



**INSTITUTE OF  
BUSINESS MANAGEMENT**

# **REQUEST FOR PROPOSAL**

## **INSTRUCTION TO THE BIDDERS**

Sep 1<sup>st</sup>, 2025

**IOBM PRIMARY DATA CENTRE REVAMPING &  
SHIFTING SERVICES.**



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## INTRODUCTION

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The Institute of Business Management (IoBM) is a leading institution in Pakistan that focuses on providing quality education in business management and related fields. It was founded in 1995 since then IoBM has grown to become a prominent educational institution in Pakistan. Our main campus is situated in Karachi, Pakistan. IoBM offers a variety of undergraduate and postgraduate programs, including degrees in Business Administration, Management Sciences, Computer Science, and Social Sciences. They also provide professional development courses and certifications. IoBM is recognized by various educational bodies in Pakistan and often collaborates with international institutions to enhance its educational offerings. The campus is equipped with modern facilities, including libraries, computer labs, and spaces for extracurricular activities, which contribute to a conducive learning environment.

The Institute of Business Management (IoBM) established its Data Center in 2017. This facility was created to support the growing technological needs of the institution and to enhance its educational programs, particularly in business and information technology. The Data Center provides a robust infrastructure for various academic and research activities at IoBM. This Data Center is an important facility currently here are some key features and aspects of the IoBM Data Center:

1. **Infrastructure:** The Data Center is equipped with modern server infrastructure, including high-performance servers and storage systems. It is designed to provide high availability and reliability, ensuring that the services offered are consistently accessible.
2. **Technology and Services:** The facility supports various IT services, including data storage, web hosting, and application services for faculty, students, and administrative departments.
3. **Security and Safety:** The Data Center incorporates advanced security measures, including physical security systems and cybersecurity protocols to protect sensitive data. Environmental controls, including comfort cooling systems and EMS to ensure that the servers operate under optimal conditions.
4. **Research Support:** The Data Center plays a vital role in research activities, providing computational resources for data analysis and research projects undertaken by faculty and students.
5. **Innovation:** IoBM's commitment to integrating technology into its curriculum is reflected in the Data Center, which supports innovative educational practices and digital learning environments.



## OBJECTIVE OF THIS RFP

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**IoBM** is seeking comprehensive proposals from qualified firms for Complete re-mapping and re-designing of their existing data center currently in operation. **Our primary goal is to re-design our current data center to a scalable, efficient, and secure data center that can be fully operate able and controlled able at port level from any remote locations and can supports our future operational and strategic objectives.**

There are few key points that need to be kept in mind before working on this design as beneath:

## SCOPE OF WORK

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The space and location for this data center is as per attached layout and it cannot be increase in size in any way or form, neither the location of the data center can be changed therefore all bidders are requested to design their solution as per the given location.

All Bidders will conduct the survey and will prepare the bid as per approved specification and information provided by IoBM in Annexure 1, 2 and 3 of the RFP.

Layout plan of building attached as Annexure-1. Is to be used as a reference and is the minimum requirement. Bidder will provide final proposed Layout plans as part of technical submission.

Minimum Bill of Quantities of the SCOPE OF WORK is attached as Annexure-2 for bidder's quick reference. Below are the details of each content / system / solution in the Annexure-2 all bidders are accepted to drive their proposal as per the detailed specifications given beneath. This is the minimum requirements that need to be present in proposed solutions.





## **I DATA CENTER ENVIRONMENTAL HEALTH CHECK**

After and Before this complete scope of work Data Center environmental corrosion coupon testing for current health check is mandatory.

## **2 CIVIL WORKS IN DATA CENTER**

All civil work inside or outside of data center related to this project will be done in live environment and there will be no downtime for these activities therefore the bidder need to address all necessary data center cleaning, environment and safety requirements to avoid any unnecessary downtimes.

