Internet Data Center (IDC) Services Overview

Contents

Introduction to Internet Data Center (IDC) Services

1.1 Global IDC Coverage

1.2 Core Services

1.3 Main Advantages

International network serving the world

50
submarine cables
with international transmission bandwidth exceeding
117 TB

229
Global Network Nodes

25 ChinaNet	50 CN2
128 Transmission POP	26 Global Owned DC

○ **Node**
Statistics

Gothenburg · Helsinki
Amsterdam · Stockholm
Brussels · Copenhagen · Luxembourg
London, Manchester · duesseldorf
Geneva · Warsaw
Paris · Prague
Marseille · Budapest
zurich · vienna · Frankfurt
Rome · Athens
Madrid · Milan · Sophia
Istanbul
Moscow
Cairo
Dubai
Karachi
Almaty
New Delhi
Mumbai
Vladivostok
Seoul
Tokyo
Chikura, Maruyama
Osaka
Yangon Muse
mandalay
Hanoi
Bangkok
Phnom Penh
Ho Chi Minh City
Hong Kong
Macao
Kuala Lumpur
Katong · Singapore
Tangerang
Jakarta
Djibouti
Kampala
Nairobi
Mombasa
Accra
Lagos
Dar es Salaam
Johannesburg , Pretoria
Durban
Cape town
Perth
Sydney

Calgary
Vancouver
Seattle
Hillsborough
San Jose
Los Angeles
Montreal
Toronto
Chicago
Denver
dallas
Atlanta
Boston
New York
Washington
Miami
Rio
Sao Paulo

Global Internet Data Center Coverage

26 China Telecom Owned DCs

300+ Colocation DCs

700+ China's Leading Data Center Provider*

- Comprehensive coverage of key markets
- Provide Tier III or Tier IV equipment
- Professional Team Providing 24/7 Support Services

Frankfurt

Tokyo

Hong Kong

Singapore

Stockholm
Helsinki
Amsterdam
Frankfurt
London
Prague
Moscow
Paris
Milan
Marseille
Istanbul
Madrid
Cairo
Fuchara
New Delhi
Dubai
Mumbai
Djibouti
Lagos
Mombasa
Nonthaburi
Nairobi
Dar es Salaam
Kuala Lumpur
Bangkok
Hanoi
Radivostok
Chikura
Seoul
Tokyo
Maruyama
Hong Kong SAR
Ho Chi Minh
Singapore
Jakarta
Johannesburg
Perth
Sydney

Vancouver
Seattle
Hillsborough
San Jose
Los Angeles
Denver
Dallas
Toronto
Chicago
New York
Washington
Miami
Rio de Janeiro
Sao Paulo

*Number includes China Telecom owned Tier 1-4 DCs, central offices, computer rooms and colocation space in partner owned facilities.

中国电信 CHINA TELECOM | 天翼云 eSurfing Cloud

Core IDC Services

Hosting

Professional hosting and Internet data center integration services.

Cross-Connect

Provide various high-quality connection cables for use in the computer room, greatly improving customer convenience.

DR Center

China Telecom's disaster recovery center provides customers with immediate response and remediation services in various emergencies.

Maintenance service

Remote processing of various agent maintenance services in the data center, so that customers can easily solve problems without leaving home.

DC Interconnect

China Telecom has a number of directly operated computer rooms, which can provide fast and stable intelligent Ethernet connection services.

Remote Hands

Full range of cloud hosting services designed to provide customers with professional IT support.

Main Advantages

Global cooperation, one-stop solution

China Telecom has professional hardware facilities, reliable data transmission management, stable application services, professional IDC service integration, and efficient one-stop service. One point of global access, extensive global cooperation, to provide customers with the most suitable IDC services in China and the world.

Flexible response, global customization

Customized hosting services ensure data security and business continuity in global business operations across various industries to meet the specific requirements of enterprise development and digital transformation.

Full safety, global protection

China Telecom is the largest data center provider in China, the first IDC and the founder of industry standards. Based on the information technology infrastructure library (ITIL) operation management system, it has obtained ISO27001 information security management certification, and has established a complete data center service product system.

Safe and reliable, ultimate service

Unique global disaster recovery service, optimized system and network management, to provide customers with high-quality security. The Global Professional Services team provides 24/7 customer service from multiple global NOCs.

Diverse network connections all over the world, connecting every corner of the world.

UPS, generators, power distribution, cooling, security and cyber resilience systems are all configured with N+1 redundancy.

Scalable software packages that provide solutions that meet specific business needs.

Expert facility security with all facilities monitored 24/7and protected by fire protection systems and global disaster recovery solutions.

High performance, high-speed Internet access up to 10Gbps and low-latency dedicated connectivity services.

Using green energy, as part of the company's commitment to environmental protection, China Telecom has established comprehensive energy efficiency and green operation programs in all data center facilities.

2.1 Hong Kong IDCs

Highlight 1: Development advantages of Hong Kong's Greater Bay Area

- Hong Kong plays an important role as a connectivity hub between China and overseas markets. Global companies are committed to expanding their business in the cities of the Greater Bay Area which includes Shenzen and Guangzhou, especially in the information and communications industry. This highlights Hong Kong's role as a key internet exchange point between Asia and the Americas.

- With highly developed transportation infrastructure, Hong Kong allows enterprises to easily and quickly travel through the Greater Bay Area from offices to manufacturing plants to colocation facilities.

