

# Information Package on Hosting Services



## Modification History

Version	Date	Modified by	Description and reason for modification
1.0	19/03/2012	HKEX Hosting	First release version
1.1	08/05/2012	HKEX Hosting	Modify wordings in page 5, 6, 7, 8, 16 and 31. Modify a typo in page 26. Enrich the Accessories list and payment billing notes in Service offerings. Enrich the Annex (1) Key features, differences, and specifications of the hosting Open Gateway (OG) for Hosting Services
2.0	06/01/2014	HKEX Hosting	Key updates to reflect Hosting Services in production and the latest status Add HSTN Service
3.0	23/02/2016	HKEX Hosting	Remove PRS/PRS+ in page 11 and 16 Amend HKEx to HKEX Amend Application procedure in page 33 and 34
4.0	03/10/2023	HKEX Hosting	Refreshment and update of service offering and policies

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# 1. INTRODUCTION

Hong Kong Exchanges and Clearing Limited (HKEX) offers Hosting Services, including low-latency co-location with HKEX markets, at its state-of-the-art data centre at Tseung Kwan O Industrial Estate (“HKEX Data Centre”).

HKEX Hosting Services (HKEX Hosting) supports Hong Kong’s financial markets community using an ecosystem approach. It is available to HKEX Exchange Participants (EP), Buy-side Trading Firms (BS), HKEX authorised Information Vendors (IV), Technology Vendors (TV), Network Service Providers (NSP), Approved Application Service Providers (ASP) and other service providers who are interested in and eligible for interaction within the ecosystem.

Up to 1,200 racks of server space will be made available in phased releases. 450 racks are ready for service now.

This Information Package is prepared to provide the interested parties with:

- 1) Overview of Hosting Services;
- 2) Technical features of Hosting Services Data Centre (HDC);
- 3) Hosting Services operations highlights;
- 4) Hosting Services offerings; and
- 5) Application procedure

## 2. OVERVIEW OF HOSTING SERVICES

HKEX HDC has been in service since December 2012. The key value propositions for subscribers are as below:

- Purpose-built data centre provides the high standard of security, access, power and cooling. HDC is designed to meet Tier-4 specification. In addition, HDC is environmental friendly with LEED (Gold) for Core and Shell, LEED (Gold) for Building Operations and Maintenance, and BEAM Plus (Platinum) for Existing Buildings
- Low latency access to Securities Trading and Derivatives Market
- Low latency direct market data feeds
- An open accessibility concept enables and accelerates the development of an ecosystem of EPs, BSs, IVs, TVs, NSPs, Approved ASPs and other service providers, which effectively creates a high value financial ecosystem
- Flexible power and space packages offering both racked and caged environments
- Carrier neutral and availability of wide choice of network service providers

### 2.1. Eligible Subscribers for Hosting Services

The key subscribers eligible to use the Hosting Services are as follows:

#### 2.1.1. Exchange Participants (Securities & Derivatives)

EP can use the services to access HKEX's market data and trading systems via the low latency HKEX Service Network (HSN). Global telecommunication connectivity is accessible through the Cross Connects (XCN) to NSP.

#### 2.1.2. Buy-side Trading Firms

BS can interconnect with EP within the data centre and have more flexible options to execute their trading strategies. Besides, BS can use the Hosting Services to reduce network latency, obtain faster access to domestic and international market data feeds, and access hosted TV solutions.

#### 2.1.3. Information Vendors

IV can enjoy faster access to HKEX market data systems for the Securities and Derivatives markets. IV can also implement their services within the HDC in order to provide higher speed and low latency domestic and international market data feed services to their customer including EP located at the HDC. IV should note relevant market data policies to be introduced for Hosting Services subscribers.

#### 2.1.4. Application Service Providers

ASP can contract directly with HKEX Hosting to establish an HSN link to HKEX's trading, clearing and market data systems that can be shared by their EP and IV customers through individual HSN Virtual Ports (HSNVP). EPs and IVs may be able to lower their operating costs and increase their efficiency by having an HSNVP and accessing HKEX products directly through an ASP.

#### 2.1.5. Technology Vendors

TV can set up their infrastructure in HDC to provide Software as a Service (SaaS), Broker Supplied Systems (BSS) and Order Management Systems (OMS) solution to their customers at a stable and low latency environment.

#### 2.1.6. Network Service Providers

NSP can set up their point of presence in HDC to offer wide range of domestic and international connectivity services to all subscribers hosted in HDC.

#### 2.1.7. Other Service Providers

Other value added service providers, such as Infrastructure as a Service (IaaS) providers, would also implement their own solution centres within HDC and offer services to the EPs.

## **2.2. Hosting Services – Rack Configurations**

HKEX Hosting offers flexible rack and power configurations for subscriber. We provide half rack, full rack, and cage options to address different hosting requirements.

### **Full Rack:**

- (1) Located at Hall A of the Site:
  - Dimension: 47U x 1175 mm (1100 mm effective) deep x 800 mm wide (19" mounting rails) with default allocation of two fixed shelves; or
- (2) Located at Hall B or Hall E of the Site:
  - Dimension: 52U x 1200 mm (1128 mm effective) deep x 800 mm wide (19" mounting rails) with default allocation of two fixed shelves.

Electrical power is delivered as follow:

- (i) via two vertical power strips for Full Rack with 4 kilovolt-amperes;
- (ii) via four vertical power strips for Full Rack with 6 or 8 kilovolt-amperes; and
- (iii) via six vertical power strips for Full Rack with 10 or 12 kilovolt-amperes,

in each case the power strips are connecting to separate A & B feeds with the following specifications:

- 32A @220V power feeds;
- 12-way BS1363 UK socket power strips.