- 2.1 Permanent closing of all glass windows** with fire-rated cement board partitions after complete waterproofing, sealing and thermal insulation of all windows from inside, before moving forward once this task is finish vendor will share complete **Thermal Images** of the work done for client's analysis.
- 2.2 Dismantling and removal** of all old false ceilings, glass, and block masonry walls and safely and professionally removing it from campus site.
- 2.3 Construction of fire-rated wall partitions** with complete waterproofing, sealing and thermal insulation of 50mm thick inside each wall for NOC, Store, Electrical, Staging, UPS & MMR rooms as per attached layout in this document as Annexure 1.
- 2.4 Construction of Server room front wall** with 12mm tempered **glass partition** on 1 feet high block masonry wall properly cemented plastered from all three sides.
- 2.5 Data center paint work** with fire-retardant paint material. The scope of work for paint job will include scraping of all walls, applying of putty and rubbing it to achieve smoothness. One coat of primer and 2 coats of fire retardant paint of approved color.
- 2.6 Fire-rated steel metal doors** complete with all accessories such as handles with lock and keys, door closers, hinges, anchor bolts, etc. complete in all aspects including installation. Double leaf door for main entrance and single leaf doors for NOC, Electrical, Staging, MMR, and UPS rooms.
- 2.7 Provision and Installation of imported Zinc Oxide treated & then 3.0Mils powder coated grey in color perforated metallic 8" x 2"** under the raised floor cable tray for all power cables between all power panels, UPS and Racks. Complete with all fitting and mountings accessories, with proper grounding and bonding as per TIA-942 standards.



- 2.8 Provision and Installation of imported 360x100 mm size **Fire retardant, low smoke zero halogen PVC Fiber runner** with factory Prefabricated joints, droppings, covers, end-caps and other accessories like mounting and hanging running overhead on ceiling. Yellow in color. Suitable for both fiber optic and copper data cables, and shall facilitate organized cable routing between different racks within the Data Center. All work shall be executed as per attached layout drawings, ensuring compliance with best practices for cable segregation, bend radius, and airflow optimization.

Deleted: all data cables

Deleted: or

### 3 CCTV SOLUTION FOR ALL ROOMS OF COMPLETE DATA CENTRE

The qualified vendors will be responsible for supply, installation, and commissioning of a **high-definition CCTV surveillance system** for all rooms within the Data Centre as per the attached drawings.

- **Scope of Work**  
The selected vendor shall provide a **complete end-to-end CCTV solution**, including:
  - **4MP Truelight IR Fixed Wide Lens Cameras** (as per specifications below)
  - **Network Video Recorder (NVR)** with sufficient storage for **15 days of full-resolution recording**
  - **PoE switches, cabling, power supply, and necessary accessories**
  - **Installation, configuration, and testing**
  - **Training for operational staff**

#### Technical Specifications

##### a) Camera Specifications

Feature	Requirement
Model	4MP Wide Angle Fixed Bullet WizSense Network Camera
Resolution	4MP (2688 × 1520) @25/30 fps, Max 5MP (2880 × 1620) @20 fps
Sensor	1/2.7" CMOS Starlight-grade for low-light performance
Lens	Wide-angle fixed lens (specify focal length if needed)



Feature	Requirement
IR Illumination	Up to 20m
Video Compression	H.265/H.265+/H.264+/AI encoding
Intelligent Analytics	- Intrusion Detection - Tripwire (Human/Vehicle Classification) - SMD 4.0 (Smart Motion Detection)
Additional Features	- WDR, 3D NR, HLC, BLC - EPTZ (Digital Zoom & Tracking) - Rotation Mode, Digital Watermarking
Storage Support	MicroSD (up to 256GB)
Connectivity	PoE (802.3af) or 12V DC
Interoperability	<b>ONVIF (Profile S/Profile G/Profile T); CGI; P2P</b>
Ingress Protection	IP67
Audio	Built-in MIC, 1 audio in/out
Alarm I/O	1 input, 1 output

**b) NVR Requirements**

- Supports **4MP/5MP camera recording**
- **Minimum 15 days of storage** at full resolution (calculate based on camera count & bitrate)
- **H.265/H.265+ support** for efficient storage
- **Remote monitoring & mobile app support**
- **RAID support (if applicable)**
- **Failover & redundancy features**

**c) Additional Requirements**

- **Structured cabling** if not covered in other sections (Cat6 recommended)
- **PoE switches** (if not using built-in NVR PoE ports)
- **Surge protection & UPS backup** for critical components if no other option is available
- **Compliance with local data privacy laws**



#### **4 IP-ENABLED BIOMETRIC ACCESS CONTROL & CENTRALIZED MONITORING SYSTEM**

The selected vendor shall provide a **complete end-to-end supply, installation, and integration** of an **IP-enabled biometric access control system** with **centralized management software**. The system must support **multi-factor authentication** (card, password, fingerprint, and facial recognition) and integrate with **CCTV surveillance** for enhanced security.

