closing Price	Short Sell Flag
	Listing Date	Delisting Date	Instrument Type	
Security Status (621)	Security Trading Status	Circuit Breaker Trading State		
Top of Book (655)	Aggregate Bid Quantity	Aggregate Ask Quantity	Bid Price	Ask Price
Statistics (660)	Shares Traded	Turnover	High Price	Low Price
	Last Price	Opening Price		



HKEX ORION MARKET DATA PLATFORM – CHINA CONNECT (SECURITIES) (OMD-CC)

1. Who can apply?

- Any CCEP who would like to connect to OMD-CC.

2. What are offered to each CCEP?

- **Two sets** of OMD-CC connection with **1 price-depth** market data of the designated securities of Shanghai Stock Exchange and/or Shenzhen Stock Exchange. No charge is involved.

3. Any documentations required?

- CCEPs are required to sign the **Standard Terms and Conditions for Use of China Connect Market Data**.



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PROPOSED CCCG FEE STRUCTURE

(Same as OCG, subject to regulatory approval)

Monthly			Fee
CCCG Session •Trading •Backup	Lite	Up to 20 throttles (1 st Trading or its 1 st Backup session discount for each CCEP)	\$7,500 (1 st \$2,000)
	Standard	21 to 60 throttles	\$10,000
	High Capacity	61 to 100 Throttles (Per additional 50 Throttles) Maximum 250 Throttles	\$15,000 (+\$5,000)
Drop Copy Session •Trades only •Orders and Trades •Backup			Consolidated real-time order and trade reporting (1 st Drop Copy Session and its backup for each CCEP is free) \$4,500
One-time			Fee
New Session admin fee			(Waived for migration of CCOG for the same purpose of usage) \$20,000

* CCCG and OCG session fees are calculated separately



COST COMPARISON—CCOG VS. CCCG

	Standard CCOG Monthly Cost	HA CCOG Monthly Cost	CCCG Monthly Cost
CCOG Hardware* (amortized to 36 months)	\$833	\$2,888	N/A
CCOG Maintenance	\$250	\$730	N/A
CCOG User Fee	\$1,250		N/A
Throttle Fee	\$960 per throttle		Same
Backup Throttle Fee	\$480 per throttle		N/A
CCCG Session Fee	N/A		Tiered Fees
Market Data	Free		Free (2 sets of OMD-CC connections will be offered to each CCEP)

* Standard CCOG at \$30,000 and HA CCOG at \$104,000 each

This comparison excludes the one-time network reconfiguration costs required for CCCG/OMD-CC subscriptions, the hosting costs associated with CCOG as well as the manpower costs required on CCOG maintenance.