Highlight 2: Rich Interconnection Options

Mega TWO IDC

TKO IDC

Tin Shui Wai

Tai Po

Yuen Long

Tuen Mun

Hong Kong

Tsuen Wan

Sha Tin

Kowloon

Tsim Sha Tsui

Tseung Kwan O

Tung Chung

Central

Lantau Island

Chai Wan

SFC IDC

Mega-I IDC

- China Telecom's four data centers in Hong Kong are located in **Sha Tin, Tseung Kwan O** and **Chai Wan**, distributed across Hong Kong Island, New Territories and New Towns

- Operates China Telecom's own fiber optic network

- Provide diversified services, including disaster recovery, backup computer room, low-latency network services, etc., to meet customers with different needs

- All four data centers provide **high-quality network interconnection services**, bringing customers the advantages of scalability and availability

Sha Tin IDC

Overview

- Located in the heart of Hong Kong, with close proximity to public transportation facilities
- Equipped with low latency and high-quality gateways, providing fast connections to mainland China and worldwide destinations
- Spacious floor layout significantly enhances space and facility utilization
- High ceilings to accommodate high-end requirements for large cabinets and power density
- Three telecom equipment rooms, dual-path transmission conduits, and abundant conduit resources
- N+1 power system
- N+1 cooling system
- Gas-based fire suppression

Location	Address	Racks	Power	Target Customer
Mega II – Sha Tin 4/F	8-12 Wong Chuk Yeung Street	300-350	4-6KVA	Customers requiring access to Mainland China
Mega II - Sha Tin 11/F		500-550	4-6KVA	
Mega II – Sha Tin 3/F		256	4-6KVA	
Mega II – Sha Tin 5/F		175	2-4KVA	

Chai Wan IDC

Overview

Global Operator Hub with carrier-neutral facilites, can connect more than 200 global, mainland and local telecom operators, ISPs and other types of service providers

- N+1 UPS with 15-minute battery backup at full load
- N+1 Wind Wall CRAC (Computer Room Air Conditioner)
- Closed Hot Aisle Containment Design
- Fiber Duct and Cable Basket on Top of Cabinets connected to MMR (Main Distribution Frame)
- Gas-based Fire Suppression

Location	Address	Racks	Power	Target Customer
Mega I – 21F, Chai Wan	399 Chai Wan First Asia Plaza (Mega - iAdvantage) 21/F, 27/F, 31/F,	160-170	2KVA , 3KVA	Focus on Carrier, OTT, CDN, Cloud Node customers.
Mega I – 27th Floor		80-90	4KVA , 5KVA , 6KVA	

https://www.peeringdb.com/fac/225

Hong Kong Chai Wan IDC – 27/F
VR 360 experience

360° VR video link

Tseung Kwan O IDC

Overview

- Hong Kong's largest Tier 3 carrier-neutral, cloud-connected data center

- Adjacent to the Tseung Kwan O Submarine Cable Landing Station, with close proximity to another major cable landing station and hosting facilities of the Hong Kong Stock Exchange

- Phase 1 has received the Platinum LEED (Leadership in Energy and Environmental Design) certification, and the data center is striving to achieve the Hong Kong Green Building Council's BEAM Plus New Buildings Gold certification for green building environmental assessment

- Independent third-party certified design in Hong Kong with a PUE (Power Usage Effectiveness) of less than 1.3

- Certification: ISO9001, 14001, 27001, 45001, 50001

Location	Address	Racks	Power Density	Target customers
TKO 2/F	Global Switch Data Center 18 Chun Yat Street	850-900	4KVA , 5KVA , 6KVA , 7KVA , 8KVA , 9KVA , 10KVA	Hyperscale

Hong Kong Tseung Kwan O
VR 360 experience

VR video link

2.2 Singapore
Tai Seng IDC
Woodlands IDC

Highlight 1: Asia-Pacific Business Hub

Data Center Interconnectivity

- Singapore is one of the three major data center hubs in the world. With its superior strategic location, Singapore is not only the gateway to Asia, but also the gateway from Asia to the world, promoting the business development of various industries in the Asia-Pacific market and the world.

- China Telecom has data centers in Tai Seng and Woodlands to provide interconnected network infrastructure to support the business operations of large, medium and small enterprises.

Highlight 2: Customized Product Line Support

Have specialized colocation requirements, CTA provides customized services

Basic Services

- Rack Rental
- VIP DC Room Rental
- In-house Wiring

Security Service

- Firewall
- Intrusion detection
- Anti- DDOS
- Security Assessment and Optimization

Field Maintenance Services

- Equipment installation and upgrade
- Field Maintenance Service

Data Storage ServiceS

- Data Storage
- Data Backup
- Data Recovery

Network Optimization Services

- Load Balancing
- WAN Optimization

Network Performance Management

- Network Traffic Report
- Application Data Report
- Abnormal traffic alert
- Analysis and Evaluation Report
- Network Application Monitoring

Disaster Backup & Recovery

- Data backup and recovery
- Extended service
- Disaster recovery outsourcing service
- Disaster recovery maintenance service

Other Value-added Services

- DNS
- Dedicated Line
- WAN Connection

Highlight 3: 24/7 On-site Technical Support

Basic
Field Support Services
7*24*365

- Power cycle the device
- Check and confirm network cable connection
- Device off, power on
- Examine, describe and report light information on customer equipment
- Install, replace, or hot-swap device modules

Enhanced
Field Support Services
7*24*365

- Tape replacement, storage, management
- Wiring and rack installation of customer equipment
- Configuration and basic troubleshooting of Cisco network equipment
- Commonly used systems, software installation and initialization settings (software provided by the customer)
- Basic configuration for various application services according to the customer's requirements for keyboard input in the control command line
- System level management and system management support
- Check the operation of the system, eliminate system and software faults

Tai Seng Data Center - **Overview**

2 Tai Seng Road Singapore 534408

	3rd floor	6th floor
TIA 942 standard	Tier 3	
Floor load	750kg/㎡	
Floor Height	4.1m	
Room Area	557.4㎡	260㎡
Number of racks that can be placed	150-160	120-130
Power Supply	2 different substations	
UPS	Total power output 625KVA	Total power output 325KVA
ISO Certification	ISO 9001 Quality Management ISO 27001 Information Security Management ISO 20000 IT Service Management	

Tai Seng Data Center - **Solid Infrastructure**

Meet Me Room (MMR)

- The building has a total of 2 MMR

- Double pipes to China Telecom IDC MMR

- All local line providers can be accessed, such as StarHub, Tata, SingTel, Pacnet, PCCW, etc. (carrier neutral facility)

Transformer room

Dual utility power feeds from different substations (Payalebar & Kakibukit)