We need a complete **IP-based biometric access control system** with:

- **Four-in-One Controllers** (Card + Password + Fingerprint + Face Recognition)
- **Three-in-One Controllers** (Card + Password + Fingerprint)
- **Centralized Software** (to manage access + CCTV together)
- **Magnetic Locks, Wiring, and 10 Access Cards per Controller**

##### **System Specifications**

##### **a) Four-in-One Controller**

- **Works with:** RFID Card, PIN, Fingerprint, Facial Recognition
- **Connectivity:** IP Network (TCP/IP)
- **Speed:** Recognize faces/fingerprints in **<1 second**
- **Supports:** 1,000+ users, magnetic locks, anti-tamper alarms

##### **b) Three-in-One Controller**

- **Works with:** RFID Card, PIN, Fingerprint
- **Connectivity:** IP or standalone
- **Speed:** Recognize fingerprints in **<1 second**
- **Supports:** 1,000+ users, magnetic locks, anti-tamper alarms

##### **c) Central Software**

- **Single dashboard for access control + CCTV**
- **Live alerts for break-ins/unlocked doors**
- **Mobile app for remote control**
- **Stores logs** (export to Excel/PDF)

##### **d) Other Items Needed**

- Heavy-duty **magnetic door locks** (12V/24V)
- **Cables, power backup (UPS), surge protection**
- **Installation & training**

##### **Key Notes:**

- **Prefer ONVIF-compliant devices** (for CCTV integration).



- Mention if you offer cloud/web-based software.

## **5 ANTI STATIC Vinyl FLOORING OF DATA CENTER**

The qualified vendors will be responsible for supply, installation of a premium anti-static Vinyl flooring system for Staging room, complete with all necessary accessories, including adhesive.

### **5.1** Provide anti-static Vinyl flooring tiles and/or sheets that meet the following specifications:

- Thickness: 2.0 mm
- Tile Size: 608 x 608 mm
- Weight: Approximately 3500 g/m<sup>2</sup> (EN 430)
- Residual Indentation: < 0.1 mm (EN 433)
- Light Fastness: > 6 (ISO 105-B02)
- Conductivity Resistance: < 10 ohm (EN 1081)
- Treading Test: < 2 kV (EN 1815)
- Electrical Insulation Value: Rated B - S1 (VDE 0100)
- Chemical Resistance: Compliant with EN 423
- Castor Chair Resistance: Suitable for castors type W (EN 425)

### **5.2** Installation Services

- Provide professional installation of the flooring system, ensuring proper adherence to specifications and standards.
- Include all necessary accessories, such as high-quality adhesive specifically formulated for anti-static flooring.
- Grounding & Bonding of Anti-Static Floor via Copper tape and properly terminated at main Grounding Bus Bar with proper Lugs as per TIA-942 Standard.

## **6 ANTI STATIC RAISED FLOORING OF DATA CENTER**

The qualified vendors will be responsible for supply, installation of a Anti-Static Raised flooring system for Server, Electrical, UPS and MMR rooms that meets the following specifications to enhancing underfloor air distribution and increasing flexibility for data and electrical routing systems:

### **6.1** Material Requirements:

- **Calcium Sulphate or HPL ESD Vinyl Cementitious Steel** Raised Floor Consist of Pedestal & Stringers.
- Perforated 70% Airflow Panels for underfloor air conditioning as required.





- Antistatic ESD Floor Tiles with the following characteristics:
  - Thickness: 28mm minimum
  - Tile Size: 608×608mm
  - Residual Indentation: <0.1mm
  - Weight: approximately 13.7KG with Trim Edges.
  - CISCA or ISO Approved Manufacturer with load bearing capacity Third Party Certificate
  - Earth Resistance >-1x10ohms
  - Measurement deviation EN12825 Class A
  - Bare loading Capacity 9540N
  - Uniform load 1300N
  - Rolling Load 2600N
  - Reaction to Fire performance of the carrier panel BS476-4, BS476-6& 7
  - Green environmental product declaration ISO 14025
  - Proper Grounding & Bonding under the Floor & active Equipment Rack with Meshed Copper Wire and U-Clamps & terminated on dedicated ground bus bar following TIA-942 chapter of Grounding & Bonding.
- Performance Criteria:
  - Seismic proof performance.
  - Resistance to scuff marks and staining, requiring minimal maintenance.