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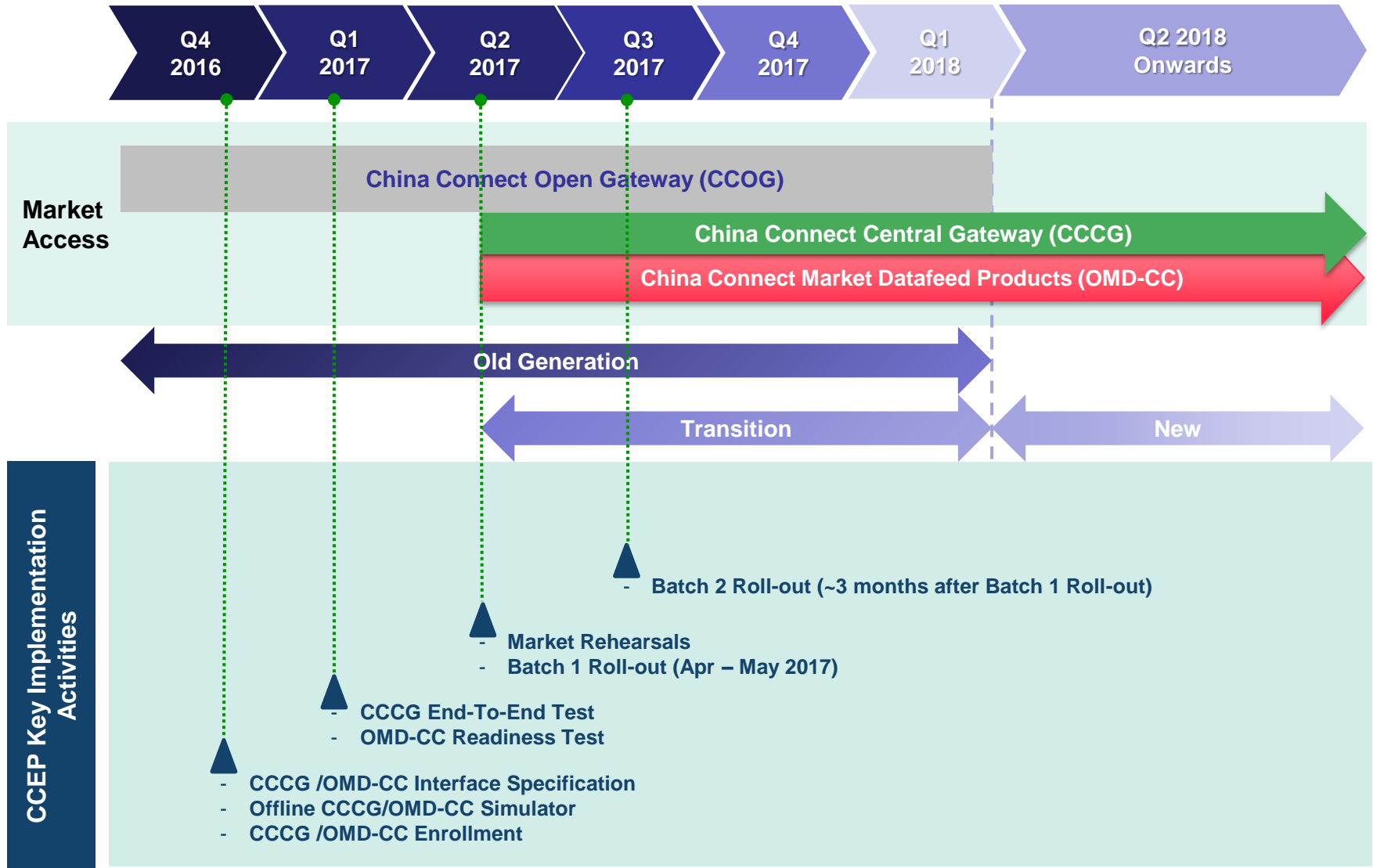
Market Access Fee Structure (Subject to Regulatory Approval)