### **Half Rack:**

- (1) Located at Hall A of the Site:
  - Dimension: 22U x 1175 mm (1100 mm effective) deep x 800 mm wide (19" mounting rails) with default allocation of one fixed shelf; or
- (2) Located at Hall B of the Site:
  - Dimension: 25U x 1200 mm (1128 mm effective) deep x 800 mm wide (19" mounting rails) with default allocation of one fixed shelf.

Electrical power is delivered via two vertical power strips connecting to separate A & B feeds with the following specifications:

- 32A @220V power feeds;
- 8-way BS1363 UK socket power strips (12 sockets power strips will be offered as an option item for half rack in Hall B)

### **Remarks for Rack Configurations**

- Two patch panels are installed in each half or full rack which occupy 2U rack space at the top of the rack/half rack. HKEX Hosting Services Limited (HKEX Hosting) may install additional patch panels as services are provisioned.
- Front and Rear doors are of standard perforated doors. Perforations limit the visibility in the racks.
- All racks include electronic locks.
- Subscriber with contiguous racks is allowed to patch devices through inside passage between these racks but not for power supply.
- When subscriber with non-contiguous racks wants to patch devices between these separate racks, the cabling shall be carried out by HKEX Hosting with fee charged.
- Subscriber may order an additional pair of power circuits and power strips if necessary. The power circuits bundled and maximum number allowed to be installed are as follow:

Rack type and power	Power circuits bundled (pair)	Maximum power circuits allowed (pair)
4kVA Full Rack	1	2
6kVA Full Rack	2	2
8kVA Full Rack	2	3
10kVA & 12kVA Full Rack	3	4
Half Rack (all)	1	2

## 2.3. HKEX Hosting Connectivity Services

Connectivity between ecosystem members is provisioned by the following networks:

- HKEX Service Network (HSN) connects eligible subscribers to HKEX market data, trading and clearing systems. HSN is able to support consolidated connection to HKEX systems at 100M/1G/10G fibre port speed options.
- Cross Connect (XCN) connects subscriber with other ecosystem members by using fibre or copper cable.
- Hosting Services Testing Network (HSTN) provides consolidated connection to testing environments of HKEX Orion technology initiatives which include Orion Market Data, Orion Central Gateway and HKATS at 100M/1G UTP port speed options.

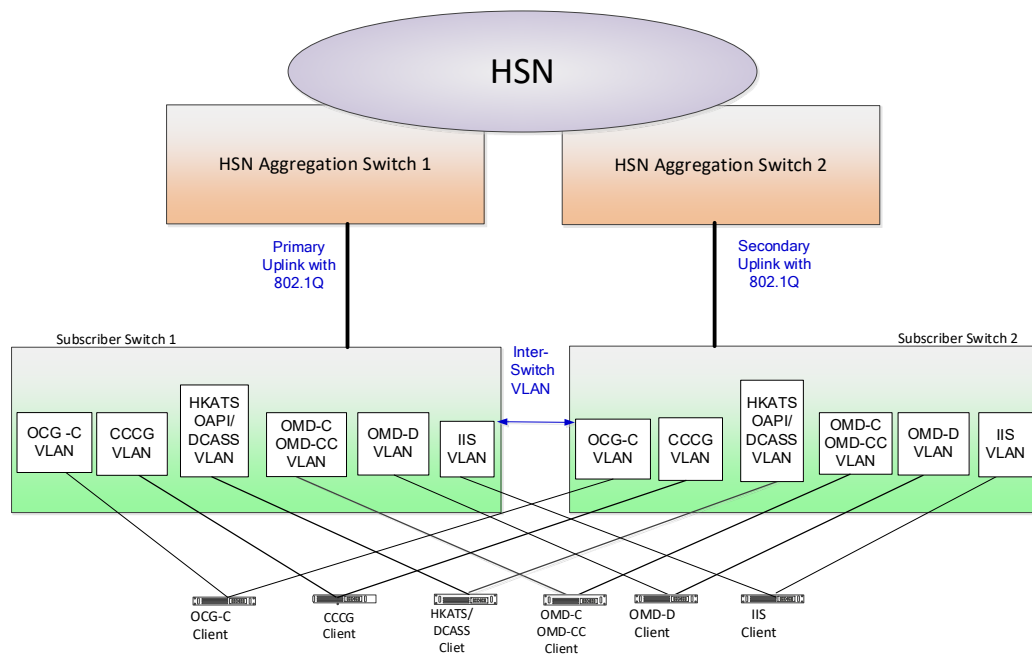
### 2.3.1. HKEX Service Network (HSN)

#### **HSN Overview**

Eligible subscribers can connect to HKEX core systems including Orion Central Gateway – Securities Market (OCG-C), China Connect Central Gateway (CCCG), HKATS OMnet Application Programming Interface (HKATS) / Derivatives Clearing and Settlement System (DCASS), Orion Market Data for Securities Market (OMD-C), Orion Market Data for China Connect (OMD-CC) and Orion Market Data for Derivatives Market (OMD-D), and Issuer Information Feed Service (IIS News/IIS News Headline) via HSN. Port speed at 100Mbps, 1Gbps and 10Gbps options are available. Hosting Services provide dual network fibre ports (Primary and Secondary mode) which are connected to the subscriber rack patch panel demarcation. Equidistant cabling is implemented to ensure practically same latency to all subscribers regardless of the rack location within HDC.

Connection to all HKEX core systems is only available to the eligible EP, ASP and IV respectively.