## **7 PRECISION AIR CONDITIONING SYSTEM FOR UPS & MMR ROOM**

The qualified vendors will be responsible for supply, installation, and commissioning of 2.34 TON Direct Expansion Air-Cooled Precision Air Conditioning System designed specifically for UPS & MMR room environments as per following specifications:

**7.1** Nominal Cooling Capacity: **8 kW or Higher**

**7.2** Air Flow Rate: **1850 m³/h**

**7.3** **System Characteristics** type:

**7.4** **Direct expansion air-cooled**

**7.5** Return Air Intake: **Front bottom**

**7.6** Cooled Air Flow: **Front top**



**7.7 Humidification/Dehumidification**

**7.7.1** Equipped with: **Humidifier/Dehumidifier**

**7.7.2** Humidifier Type: **Electrode or Infrared**

**7.7.3 Microprocessor Control:** Dedicated Microprocessor for optimal server room environment control.

**7.8 Compressor Details:**

**7.8.1** Type: **Copeland Scroll or Hermetic**

**7.8.2** Quantity: **1**

**7.9 Indoor Blower Fan:**

**7.9.1** Type: **Back curved blades centrifugal fan**

**7.9.2** Quantity: **1**

**7.10 Heater:**

**7.10.1** Type: **PTC**

**7.10.2** Rated Power: **2 kW or Higher**

**7.11 Air Displacement:**

**7.11.1** Air Supply: **Front**

**7.12 Noise Levels:**

**7.12.1** Indoor Unit Noise Level: **52 dB**

**7.12.2** Outdoor Unit Noise Level: **58 dB**

**7.13 Controller and Communication:**

**7.13.1** Controller Language: **English**

**7.13.2** Communication Interface: **RJ45**

**7.13.3** Communication Interface: **RS485**

**7.13.4** Communication Protocol: **Modbus RTU**

**7.14 Power Requirements:**

**7.14.1** Power Supply: **(220 or 380V)/50Hz**

The selected integrator will be responsible for Supplying the specified Precision Air Conditioning System. Professional installation of the system with original Muller USA copper piping system, providing drain of proper size complete in all aspect, ensuring compliance with specifications. Testing and commissioning of the system upon installation including complete training.

## **8 GROUNDING & BONDING SYSTEM**

### **8.1 Overview**

This involves creating earthing pits and implementing grounding systems in compliance with the ANSI/TIA/EIA-607 standard, which governs earthing in



telecommunications environments. It should last at least 20 years, providing Safety for equipment and personnel from electrical faults by directing excess current safely into the ground.

## **8.2 Scope of Work**

The selected contractor will be responsible for the supply and installation of a comprehensive Imported single supplier Grounding & Bonding System to ensure the safety and reliability of electrical systems within the Data Center. The scope of work will include following components and services:

- High Conductivity Active Green Earth Pits
  - Installation and provision of the following pits at ground level, closest to the Data Center outside wall:
    - One pit for Information and Communication Technology (ICT)
    - One pit for Raw Power
    - One pit for UPS Power
  - The scope includes all necessary materials, labor, tools, transportation, and accessories.
  - This includes clips, tees, lugs, exothermic cad welding, and any other required items.
- Main Grounding Bus Bar
  - Supply and installation of a 200 mm x 75 mm x 6 mm electroplated **imported branded** copper bus bar mounted on wall insulators, as per client instructions.
  - The bar should be equipped with suitable holes for installation of required earth leads and continuity conductors via lugs.
- Branded Ground Bus Strip
  - Supply of branded Ground Bus Strip as specified.
- Branded Bonding Kit
  - Supply of branded Bonding Kit as specified.
- Earthing Conductors (10 Sqmm)
  - Supply of 10 Sqmm single-core PVC insulated green copper earthing conductors for equipment grounding and potential equalization of metallic structures and equipment.
  - The supply must include all accessories, including lux sleeves and conduits.
- Earthing Conductors (6 Sqmm)



- Supply of 6 Sqmm single-core PVC insulated green copper earthing conductors for equipment grounding and potential equalization of metallic structures and equipment.
- The supply must include all accessories, including lux sleeves and conduits.
- **Exothermic Welding:** This is a high-quality method used to join metal components with a strong bond.

### **8.3 Requirements**

Vendors are requested to provide the following in their proposals:

- Detailed descriptions of materials, including data sheets and compliance certificates.
- Warranty and support details.

## **9 ALL ELECTRICAL ALLIED WORKS**

Electrical **Scope of Work** outlines the specific tasks and responsibilities that the contracted company will complete to enhance the electrical infrastructure of our data center. Each point indicates critical components necessary for the proper functioning, safety, and efficiency and longevity of the facility's operations. Electrical work proposal should ensure that the data center's electrical systems are robust, reliable, and safe.