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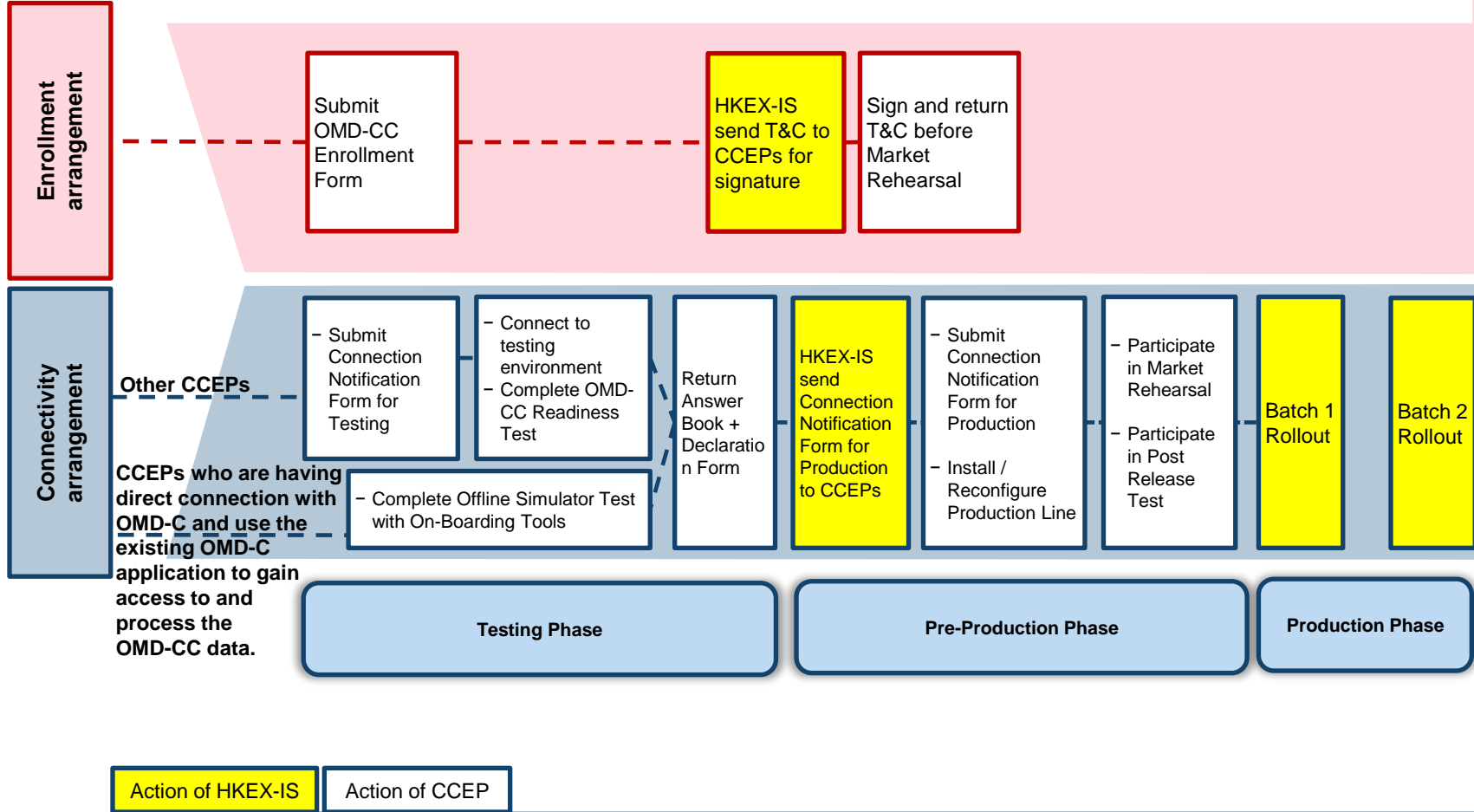
Tentative Implementation Schedule



TENTATIVE IMPLEMENTATION SCHEDULE



OMD-CC DETAILED IMPLEMENTATION SCHEDULE (TENTATIVE)



ENQUIRIES

HKEX China Connect Central Gateway

Email: TRD@hkex.com.hk

Web Corner:

http://www.hkex.com.hk/eng/market/sec_tradinfra/chinaconnect/TechnicalDoc.htm



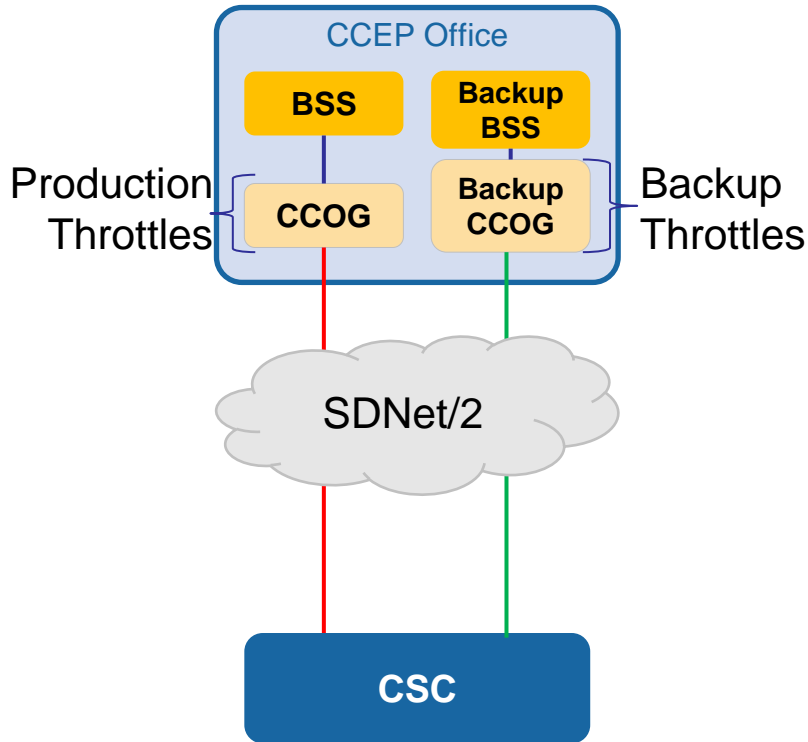
APPENDIX A—COMPARISON OF CCCG (China Connect) AND OCG (HK market)