Subscriber is required to install 2 switches to connect to the HSN port primary and secondary port separately for resilience purpose. Individual VLAN for each trading application should be created in the switch which shall not be shared to other applications.



#### Remarks

OCG-C – Orion Central Gateway for Securities Market

CCCG – China Connect Central Gateway

HKATS OAPI – HKATS OMnet Application Programming Interface

DCASS – Derivatives Clearing and Settlement System

OMD-C – Orion Market Data for Securities Market & Index Datafeed

OMD-CC Orion Market Data China Connect

OMD-D Orion Market Data for Derivatives Market

IIS – Issuer Information feed Service

## **Physical Interface**

HSN provides the following physical interface types:

Physical Interface Specification	Data Rate	Support Interface
	100Mbit/s	SFP 100BASE-FX; LC connector; 1310nm; 2km reach on multimode fibre
	1000Mbit/s	SFP 1000BASE-SX; LC connector; 850nm; 550m reach on multimode fibre
	10Gbit/s	SFP+ 10GBASE-SR 10 Gigabit Ethernet Optics, 850 nm for up to 300 m transmission on multimode fibre

## **Network Protocol**

Ethernet switch in subscriber end must support the following protocols:

Unicast Routing Protocol	BGP4
Multicast Protocol	PIM (Sparse Mode), IGMP
VLAN Tagging	802.1Q

## **IP addressing**

Subscriber must use private Class C in 24 bits or 27 bits IP address provided by HKEX Hosting when connecting to HKEX core systems or other subscribers. Such IP address block is managed and assigned by HKEX Hosting to subscriber during service provisioning. Subscriber can use his own IP address to connect to the NSP systems or any other system within their own rack(s).

## **Security Policy**

HKEX Hosting implemented the following security controls to minimize the risk of unauthorized access to HSN:

- Routing policy filtering is applied between HSN and subscriber devices
- Both incoming and outgoing unicast data streams are examined by firewalls in HSN.
- Multicast and Unicast IP filtering are applied in the aggregation switch in HSN.

To monitor the security, performance and appropriate use of the HSN Connectivity Service and the HSN Virtual Port Service, HKEX Hosting may from time to time, with or without notice to the Subscriber, install any device to capture the data on any port or via any port connection by way of the use of the HSN Connectivity Service or the provision or use of the HSN Virtual Port Service by the Subscriber.

### **2.3.2. Cross Connect (XCN)**

Cross Connect (XCN) connect subscribers with other ecosystem members by using fibre or copper cable.

### **2.3.3. Hosting Services Testing Network (HSTN)**

Hosting Services Testing Network (HSTN) provides consolidated connection to testing environments of HKEX Orion technology initiatives which include Orion Central Gateway for Securities Market (OCG-C), China Connect Central Gateway (CCCG), HKATS OAPI/DCASS and Orion Market Data including OMD-C, OMD-CC and OMD-D, IIS.

## **Eligible Users**

All the following type of Hosting Services Subscribers are eligible:

- 1) Exchange Participants
- 2) Information Vendors
- 3) Approved BSS Vendor and OAPI Developer
- 4) Approved Independent Software Vendor (ISV)

### **2.3.4. Demarcation for Connectivity Services**

HKEX Hosting offers network patch panels which will only occupy 2U rack space in each subscriber rack (in the front and back). All HKEX Hosting Connectivity Services are provisioned in these network patch panels. HSN is delivered through multimode fibre ports, and HSTN is delivered through UTP port. Subscriber rack-to-rack cross connects (XCN) to other ecosystem member(s) are delivered in copper or fibre port(s). Connections from these patch panels to subscriber equipment are the responsibility of the subscriber. HKEX Hosting is not responsible for the provision of switch(s) and cables connecting between subscriber equipment and the network patch panels in subscriber rack.

### **2.4. Timing Services**

HKEX Hosting offers a high precision time sync service via Network Time Protocol (NTP) (V4 RFC5905) and Precise Time Protocol (PTP) (IEEE 1588). The service is provisioned via a dedicated UTP port terminated at the subscriber rack.

In order to provide resilience, HKEX Hosting has 2 NTP and PTP time servers installed in HDC. NTP and PTP is delivered over a single 100M/1G auto negotiated UTP Port. Each subscription will provide one UTP port and subscriber can subscribe additional port which is connected to different switch for resilience purpose.

The provided NTP clock is stratum 1 while the PTP clock is distributed via boundary clock. Time server for HKEX Trading Systems network is installed in the same HKEX Data Centre building as the HKEX Hosting Timer server and the GNSS antenna is mounted in the same roof top.