### **9.1 Automatic Transfer Switch (ATS)**

The contractor will provide and install a rack-mountable ATS rated for 32AMP and 220V with 2 input and 8 Output of IEC along with Power Cords. An ATS is crucial because it automatically switches the power supply from the main line to a backup generator in case of power failure. Key specifics include:

- 9.1.1** Pluggable Input Power Cables: These allow easy connection/disconnection to the power supply.
- 9.1.2** 19-inch 1U Design: This means the ATS will fit into standard server racks, saving space.
- 9.1.3** SNMP Capabilities: The device must support Simple Network Management Protocol, enabling remote monitoring and management, which enhances operational efficiency and reliability.



## **9.2 Industrial Sockets**

The contractor will install two 32A male-female industrial sockets per rack, mounted on overhead cable trays. This enables easy access to power sources for equipment and ensures the following:

**9.2.1 Reliability:** Industrial sockets are designed for high durability.

**9.2.2 Electrical Wiring:** The sockets will connect back to UPS (Uninterruptible Power Supply) panels, ensuring that all equipment receives consistent power.

## **9.3 Wiring/Wiring Accessories:**

- Circuit wiring from Main Distribution Board (MDB) to switchboards using 3 x 2.5 sqmm wires including wiring between switchboards in PVC conduit, complete with all accessories.
- Circuit wiring for light points from switchboards using 3 x 1.5 sqmm wires in PVC conduit, including all accessories.
- Circuit wiring from light point to light point, and from MDB to Emergency Lights using 3 x 1.5 sqmm wires in PVC conduit, complete with accessories.

## **9.4 Wiring for various systems, including:**

- Small wiring for utility power sockets.
- Power wiring for door access systems, shoe warping machines, Wi-Fi points, fire alarm suppression systems, and others.
- Power wiring for AC units and air curtains.
- Power wiring for SMART 4 RACKS CONTAINMENT.
- Network wiring with CAT6 UTP copper cable in appropriate conduits.

## **9.5 Power Wiring Components:**

**9.6** Different configurations of power wiring for server rooms, communication racks, and MMR & UPS rooms utilizing specified cabling.

**9.7** Installation of circuits for emergency lighting, industrial sockets, and various power distribution units (PDUs).

## **9.8 Miscellaneous Electrical Components:**

**9.9** Light controlled switches, utility power sockets, and emergency light fixtures as specified.

**9.10** Providing factory-tested distribution panels compliant with IEC standards.

## **9.11 Lighting System**





The lighting system must be designed to provide uniform illumination of 500 lux (a measure of brightness), which is essential for visibility and safety within the data center. The contractor will:

**9.11.1** Assess New Layout: Adapt lighting requirements to support the relocation and placement of racks and equipment efficiently.

**9.12** Electrical Work for Cooling Units

New precision cooling units require dedicated electrical work to ensure they operate effectively. This could involve:

**9.12.1** Wiring: Installation of electrical circuits specific to these units to ensure they receive the proper power supply needed for cooling operations.

**9.13** Cable Removal

Following the completion of all electrical work, the contractor must remove any excess cables, which may include:

**9.13.1** Cleanup: Ensuring the data center is left tidy and free from unnecessary materials that could hinder operations or create safety hazards.

## **10 FULLY REDUNDANT N+1 SMART 4 RACKS INROW CONTAINMENT SOLUTION**

The vendor shall provide a **single manufacturer solution** MAF & Principal Partnership Certificate will be required for qualification. The solution must be [Vertiv](#), [Huawei](#), Kotohira, [APC](#) Brand only. Vendor will be responsible for the Supply, installation, and commissioning of a Smart 4 Racks Solution for our Server room. Vendor should meet minimum specification for this solution as detailed beneath. However, A solution in higher specification and configuration will be acceptable only from approved brands as above.

### **Scope of Work**

The solution includes cabinets, accessories, power supply, refrigeration management, dynamic environmental monitoring, and security systems. All components must come from a single manufacturer to ensure compatibility and



reliability. This section outlines the technical specifications, scope of work, and requirements for the project. The system will be minimum to the following components:

#### **10.1 System Cabinet and Accessories**

- **Cabinet Frame:** Sheet metal bending/welding, top/bottom plates, columns (42U), crossbeam support, load-bearing corner cones with a load bearing capacity of 1200kg min, Adjustable Casters.
- **Front Door:** 5mm tempered clear view glass + flame-retardant PVC board, welding reinforcement ribs, locks.
- **Side Panels:** Upper/lower split for easy access.
- **Cable Management:** Vertical boards, sealing strips, at the back of rack.
- **Monitoring:** Over I.P EMS for smoke, power, door sensors, temperature/heat (integrated with fire suppression).
- **Power Supply:** Switching Power Supply 220Vac/12Vdc/32Amp.