1+1 configuration with 2 backup transformers, meeting Tier 4 standard requirements
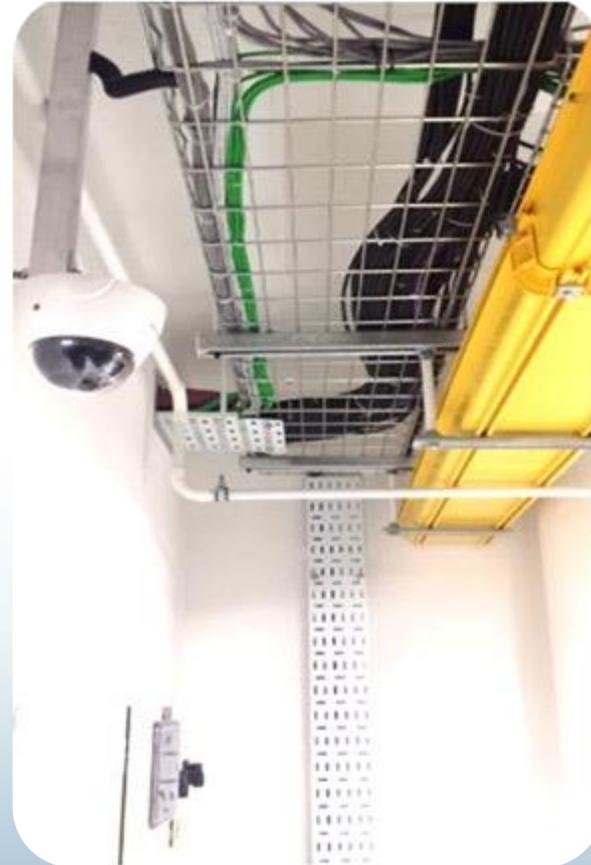
Tai Seng Data Center– **Stable Power Supply**

Payalebar & Kakibukit ▶ **Transformer** ▶ **UPS** ▶ **Static Transfer Switch Dual Power Static Transfer Switch** ▶ **Wiring box** ▶ **Cabinet**

Static Transfer Switch, Bypass switch

Distribution Box

- **2N UPS** Redundant design + 10 minutes uninterruptible power supply + diesel generator

- Uninterruptible power supply w/ total power output: **950kVA**

- Static transfer switch and bypass switch available on 6th floor

CHINA TELECOM
AMERICAS

22

Tai Seng Data Center –
Precise Temperature Control Facilities

	3rd floor	6th floor
Air Conditioner	• Precision air conditioner N+1 configuration; Dual power supply; automatic switch power supply • Temperature : 18℃-28℃ ; Humidity : 50% ±20% • Condensate Cooling System	
Heat return air channel	1200mm 	500-1000mm
Cold air channel width	1200mm 	1200mm
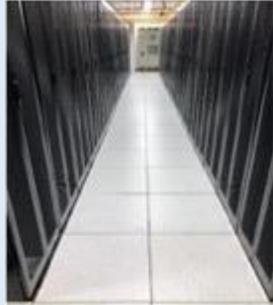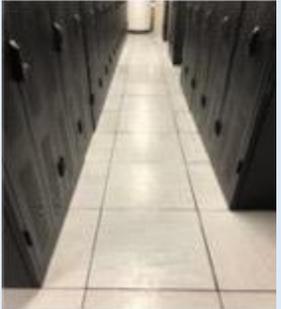
Tai Seng Data Center – **Stable Power Supply**

- Redundant Design w/ 2 Independent Uninterruptible Power Supplies (UPS), UPS A & UPS B
- Output Capacity of each UPS: 625 kVA (3rd Floor) and 325 kVA (6th Floor)
- UPS Battery Capacity, capable of supporting full load for 10 minutes

UPS battery pack

Uninterruptible Power Host

Tai Seng Data Center–
Fire Suppression System & Raised Floor
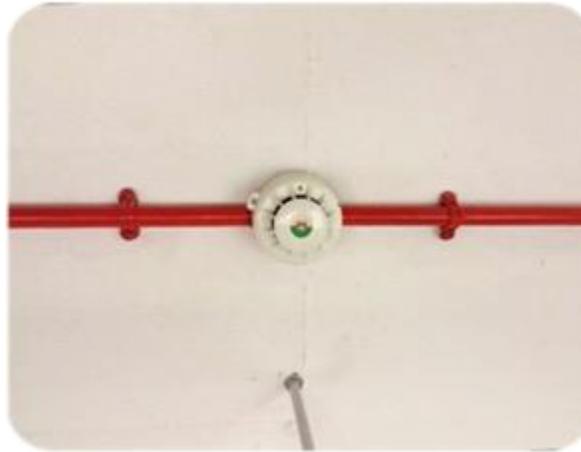
Fire Suppression System

- Automatic Smoke Detection System

- FM200 Gas Fire Suppression System used in the hosting area

- Sprinkler Fire Suppression System installed throughout all areas

Raised floor

- Raised Floor Height: 600mm

- Underfloor cabling with water leak detection system

- Sprinkler fire suppression system installed at the bottom of the raised floor

Tai Seng Data Center – **Multiple Security Systems**

Security

- 24/7 Security Guards Patrol
- CCTV Coverage Throughout the IDC for Comprehensive Surveillance
- Security Control in Accordance with ISO 27001
- Access to IDC Secure Zones Limited to Authorized Personnel Using IC Cards

BMO Monitoring

- Business Machine Operation
- Regular Inspection of Power Distribution, Air Conditioning, and other facilities within the Data Center

NOC

- IDC Engineers on Duty 24/7
- 24/7 Service Hotline and Network Monitoring

Tai Seng Data Center– **Other Equipment**

Diesel Generators

- 12 diesel generators
- 2N redundancy
- Each generator has a power output of 2000kVA
- A fuel supply agreement is in place, with fuel delivery from the fuel depot within 2 hours
- Dedicated fuel tanks are set up, with a total capacity of 150,000 liters

Chiller Unit

- A total of 8 chiller units, forming an N+1 system
- Each chiller unit has a cooling capacity equivalent to 800-1000KW

Diesel Generators

Underground Fuel Storage Tanks

2.3 Tokyo NTT IDC

Tokyo IDC – **Highlight 1: Superior Location**

Address

NTT East
3-40-3 Sendagi,
Bunkyo- ku, Tokyo,
113-0022 Japan

Walk

From Sendagi Station: 2 minutes
(Tokyo Metro Chiyoda Line)

From Nippori Station: 8 minutes
(JR Yamanote Line)

Drive

From Tokyo Station :
22 minutes (about 5.4
kilometers)

Tokyo IDC - **Highlight 2:**
Comprehensive Network Infrastructure

- The data center network in Tokyo is highly advanced meeting enterprise needs for redundancy, availability and density. The network transmission and IP nodes are located at the same location as the computer room. Through the high-quality network of China Telecom, interconnection between enterprises and the world is realized. Tokyo has 3 PoPs and 2 submarine cable landing stations. The PoPs are located in **NTT East Data Center in Bunkyo District, AT TOKYO in Koto District and Equinix TY2 in Shinagawa District. T**he submarine cable landing stations are located in Chikura and Maruyama respectively .