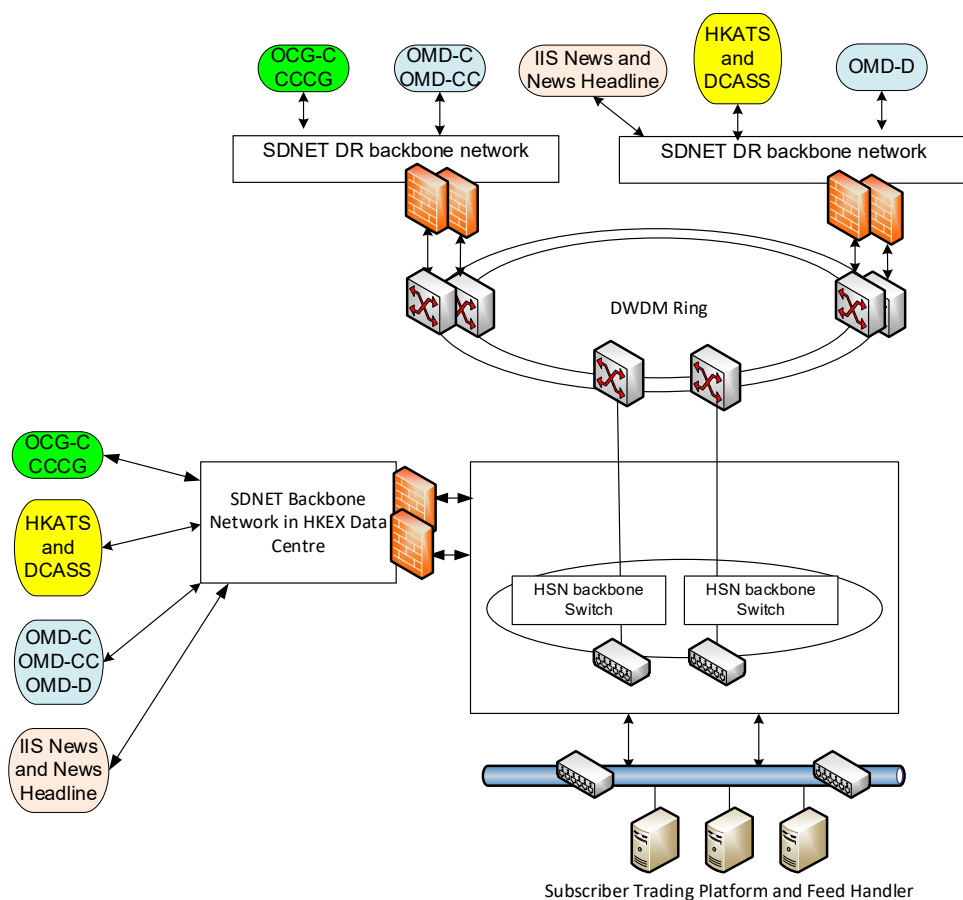
### **2.5. Remote Hands Service**

These are technical support services initiated, directed and guided by the subscriber, performed by HKEX Hosting. The scope of service includes the followings:

- Equipment power cycling (router, server, switch)
- Checking equipment LEDs for activity
- Visual inspections of equipment
- Site access log and power consumption report
- Equipment and component installation, replacement and removal
- Weekday staging service (include unpacking, parts verification, mandatory power test and asset move-in registration)
- In-rack packaging materials disposal
- In-rack cable patching and tracing
- Equipment and cable labelling

## 2.6. Disaster Recovery (DR) Connectivity

Dual Dense Wavelength Division Multiplexing (DWDM) rings are built to link HDC with the HKEX OCG-C, CCCG, HKATS/DCASS, Market Data (including OMD-C, OMD-CC and OMD-D and IIS News/IIS News Headline) DR sites as shown in the following diagram.



These DWDM rings provide connectivity to HKEX DR systems when any one of the following failure(s) in HKEX Data Centre occurred:

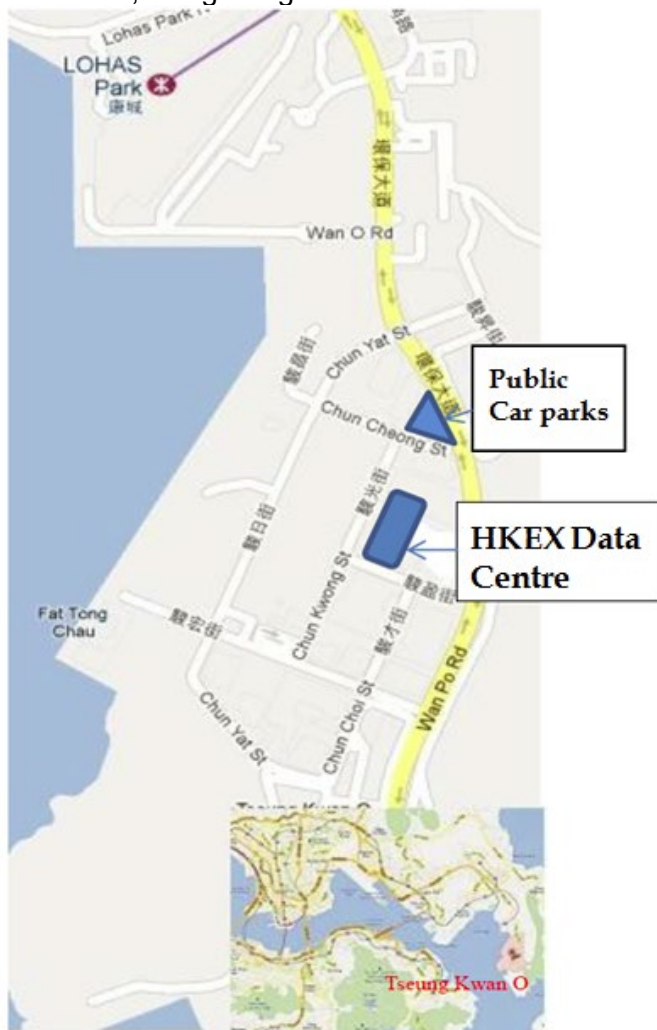
- OCG-C
- CCCG
- HKATS / DCASS
- OMD-C, OMD-CC or OMD-D
- IIS News /IIS News Headline
- SDNET backbone
- Enterprise Data Centre in HKEX Data Centre outage, including but not limited to power and cooling outage

***HKEX Hosting does not provide disaster recovery facility at the HKEX DR sites which are for HKEX internal use, it is subscriber's sole responsibility in the provision of adequate business continuity and disaster recovery arrangements in relation to the subscribed hosting services including, where applicable, maintaining alternative means and location of access to the trading, clearing and settlement systems and/or the market data dissemination systems of the HKEX Group***

### 3. TECHNICAL FEATURES OF HOSTING SERVICES DATA CENTRE

#### 3.1. Location and Map

Address: No. 1, Chun Ying Street, Tseung Kwan O Industrial Estate, Tseung Kwan O, New Territories, Hong Kong.