Key Feature	CCCG (for China Connect)	OCG (for HK market)
SDNet/2 circuit	CCCG sessions and OCG sessions can connect through the same pair of SDNet/2 circuits	
Cancel on Disconnect (COD)	No COD service	Optional per OCG session
Technical Aspect	Only support <ol style="list-style-type: none"> 1. Limit Order 2. Single order cancel 3. Input of Institutional Investor ID (for SPSA order) 	Support various order types, mass order cancellation and manual trade input
Market Data	Via OMD-CC or IVs or SSE/SZSE directly	Via OMD-C or IVs



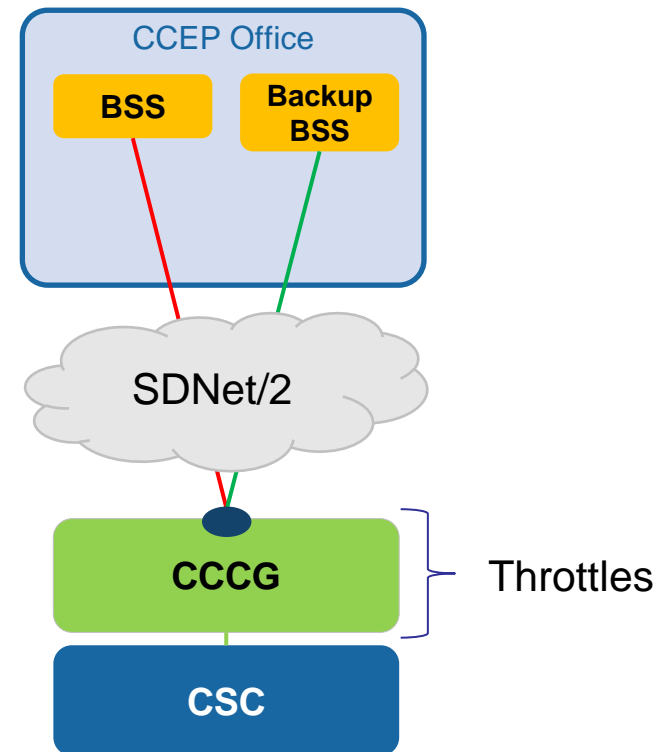
APPENDIX B—BACKUP ARRANGEMENTS

Today's CCOG Architecture



- CCEP responsible for backup of 3 components: BSS, CCOG and SDNet/2 lines
- Backup requires separate Backup CCOG device and SDNet/2 lines
- Backup Throttles separately assigned to Backup CCOG (with Backup Throttles fee)


Future CCCG Architecture



- CCEP responsible for backup of 2 components: BSS and SDNet/2 lines
- Production and Backup BSS can access Connect CCCG via same or separate SDNet/2 lines
- Same Throttle rate applies to both Production and Backup CCCG Session (no Backup Throttles fee)

APPENDIX C—COMMON CASE FOR CCEP COST COMPARISON

Scenario: CCEP has 1 CCOG, migrates to 1 Lite CCCG Session

	Standard CCOG Monthly Cost	HA CCOG Monthly Cost	CCCG Monthly Cost
CCOG Hardware (amortized to 36 months)	\$833	\$2,888	-
CCOG Maintenance	\$250	\$730	-
CCOG User Fee	\$1,250		-
CCCG Session Fee	-		\$2,000
Throttle Fee (one)	\$960		\$960
Market Data	Free		Free (2 sets of OMD-CC connections will be offered to each CCEP)
Total	\$3,293(a)	\$5,828(b)	 \$2,960(c)
Savings vs. CCCG	\$333 (a-c)	\$2,868 (b-c)	

This comparison excludes the one-time network reconfiguration costs required for CCCG/OMD-CC subscriptions. The charges vary with the accredited vendors providing the SDNet/2 services.