- PoPs and submarine cable stations are interconnected through bare optical fibers to realize multi-routing WDM rings. With the supporting high-quality network and rich submarine cable resources, it provides fast and stable intelligent Ethernet connection services for global enterprise customers.

Tokyo IDC - Highlight 3: Sustainable Development Reduce Energy Consumption and CO2 Emissions

1 Solar Energy Generation

- Does not require the use of fuel to generate electricity
- Through the display panel at the entrance, you can check the current power generation in real time

発電状況表示
現在の発電能力
376 kw
本日の発電電力量
178 kw
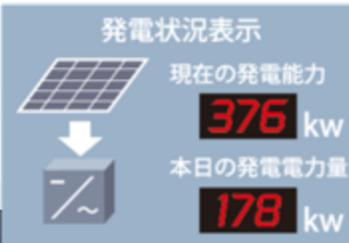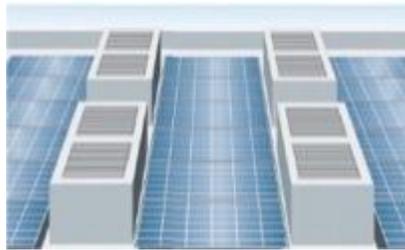
2 LED Lighting

Both the public space and the computer room use LED lights, reducing energy consumption by about **57% and 18% respectively**

3 Green Wall

- Through the greenery on the walls of the building, solar radiation can be blocked in summer and heat loss can be reduced in winter
- Use the photosynthesis of plants to properly adjust the room temperature of the building

4 Sprinkler System

Spray to the heat exchanger part of the outdoor unit of the air conditioner, through the evaporation of water heat, improve the heat exchange efficiency and reduce the energy consumption of the air conditioner

Tokyo IDC – **Specification Overview**

Building Standards

- Ground area: approx 4,410 sqm

- Total construction area: about 9,100 sqm

- Floor load capacity: 1,000kg / sqm

- Raised floor to ceiling height: 2.7m

- Raised floor height: 600mm

- Standard rack size: 600mm (W) x 1200mm (D) x 2200mm (H) 46U

- Equipped with Isolated Structural Design

- Anti-seismic level: the highest seismic intensity level 7 earthquake design and the largest anti-seismic level.

Environmental Norms

The outdoor unit of the air conditioner adopts photovoltaic power generation, green walls, LED lighting, and water intake to the outdoor air conditioner

Power Specifications

- PUE: 1.57

- Power factor: 0.9

- Power configuration : 200V 30A / 100V 20A

- The standard rack power distributor (rPDU) provides two interface types, C13 and C19, which can be customized according to customer needs

- Power supply: 4kW/ rack

Security Regulations

- Biometric Authentication

- Revolving Doors to prevent tailgating

- 24-hour security monitoring

- The transit room is strictly managed by the 24x7 security team

Fire Code

- Ultra-sensitive smoke detection system

- Nitrogen-based gas reduces oxygen concentration

- High Performance Aluminum Double Floor System

SLAs

- **99.999%** monthly availability of Power, temperature, and humidity

Data Center Certification

- **ISO27001**

Cooling specification

- Enclosed cold aisle design

- N+2 redundant air-cooling configuration, water-free, utilizing ceiling return airflow

Tokyo IDC - **Stringent Building Specifications**

Equipped with Seismic Isolation Structure with Three Types of Seismic Isolation Devices