#### 3.2. Electrical Systems Highlights

Electricity supplies are provided in N+N configuration and backed up by N+2 diesel generator system at 380 Volts. The utility power feeds are coming from 2 different sub-stations in order to provide safe, reliable and redundancy power supply. In addition, generators are supported by 2N generator fuel stored underground fuel tank for total 24 hours running at full load.

Low voltage power is split into three categories:

- Critical IT Load – Uninterrupted Power Supply (UPS) backed HDC IT equipment rack and server power
- Critical Mechanical Load – Chilled water pumps, Computer Room Air Conditioning (CRAC) units, auxiliary cooling units are supported by separate mechanical UPS system
- Essential – office power and cooling

All three categories of power are generator backed. IT racks and critical mechanical systems are UPS backed.

For critical IT loads, 2N UPS systems deliver power to the HDC, two systems running as dual source A and B and UPS modules are connected in a parallel configuration. Each UPS module 500kVA is fitted with a battery autonomy time of 15 minutes at full load.

Static Transfer Switch are installed and supplied by both A and B feed and then feed to Power Distribution Unit (PDU). Each rack is supplied with two feeds each from different side of PDUs.

### **3.3. Cooling**

Roof chiller plant contains 2N chilled water supply and delivered to the dual chilled water coil CRAC units through dual risers serving data centre. Thermal tanks are provided to support for total 15 minutes in N+1 configuration.

Cooling of the HDC is provided by dual coil chilled water CRAC units. Normally the CRAC units are running with either chilled water A or B supply. Supply air control is adopted for each CRAC unit to maintain environmental condition in cold aisle containment. All CRAC units are running in N+2 configuration. Moreover, supplementary top cooling units are provided to cater for 6kVA load per each rack.

### **3.4. Fire Protection System**

HDC is protected via a fully addressable fire alarm system with smoke detectors. Fire suppression system is an environmental friendly NOVEC 1230 gaseous system. In addition, we have the pro-active aspiration system to detect the fire in the very early stage.

### **3.5. Building Management System (BMS)**

All critical equipment is monitored by the BMS system with 24 hours monitoring and attendance.

### **3.6. Security**

The HDC is controlled by the access control system. All main entrances and corridors are monitored by the CCTV system with recording images.

### **3.7. Telecommunication**

There are two TBE rooms together with Telco lead in. Separate risers from TBE rooms to HDC Telco room are provided.

## 4. Operations Highlights

### 4.1. Subscriber Registration

The subscriber is required to register its personnel on a list to be held by HKEX Hosting. The list shall define clearly which individuals have the authority to:

- make changes to the list;
- authorize access of themselves or other parties acting on their behalf into the subscriber rack;
- make requests to HKEX Hosting for work to be undertaken within the subscriber rack; and
- gain access to the HDC.

### 4.2. Service Provisioning

The provisioning process for an order will commence from the time an order is confirmed and accepted by HKEX Hosting. All provisioning work are being done on weekends.

The orders received and accepted **on or before close of business Tuesday** on each week will be processed for arrangement of provisioning work. The lead-time will be as follows:

Standard provisioning lead-time

Services	Lead-time
Standard Rack and power *	1 week
Additional Power	2 weeks
Cross connect and cabling	2 weeks
HSN #	2 weeks
HSTN and Timing	2 weeks

To serve urgent service provisioning needs, Subscribers can subscribe the optional express provisioning service to expedite the service provisioning process. The express provisioning service is subjected to technical feasibility evaluation and will be confirmed upon order acceptance.

Express provisioning lead-time

Services	Lead-time
Standard Rack and power *	5 days
Additional Power	5 days
Cross connect and cabling	5 days
HSN #	5 days
HSTN and Timing	5 days

\* For using standard power strips provided by HKEX Hosting only

# Subjected to the corresponding application tests scheduled

### **4.3. Equipment Delivery and Receiving**

Subscriber equipment deliveries to HDC are subject to a written request by the subscriber and HKEX Hosting's prior written consent to such request at least 2 business days in advance of such delivery.

Subscriber shall provide HKEX Hosting with the following details of the delivery of subscriber equipment:

- courier company name;
- estimated delivery schedule;
- quantity of goods being delivered;
- brief description of goods being delivered including but not limited to size and weight; and
- name(s) (if any) of Subscriber representative(s) on-site to receive delivery.

### **4.4. Equipment Installation**

Subscriber shall provide HKEX Hosting with at least prior notice of 2 business days and seek HKEX Hosting prior approval if it intends to access the subscriber rack to install and connect any equipment which will be generally permitted only outside normal HKEX Trading Hours.

A communal staging area will be available at the HDC for the subscriber equipment configurations and electrical compatibility testing before installation into the subscriber rack. Use of the staging area must be coordinated with the HKEX Hosting with at least 2 business days prior written request and approval.

### **4.5. Disposal of Waste Materials**

Subscribers are required to arrange the removal of any waste materials, such as packaging materials, debris or rubbish created by the subscriber's works, on the same day of subscriber equipment unpacking for configurations or installation.