#### **10.2 IT Cabinets and Accessories**

- **Cabinet Frame:** As above (Qty: 3)
- **Doors & Locks:** Glass/ doors, electric locks, reinforcement ribs etc.
- **Lighting:** Dual-color lights, travel switch connection.
- **Insulation:** Fire-retardant cotton + sheet metal protection
- **Mounting:** L-shaped brackets, load-bearing plates (120kg capacity)

#### **10.3 Fully Redundant Power Distribution System**

The system must include a **2 x 15KVA UPS or higher**, intelligent power distribution units (PDUs), battery backup, and associated components as detailed below.

##### **10.3.1 Scope of Work**

The vendor shall provide a **fully redundant, rack-mounted power distribution system** with the following specifications:

##### **10.3.1.1 UPS System Requirements**

- **Type:** Online dual-conversion UPS
- **Capacity:** 15KVA
- **Control:** Fully digital DSP with LCD display
- **Output Power Factor:** 0.9
- **Voltage:** 192Vdc



- **Rack Structure:** With Parallel Kit
- **Monitoring:** SNMP monitoring card (compatible with the UPS)

#### **10.3.2 Battery Backup System**

- **Type:** Rack-mounted lead-acid sealed batteries
- **Configuration:** (20 pcs × 12V, 9AH) × 2 \*(VRLA)
- **Backup Time:** ≥7.8 minutes

#### **10.3.3 Power Distribution Requirements**

##### **10.3.3.1 2.3.1 Three-Phase Distribution (Schneider Breakers)**

- **Total Input:** 125A/3P
- **Lightning Arrester:** 40KA/4P
- **Lightning Protection Switch:** 63A/4P
- **UPS Maintenance Bypass:** 100A/2P
- **UPS Input:** 63A/3P × 2
- **UPS Output:** 100A/2P × 2
- **Air Conditioning Switch:** 32A/3P × 2
- **PDU Switches (1-4):** 32A/1P × 4
- **DC Output:** 10A/1P

##### **10.3.3.2 2.3.2 Intelligent Single-Phase Input/output PDU (Rack-Mounted)**

- **8-way detection** (customizable & expandable)
- **Input Monitoring:**
  - Voltage, current, active power, power factor
  - Load rate, harmonics
- **Output Monitoring:**
  - Voltage, current, power, load rate
  - Electrical energy, power factor
- **Switch Status Monitoring:** Input & output
- **Alarm Detection:** Lightning protection
- **Communication Interfaces:**
  - RS485 × 4
  - SNMP (optional)
  - Dry contact × 3 (for temp/humidity, smoke, access control)
- **Indicators:** Buzzer & LED lights
- **DC Power Supply:** 12V/8.5A, 2-way output

#### **10.4 Fully Redundant 12.8kW Precision Air Conditioning System**

##### **10.4.1 . Introduction**



Vendors to supply and install a fully redundant, row-level precision air conditioning (AC) system for our data center rack solution. The system must provide precise temperature and humidity control with energy-efficient variable frequency operation and seamless integration with our existing power distribution infrastructure.

#### **10.4.2 Scope of Work**

The vendor shall provide a fully redundant, row-mounted precision AC system with the following specifications:

##### **10.4.2.1 System Requirements**

- **Cooling Capacity: 12.8kW**
- **Type: Single cooling (direct expansion)**
- **Redundancy: Fully redundant configuration (N+1 or dual-compressor setup)**
- **Installation: Row-level mounting**
- **Outdoor Unit: Included (matched capacity)**

##### **10.4.2.2 Key Functional Features**

- **Variable Frequency Compression:**
  - **Dynamically adjusts cooling capacity to prevent condensation**
  - **Optimizes energy efficiency under partial load conditions**
- **EC Fan Control:**
  - **Automatically adjusts internal & external fan speeds for optimal airflow**
- **Refrigerant Management:**
  - **Built-in pressure & temperature sensors**
  - **Electronic expansion valve (EEV) for precise refrigerant flow control**
- **Input Power:**
  - **380V/3P/60Hz (Model: S-012RAH or equivalent)**