Multi-Stage Seismic Isolation Devices

1 **Laminated rubber with lead plug**

Lead plugs inserted into laminated rubber reduce shock from earthquakes

Seismic Isolation Device 1

2 **Linear slide**

Suppresses the shock of earthquakes

Seismic Isolation Device 2

3 **Oil Damper**

Rollers on rails will slide and reduce acceleration

Seismic Isolation Device 3

Seismic Isolation Device

Seismic Isolation Buildings

Earthquake Resistant Building
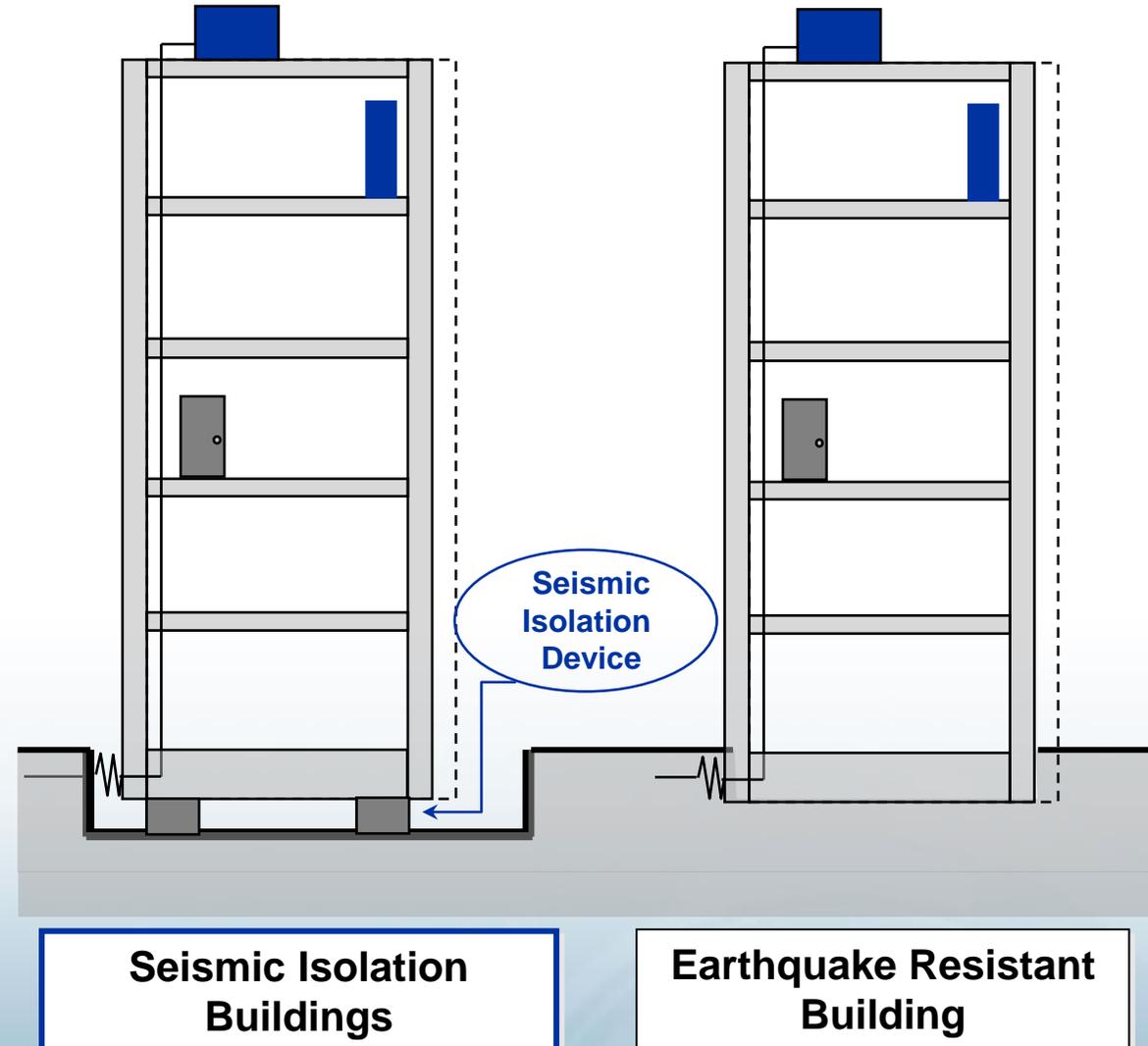
Tokyo IDC – **Multi-layer Security Standards to Ensure Data Safety**

After passing the building's admission application, the building's security gate and biometric authentication system will be automatically activated

Smart key management system

- Each rack has a different private key
- Keys are stored in electronic key boxes with biometric authentication
- The operator needs to apply in advance before locking and unlocking
- With key management function, comprehensive security protection

Round door for enhanced security control

- **Revolving door prevents tail-gating**
- Weighing rooms when entering and leaving to prevent equipment theft in the data center

⑥ **Rack key**

⑤ **Server room**
· Round door and biometric authentication

④ **Data center floor**
· Biometric authentication

③ **Lobby**
· Implementation of security gates and biometric authentication and tracking precautions

② **Data Center Reception**
· Entrance and exit control through the admission application form

① **Building entrance**
· Authentication

Stage ⑥

Stage ⑤   server room

Stage ④   data center floor

Stage ③   lobby

stage ②   Data Center Reception

Stage ①   building entrance

Tokyo IDC – **Cooling Configuration Ensures Smooth Operation**

Cooling Specification

N+2 air cooling redundant design, **no need for water**, using the ceiling return method to control the normal temperature and humidity of the computer room: **range:** 18°C~27°C, **normal range (%):** 50%±20% real-time air conditioning monitoring system adopts an air-cooled type that does not require water, and a water leak detection sensor is installed.

1 Cooling System

- A separate air-cooled air-conditioning system is dedicated to the machine room.

- Good stability and reliability, supporting telephone switching facilities.

2 Cold Aisle Capping

- Provided where cooling air is blown out: cooling air roofs and doors (cold aisle)
- Prevents warm air from entering cold aisles.

Three Characteristics

- Energy saving
- Inhibit temperature rise
- Shock proof

Prevent warm air from invading

Optimal temperature

空調機

Appropriate air volume
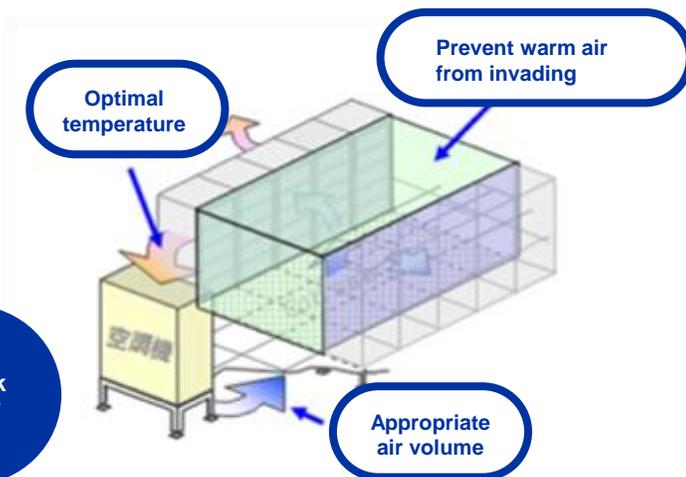
Cold Aisle

Increase reflectivity

- White cold aisle exterior walls increase light reflectivity and save energy

Fire-fighting measures

- Located in the cold aisle is directly connected to the fire suppression system
- Automatically send alerts instantly when smoke is detected

Tokyo IDC– **N+1 Ensures Uninterrupted Power Supply**

- Dual physical routes and capacity design of different transformers from one substation, as well as primary and backup systems currently in use.
- The generator adopts independent power receiving equipment, receives power main system and backup system under extra high voltage, and is installed in a separate fire compartment and physically isolated room.
- **N+ 1 generator redundancy design (gas turbine**), total capacity **4500kva x 4** (single 4500kva),continuous **operation for 26 hours.**
- N+1 UPS redundant design and power can be continuously used during maintenance; equipment is received from two sets of power sources, and connected to the rack in a way that duplicates all wiring routes.