### **4.6. Subscriber Visitation and Access to the HDC**

HDC may be entered by the subscriber only for the purposes of carrying out legitimate works in connection with the agreement. Generally, the following Subscriber Visitation and Access policies apply:

- Subscriber personnel may enter the HDC only with the prior explicit approval of HKEX Hosting (which shall not be unreasonably withheld).
- All requests for access to the HDC shall be made to HKEX Hosting in writing at least 1 business day before such access is required, unless HKEX Hosting consents to any shorter notice period.
- Designated hours for normal access of HDC is from the end time of After-Hours Trading session (AHT) currently \*3:00a.m. to 7:30a.m. of the immediate following trading day, or if non-trading days in between, 7:30p.m. the day before the following trading day.

\*Note: for further details regarding AHT, please click on "After-Hours Trading" on left hand side menu of the HKEX website:

[https://www.hkex.com.hk/Services/Trading/Derivatives/Overview/Trading-Mechanism/After-Hours-Trading?sc\\_lang=en](https://www.hkex.com.hk/Services/Trading/Derivatives/Overview/Trading-Mechanism/After-Hours-Trading?sc_lang=en)

For the calendar of Last Trading Day (LTD), please click on “Trading Calendar and Holiday Schedule” of the HKEX website:

[https://www.hkex.com.hk/Services/Trading/Derivatives/Overview/Trading-Calendar-and-Holiday-Schedule?sc\\_lang=en](https://www.hkex.com.hk/Services/Trading/Derivatives/Overview/Trading-Calendar-and-Holiday-Schedule?sc_lang=en)

- Extended Site Access hours

Conditions during Extended Site Access hours:

- 1) Subscribers shall not plug or unplug any power supply connecting to in-rack PDU; and
- 2) Subscribers shall not perform any work on the network equipment uplink level facing HKEX HSN switch.

What should I do if I have work related to the two conditions during the Extended Site Access hours?

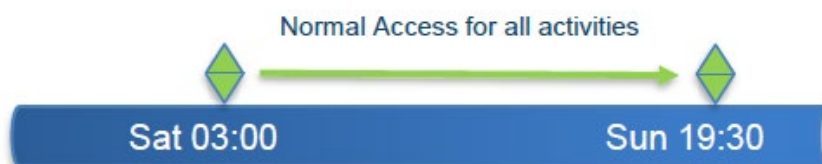
Hosting Service will treat it as Emergence Access Request, please follow the below steps:

- 1) Subscriber shall send an email with a minimum of two PPCs along the email to [hsservicedesk@HKEX.COM.HK](mailto:hsservicedesk@HKEX.COM.HK) for application at least two hours in advance; and
- 2) Along the email provide a.) Reason for break and fix, b.) Evidence and supporting document (such as system log / history log),
- 3) Upon receiving the request, Hosting Service Desk will reply on top of the email request whether it is approved or not.

#### Site access arrangement during trading days



#### Site access arrangement during non-trading days (no change)



- Derivatives Holiday Trading

HKEX Derivatives Holiday Trading service commenced as of 9 May 2022. For any Hong Kong Public Holiday (the “Day”) which falls within Monday to Friday, the Day is classified as trading day(s) and Subscribers should take note the designated hours for normal access during the Day is adjusted to 03:00 – 07:30 (Tuesday – Friday).

\*Note: for further details regarding Derivatives Holiday Trading, please click on “Derivatives Holiday Trading” on left hand side menu of the HKEX website:

[https://www.hkex.com.hk/Services/Trading/Derivatives/Overview/Trading-Mechanism/Derivatives-Holiday-Trading?sc\\_lang=en](https://www.hkex.com.hk/Services/Trading/Derivatives/Overview/Trading-Mechanism/Derivatives-Holiday-Trading?sc_lang=en)

- Emergency access (affecting production trading)

In an emergency situation, emergency access to HDC apart from normal access period is allowed upon Service Desk approval. Emergency access is usually granted where there is a break-fix situation affecting production-trading systems being unavailable for the Subscribers to carry out business functions. A request for emergency access shall be made to Service Desk in writing, together with reasons and supporting evidences, at least 2 hours before the access.

The request for accessing the HDC should include:

- name(s) and other particulars of the subscriber personnel seeking access, including company name;
  - purpose of the access/work request;
  - expected duration of access/task;
  - time and date access/work are required; and
  - notification and information regarding any planned subscriber equipment arrival and/or removal from the HDC.
- Entry into the HDC shall be subject to multiple levels of security screenings, including at the building perimeter entry gate, and building reception. Upon arriving at the entry gate, the subscriber personnel shall present his name, company information and valid ID to the security operator. The security operator will verify whether the subscriber personnel is expected. Unexpected subscriber personnel will not be granted access to the HDC. Subscriber personnel with permitted access will be guided to the building reception where detailed check-in verification procedure for the HDC access will be carried out. Upon successful check-in, the subscriber personnel will be issued with an access badge.
  - The subscriber personnel's bags and packages will be subject to visual inspection and electronic security inspections (magnetometer, x-ray, etc.) if deemed necessary by HKEX Hosting.
  - An escort from HKEX Hosting will then accompany the subscriber personnel to the subscriber rack within HDC. Subscriber personnel activities will be under surveillance by HKEX Hosting throughout the entire duration of their visit. Subscriber personnel may not visit or stay in areas other than the subscriber rack. Upon completion of the visit to the subscriber rack, the subscriber personnel will be escorted back to the building reception area where the visit originated.

## **4.7. Use of Site Facility**

### **4.7.1. Site Policies**

Subscriber personnel should adhere to and abide by all security and safety measures established by HKEX Hosting and set forth in the Site Policies provided by HKEX Hosting to subscribers. The Site Policies sets forth the guidelines, principles, and requirements for using the HKEX HDC by the subscriber. These guidelines, principles and requirements will cover the following area.