##### **10.4.2.3 Monitoring & Control**

- **Real-time monitoring of:**
  - **Temperature, humidity, airflow**
  - **Refrigerant pressure & temperature**
  - **Compressor & fan status**
- **Alarm & Alert System:**
  - **High/low pressure warnings**
  - **Temperature deviations**



- Fan/compressor failures
- **Communication Interfaces:**
  - Modbus RS485 (for integration with DCIM/BMS)
  - SNMP (optional for network monitoring)
  - Dry contacts for external alarms (e.g., fire suppression, access control)

#### 10.4.2.4 Redundancy & Reliability

- **Dual-compressor design (or N+1 backup)**
- **Hot-swappable components (fans, filters, etc.)**
- **Automatic failover in case of primary unit failure**

### 10.4.3 Requirements

Vendors must provide:

- **Technical Specifications & Compliance Sheet**
- **Cooling Performance Data (at varying loads)**
- **Installation & Commissioning Plan**
- **Energy Efficiency Ratings (COP, kW/Ton)**
- **Warranty & Maintenance Support Terms**
- **Extended support**

## 10.5 Dynamic environmental monitoring system

### 10.5.1 . Introduction

Vendors to supply and integrate a **centralized Environmental Monitoring System (EMS)** for our Smart Rack solution. The system must provide **real-time monitoring** of critical parameters (power, temperature, smoke, access control, etc.) and **seamless integration** with our existing fire suppression and DCIM/BMS systems.

### 10.5.2 Scope of Work

The vendor shall provide a **fully integrated EMS solution** with the following components and functionalities:

#### 10.5.2.1 EMS Monitoring Host

- **Display: ≥10-inch color touchscreen** (real-time monitoring & control)
- **Monitoring Capabilities:**





- **Power:** UPS input/output voltage, current, power
- **Environmental:** Temperature, humidity
- **Safety Alarms:** Smoke, water leakage, door access
- **Fire Suppression Integration:** Interface with suppression system
- **Communication Interfaces:**
  - **SNMP** (for DCIM/BMS integration)
  - **RS485** (for sensor connectivity)
  - **Dry contacts** (alarm relay outputs)
- **Rackmount Design:** Standard 19" rack installation

#### 10.5.2.2 2.2 Network & Connectivity

- **16-Port Managed Network Switch**
  - **Speed:** 10/100/1000Mbps
  - **Cascading Support** (RJ45 wiring)
  - **Power:** 12V DC (magnetic adsorption mounting)

#### 10.5.2.3 Sensors & Detection Systems

Sensor Type	Specifications
Photoelectric Smoke Detector	High-sensitivity, low false-alarm rate
Temperature & Humidity Sensor	RS-485 output, $\pm 0.5^{\circ}\text{C}$ accuracy
Water Leakage Detection	2.5m induction line, zone-based alerts
Access Control System	2-door controller, user management, logs, authorization

#### 10.5.2.4 Power Supply

- **DC Power Module: 12V/30A** (for sensor & peripheral power)
- **Redundancy:** Optional backup power support



### **10.5.3 Functional Requirements**

**Real-time monitoring & alerts** (SMS/email/SNMP traps)

**Historical data logging & reporting**

**Integration with fire suppression system** (automatic trigger on smoke detection)

**User access control & audit logs**

**Scalability for future sensor additions**

### **10.5.4 Requirements**

Vendors must provide:

- **Technical Specifications & Compliance Matrix**
- **System Architecture Diagram**
- **Integration Methodology (Fire Suppression, DCIM/BMS)**

## **10.6 Integrated Access Control and Fire Suppression System for Smart Racks**

### **10.6.1 Introduction**

Vendors to supply and integrate a three-in-one access control system and a rack-mounted fire suppression system using NOVEC 1230 for our data center. The solution must provide secure access management and automated fire suppression, fully integrated with our Environmental Monitoring System (EMS).