Emergency Power Facility

In an emergency, use the power provided by the emergency power facility until the power company restores incoming power

1 Ultra high voltage   **2** Power receiving device   **4** UPS   **5** Line route

Power Station

- Power reception
- Primary and Backup Systems

main system

backup system

N + 1 redundancy

ups

Battery

ups

Battery

PDU

PDU

frame

frame

3 Emergency backup generator

N + 1 redundancy

Tokyo IDC – **Fire Suppression System**
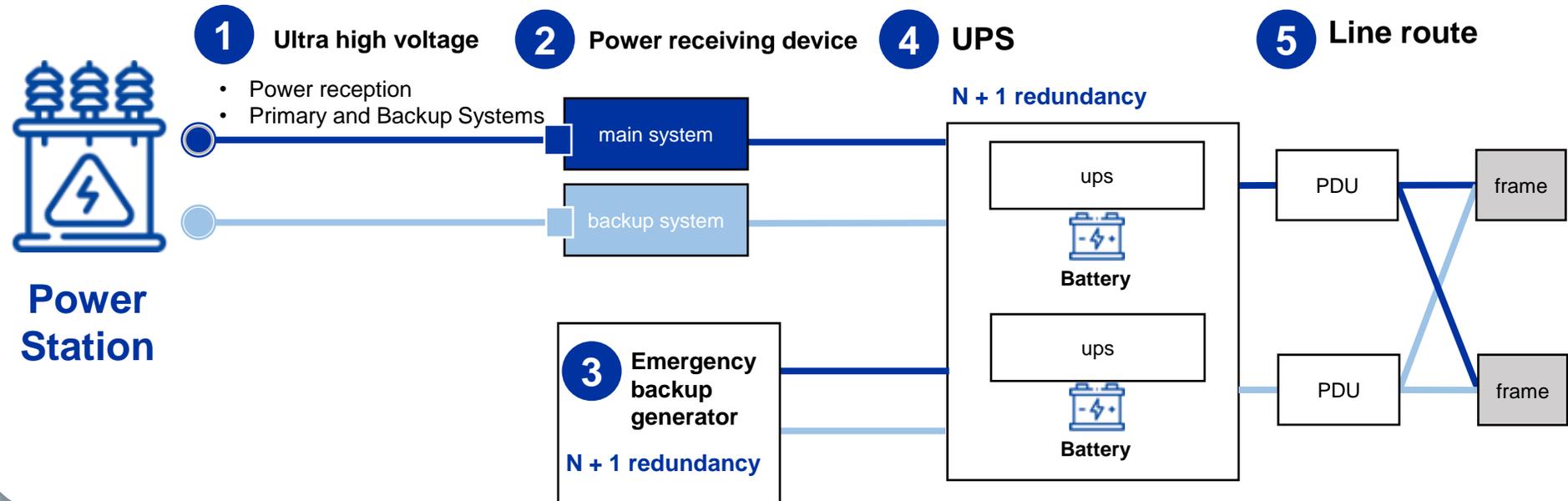
Smoke Detection System

Using a new gas based on nitrogen, the oxygen concentration is reduced through a chemical reaction with heat, and the same gas is used in the atmosphere, so it does not affect the ozone layer of the data center

Sensitive smoke detection system, which can detect the magnitude of fire smoke concentration in a short time

Aluminum Double Layer System

The introduction of a high-performance aluminum double-floor system, compared with traditional aluminum, can not only reduce the weight of the floor, but also improve the visibility of the server room floor.

Properly arrange the flue and fire doors to prevent the spread of fire in the data center and minimize losses in the event of an accident.

2.4 Frankfurt Global Switch IDC

Frankfurt IDC – **Highlight 1: European Data Center Hub**

- Frankfurt is the fifth largest city in Germany and an important industrial, commercial, financial and transportation center in Europe. It is also one of Europe's main data center, service provider and network hub.

- The Frankfurt computer room is located in Eschborner Landstraße 110, on the banks of the Main River, only 5.5 kilometers from downtown Frankfurt and the financial center and approx 15 minutes' drive from the international airport.

Colocation in European Data Center Hubs

Located in Frankfurt, Europe's most strategic digital center city. China Telecom's IDC is one of the most reliable data centers on the market, providing > 99.9999% availability and five-level physical security. We enable you to easily access the leading financial, telecommunications, media, manufacturing and business ecosystems in Europe, the Middle East and Africa.

Frankfurt IDC – **Highlight 2: Localized Professional Services**

Industry-Leading Connectivity

China Telecom provides fast, flexible and secure solutions, including MPLS-VPN, EPL , SD-WAN , Internet dedicated lines and fast routes to major public cloud providers, in full compliance with European and Chinese regulations. China Telecom will help you get the convenience of one-stop telecom and IT services when doing business in China, Europe and around the world .

End-to-end localization professional services

With decades of experience and local operations in more than 800 data centers around the world (more than 800 in mainland China and 26 overseas), China Telecom utilizes local customer support to enable transnational business development on a global scale. With thousands of experienced employees outside mainland China, China Telecom can provide you with custom professional services your business needs to ensure your business succeeds globally.

Frankfurt DC – **Overview**

Specifications

- 1000 m² hosting space

- 2MW IT power capacity

- Carrier neutral, Tier III standards design

- China Telecom Exclusive Entrance, Meeting Rooms, BCP, Office Spaces, and Storage Rooms

- Two MMRs , 2 additional Carrier/Meet-Me Rooms in CT Exclusive Private DC

- The target annualized PUE is lower than 1.2

- DC Certification: ISO 9001/ 14001/ 27001/ 45001/ 50001
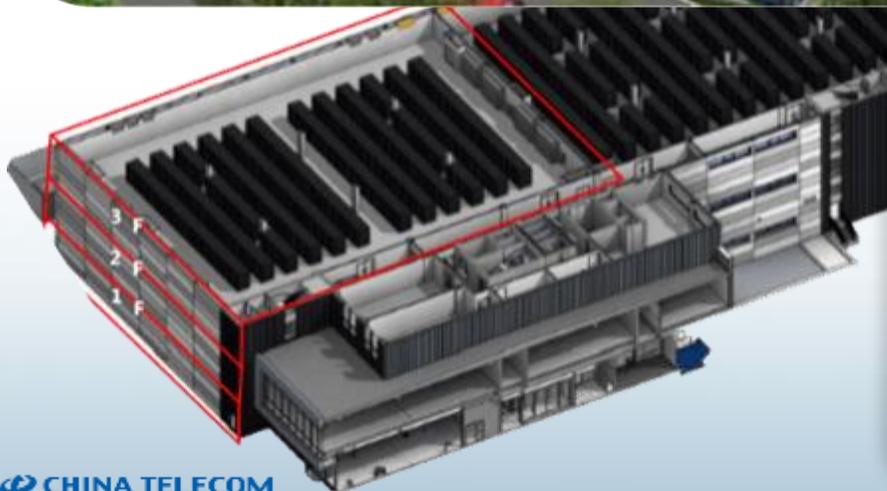
China Telecom Exclusive Private DC