- Subscriber's access to HKEX HDC;
- Subscriber's use of the HKEX HDC's facilities;
- Subscriber's conduct;
- HKEX Hosting's maintenance services;
- Supplemental Services; and
- Modification of Rules and Regulations

### **4.7.2. Locker Facility**

Locker facility will be provided free of charge to subscribers to keep their personal belongings while inside the HDC subject to availability. Subscriber is responsible for maintaining the control of the locker key and for keeping the locker closed and locked. Upon leaving the Site, subscriber must return the locker key to HKEX Hosting Command Centre's staff.

### **4.7.3. Emergency and Safety**

The HKEX Hosting takes the health and safety of its employees and visitors seriously and maintain a high standard in the HDC. Should a subscriber be aware of a potential hazard, unsafe situation or unsafe working practice, they should communicate the hazard to the Hosting Command Centre's staff immediately.

All accidents should be reported to the Hosting Command Centre's staff who will take appropriate action. All subscribers are required to keep the work area in a tidy condition and must ensure that walkways are maintained free from obstruction.

## **4.8. Operational Support**

### **4.8.1. Fault Reporting**

HKEX Hosting has established a team of technical support personnel to provide round-the-clock support services to the Hosting Services subscribers. You can contact our support team through the Service Desk.

For each fault report/operation request from subscriber, a ticket number will be created and communicated to the subscriber for future reference purpose.

### **4.8.2. Service Contacts**

#### **Service Desk/Operations Command Centre/Technical Support**

Email: [hsservicedesk@hkex.com.hk](mailto:hsservicedesk@hkex.com.hk)

Phone: (852) 2211 6080

Our Service Desk is available to assist you on the followings during 09:00 ~ 18:00 HKT, Monday to Friday excluding public holiday:

- Subscriber's personnel registration and general service support
- General inquiries
- Notification of maintenance events
- Appointments for equipment installation and HSN Network Commissioning Test

The following services are available 7 days x 24 hours:

- Contact for fault reporting
- Remote hands services (some types of services require advance scheduling in business day)
- Register for the access to HDC

### **Business Service**

Email: [hssales@hkex.com.hk](mailto:hssales@hkex.com.hk)

Phone: (852) 2211 6447

Our Business Service team is available to assist you with any order and service provisioning inquiries.

### **Business Support**

Email: [hsbillingenquiry@hkex.com.hk](mailto:hsbillingenquiry@hkex.com.hk)

Phone: (852) 2211 6006

Our Business Support Team is available to assist Subscriber with any billing issues.

## **5. SERVICE OFFERINGS**

### **5.1. Major Service Items**

#### **Rack and Power:**

Half rack

- Hall A - 2kVA/3kVA/4kVA\*
- Hall B - 3kVA/4Kva

Full Rack

- Hall A - 4kVA/6kVA/8kVA\*
- Hall B - 6kVA/8kVA/10kVA\*
- Hall E - 10kVA/12kVA

Cage is offered as option

(\*subject to cooling capacity evaluation)

#### **Connectivity Service Offerings:**

- HKEX Service Network (HSN) - Pair of 100M ports (primary + secondary)
- HKEX Service Network (HSN) - Pair of 1G ports (primary + secondary)
- HKEX Service Network (HSN) - Pair of 10G ports (primary + secondary)
- Cross connect (XCN) - Fibre or UTP
- Hosting Services Testing Network (HSTN) - Pair of 100M ports (UTP)
- Hosting Services Testing Network (HSTN) - Pair of 1G ports (UTP)

#### **Other Services:**

- Remote hands service (per hour rate)
- Timing Service – Network Time Protocol (NTP)
- Timing Service – Precision Time Protocol (PTP)

Please refer to web site link: [Hosting Services Pricing](#) for the service fee details.

## 5.2. Payment/Billing

Service Fees for Subscribed Services under an Order shall be payable in advance of the delivery of the Subscribed Services, as follows:

- a. the Monthly Recurrent Fees for the first Quarter shall become payable upon the Service Commencement Date, provided that where the Service Commencement Date is on a day other than the first day of the Quarter, the Monthly Recurrent Fees for the first Quarter will be pro-rated and calculated in accordance with the actual number of days in that Quarter for which the Subscribed Services will be provided;
- b. the Monthly Recurrent Fees for each Quarter thereafter shall become payable in advance by the Subscriber on the first day of the Quarter for which the Subscribed Services related to that Monthly Recurrent Fee will be provided;
- c. the Monthly Recurrent Fees shall be paid by the Subscriber within 30 days from the date of the invoice;
- d. the One Time Fees for each of the Subscribed Services shall be invoiced by HKEX Hosting to the Subscriber on the applicable Service Commencement Date for each of the Subscribed Services;
- e. the One Time Fees shall be payable by the Subscriber within 30 days of the date of the invoice;
- f. the Remote Hands Service Fee for Subscribed Services will be determined using the applicable hourly rate(s) set out in the Fee Schedule. A minimum charge of one half hour will apply to each use of the Remote Hands Service by the Subscriber and each part hour of the Remote Hands Service provided will be charged as a half hour (if 30 minutes or less) or a full hour (if more than 30 minutes);
- g. the total Remote Hands Service Fee shall be paid in advance by the Subscriber and HKEX Hosting will hold the Remote Hands Service Fee paid by the Subscriber on deposit as an advance payment against the Subscriber's requests for Remote Hands Services up to the level covered by the Remote Hands Service Fee paid;
- h. amounts deposited by the Subscriber into its Remote Hands Service Fee account shall be non-refundable on the expiry or termination of this Agreement.

Charges for Accessories are subject to adjustments with reference to the applicable prevailing market rates as reasonably determined by HKEX Hosting. Subscribers shall contact HKEX Hosting for the most updated charges before placing Orders for Accessories. Charges for Accessories under an Order shall become payable upon delivery of the Accessories to the Subscriber and the Subscriber shall pay such charges within 30 days after the date of invoice.

Accessories will be sold by HKEX Hosting on an "as is" basis. To the maximum extent permitted by Applicable Law, HKEX Hosting does not make or give any warranty or representation of any kind regarding the Accessories and HKEX Hosting excludes any guarantee, condition or warranty (including, without limitation, any guarantee, condition or warranty of merchantability, acceptable quality, fitness for purpose or fitness for disclosed result), or any other right or remedy under, or implied by, any Applicable Law. To the extent that HKEX Hosting's liability cannot be lawfully excluded, HKEX Hosting's liability shall be limited to the charges paid by the Subscriber for the Accessories to which the Subscriber's claim relates and this shall constitute the entire discharge of HKEX Hosting's liability in relation to the Accessories under any Applicable Law.

### **5.3. Deposit**

The Subscriber shall provide HKEX Hosting with a Security Deposit for the amount of 3 month's Monthly Recurrent Fees of Rack and HSN services upon submission of the signed order form.

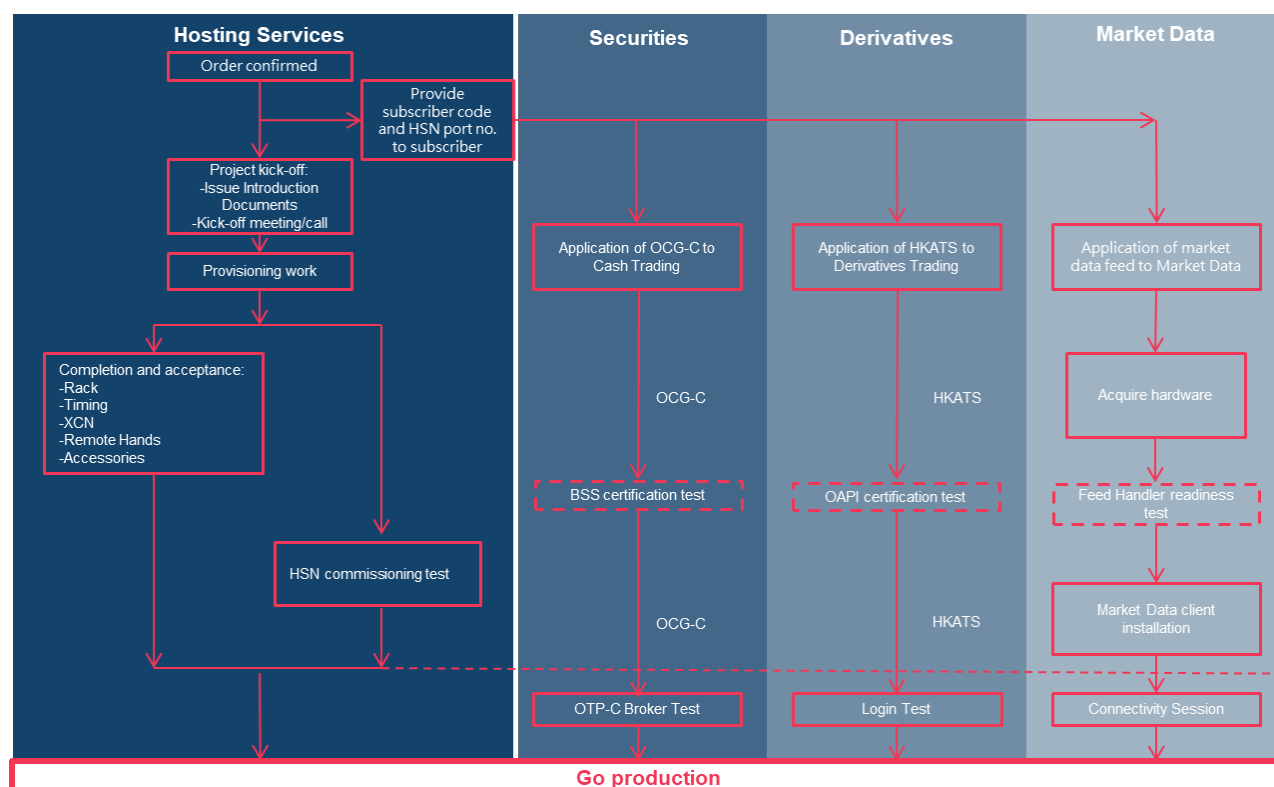
## 6. APPLICATION PROCEDURE

### 6.1. Application for Hosting Services

Subscribers who are interested in using Hosting Services should follow the steps listed below:



### 6.2. Procedure for applying connections to HKEX Securities Trading, Derivatives Market and Orion Market Data via HSN



\* Please consult the corresponding HKEX team for details of application and testing.

Subscribers are suggested to contact and consult corresponding HKEX teams for the detail procedure for applying connections to OCG-C, HKATS, and Orion Market Data via HSN.

For any subscription inquiry, please contact Hosting Services Business Service team at (852) 2211 6447 or by sending email to [hssales@hkex.com.hk](mailto:hssales@hkex.com.hk)

#### Disclaimer

HKEX and/or its subsidiaries endeavour to ensure the accuracy and reliability of the information provided, but do not guarantee its accuracy and reliability and accept no liability (whether in tort or contract or otherwise) for any loss or damage arising from any inaccuracy or omission or from any decision, action or non-action based on or in reliance upon information contained in this information sheet.

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