- Located on the first floor L02

- Available racks : 317

- Rack electricity : 4KVA- 20KVA

- 2 diversified MMR and CT network POP

Frankfurt IDC – **Exclusive Space to Serve Customers**
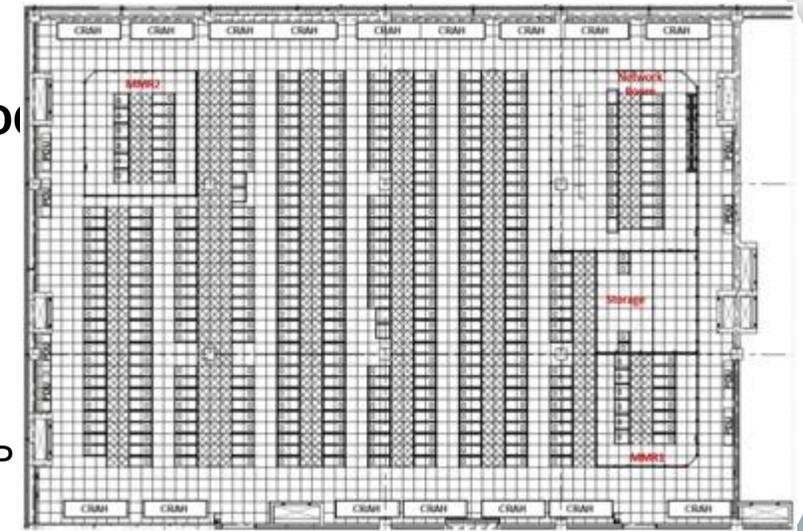
China Telecom Exclusive Space

- 1,000m²
- 2MW IT power
- 5,500mm storey height, 3,560mm net height
- 1,000mm high raised floor for cooling delivery
- LED lighting
- Accurate fire detection and alarm
- Inert gas fire extinguishing system
- Inert gas fire protection of Technical Suites
- 4,000kg Freight Elevator
- Structural floor load is usually 15.0KG/m², suspension service +2.5KG/m² (ceiling)

Frankfurt IDC – **Seamless Infrastructure Connection**

- Fiber Optic Ring Within the Park

- Dual External Road Duct Access

- Southwest and Northwest Line Entry Points Access the Fiber Optic Ring through Dedicated Ducts

- Multiple Routes from Each Duct to 2 Line Entry Points of FRA(N) and FRA(S)

- Surrounding the Entire Park with 18x100mm Fiber Optic Ducts

- Dedicated Fiber Optic Ducts for China Telecom

Entrance Facility

Large Communications Vault

Small fibre draw pit
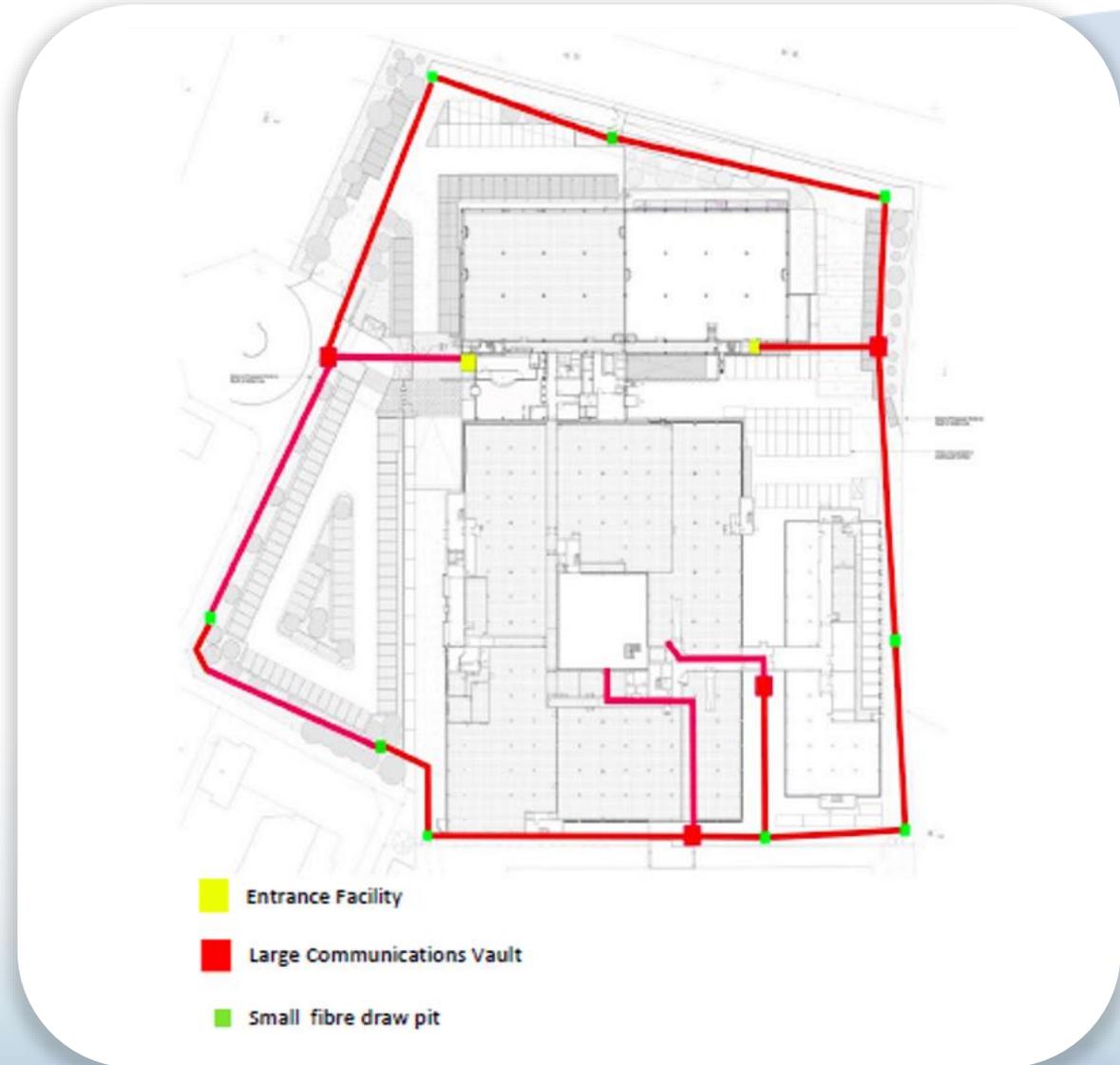
Frankfurt IDC – **Complete Power System for Stable Operation**
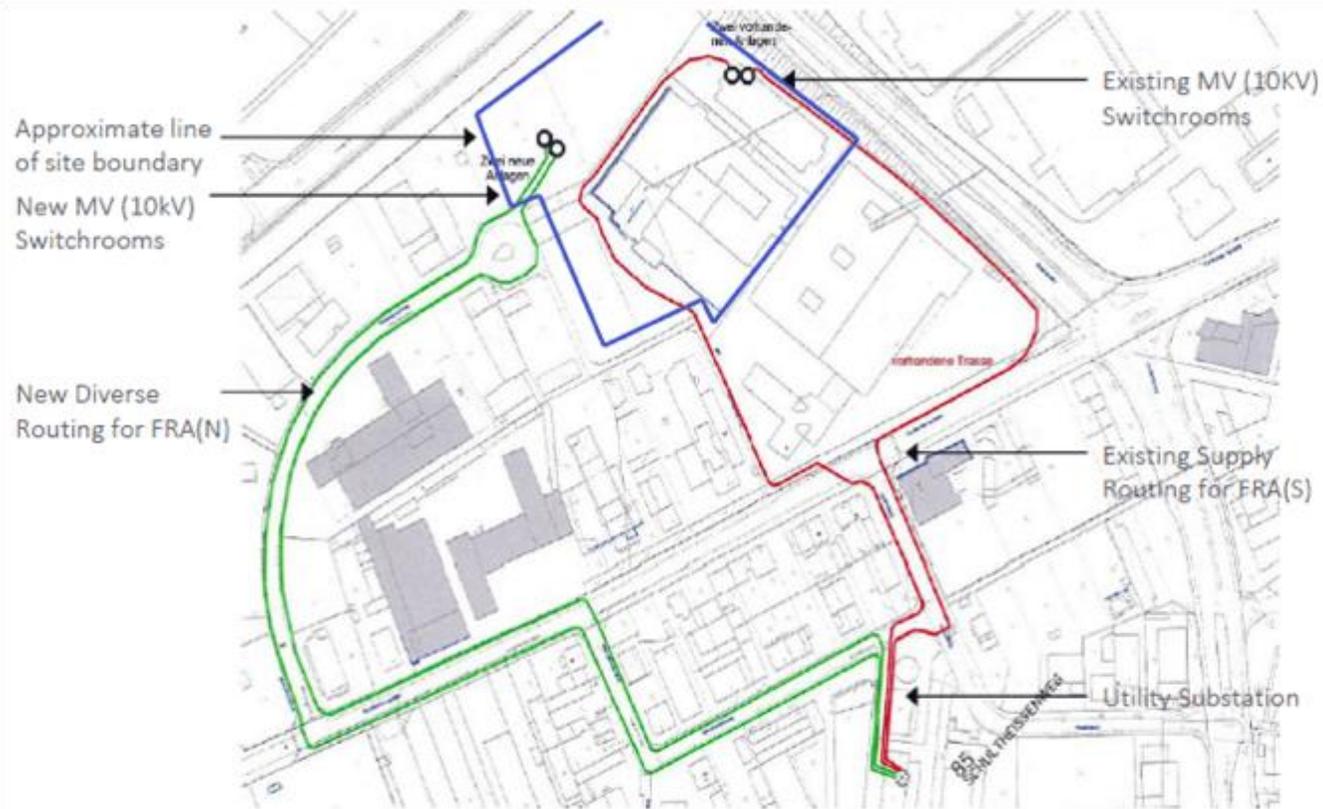
- Dual 10KV power supply N+N backup
- Distributed redundant power topology (N+1)
- Concurrent Maintenance Design – Tier III
- Static UPS battery life of not less than 15 minutes
- IT power supply and precision air conditioner are supported by
- Data Center Continuous Low Voltage Diesel Generators
- Load group cascading
- 24-hour diesel power reserve (24 - hour oil tank x 2)
- N+N IT rack power distribution
- Power monitoring system

Frankfurt IDC – **Multiple Fiber Access and Multiple Carrier Line Access**

- China Telecom
- 1&1 Versatel
- AT&T
- Belgacom
- BT
- Cogent
- Colt
- Deutsche Telekom
- euNetworks
- Gasline
- German Internet Exchange DE-CIX
- GTT

- KPN
- Lumen Technologies
- Megaport
- PCCW
- RETN
- Tata Communications
- Turk Telekom
- Verizon
- Witcom
- Zayo

Frankfurt IDC – **Efficient & Stable Cooling System**

- Configure N+1 water cooling system, w/ plans to upgrade to N+2 water cooling system
- Hybrid dry cooler and water-cooled cooler N+2 can support 12MW IT system to maintain a stable temperature of 24.5°C even under extreme external temperature and humidity conditions
- Quick Start Water Cooled Chillers
- Redundant cooling distribution risers
- UPS backup cooling pump
- N+2 downflow precision air conditioners, 16 units per room
- Water leakage detection system installed in the water pipes in the private room
- The air supply temperature of the server air inlet is 22-24°C, the maximum is 25°C
- N+1 24 -hour water storage system (7 sets of 100,000 liter water tanks) for adiabatic cooling with air handling and RH control
- Variable Speed EC Fan
- Closed cold aisle

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