### **10.6.2 Scope of Work**

#### **10.6.2.1 Three-in-One Access Control System**

- **Authentication Methods:**
  - **Swipe Card (RFID)**
  - **Password (Keypad)**
  - **Fingerprint (Biometric)**
- **Features:**
  - **Multi-user support with role-based permissions**
  - **Real-time logging (entry/exit events, failed attempts)**
  - **Tamper-proof design with alarm triggers**



- Integration with EMS for centralized monitoring

#### **10.6.2.2** Rack-Mounted Fire Suppression System (NOVEC 1230)

- **Suppression Agent:** NOVEC 1230 (clean agent, zero residue)
- **System Components:**
  - Fire Plug Frame (rack-mountable)
  - Pressure Gauge Meter (real-time monitoring)
  - Solenoid Valve (automated trigger via EMS)
  - Manual Release Valve (emergency override)
  - Heat Detection Pipes & Nozzles (directed suppression)
- **Activation Triggers:**
  - EMS-integrated smoke/heat detection
  - Manual override option
- **Compliance:**
  - NFPA 2001 (clean agent fire suppression)
  - UL/FM Certified

#### **10.6.2.3** EMS Integration Requirements

- **Real-time monitoring of:**
  - Fire suppression system status (pressure, valve state)
  - Access control logs (unauthorized entry alerts)
- SNMP/Modbus interface for DCIM/BMS connectivity
- Alarm escalation (SMS/email/audible alerts)

#### **10.6.3** Requirements

Vendors must provide:

- Technical Specifications (compliance with NOVEC 1230 standards)
- System Architecture Diagram (access control + fire suppression + EMS integration)
- Installation & Commissioning Plan
- Testing Protocol (fire suppression activation tests)
- Access Control: Swipe card/password/fingerprint (Qty: 4)

All components must be from an approved single manufacturer



**Compliance with data center standards (TIA-942, ISO 27001).** System must support northbound integration with DCIM/BMS platforms.

**Warranty: Minimum 2 years for all equipment.**

## **II (DCIM) DATA CENTER REALTIME SMART AND REMOTE MANAGEMENT AND CONTROLLING SYSTEM**

Bidders must be certified for the supply and installation of this DCIM system along with it all equipment. This system should comply with relevant standards and meet specific technical requirements outlined below.

### **SYSTEM REQUIREMENTS**

#### **11.1 Real-time Smart Serial Console Server**

As part of REALTIME SMART AND REMOTE MANAGEMENT AND CONTROLLING SYSTEM and to enhance the accessibility and availability of our IT infrastructure, we are looking to implement secure in-band and out-of-band remote access solutions. Our aim is to facilitate effective management of all serial devices in a cost-effective, secure, and scalable manner. The bidders must be certified and authorized to supply and install this Serial Console Servers that meets the established requirements as per the essential features, specifications, and conditions that are outlined here:

### **PRODUCT SPECIFICATIONS**

#### **11.1.1 System Accessibility and Availability**

**11.1.1.1 Secure Access Options:** In-band and out-of-band remote serial console and USB console access.

**11.1.1.2 GUI and CLI:** Browser access with an intuitive graphical user interface (GUI) and terminal-based access with a menu-driven user interface or command-line interface.

**11.1.1.3 Modem Capabilities:** Integrated modem dial-in, dial-back, and dial-out capabilities.

**11.1.1.4 Front USB Ports:** For storage, USB console access, and UC232B connections.



**11.1.1.5 Laptop USB Console Port (LUC):** Facilitate local console access via a laptop.

**11.1.1.6 Dual Ethernet Ports:** Allow for failover control or dual IP address access.

**11.1.1.7 Dual Power Supply:** Ensure continuous operation and redundancy.

#### **11.1.2 Serial Console Management**

**11.1.2.1 Environmental Monitoring:** Support for sensor ports for monitoring environmental conditions.

**11.1.2.2 Access Control:** Relay port for cabinet door access control.

**11.1.2.3 Auto-Sensing DTE/DCE:** Support for direct connection to Cisco network switches without requiring rollover cables.

**11.1.2.4 Online/Offline Detection:** Capable of monitoring connected serial devices, with event notifications for offline statuses.

**11.1.2.5 Response Checks:** Regular system status checks of connected serial devices.

**11.1.2.6 Access Methods:** Support for selectable Telnet/SSH and third-party clients, including PuTTY.

**11.1.2.7 Comprehensive Viewer Functions:** Features including copy/paste, logging, data import, macros, broadcasting, and messaging.

**11.1.2.8 Sun Solaris Compatibility:** Ensure compatibility with Sun “break-safe” modes.

**11.1.2.9 Alert Strings:** Capability of sending alerts via SNMP Trap and email based on predefined strings from serial devices.

**11.1.2.10 Command Filtering:** Allow administrators to restrict user access to predefined commands.

**11.1.2.11 Simultaneous Connections:** Support multiple users simultaneous access to a port, with selectable modes (Exclusive, Occupy, Share).

#### **11.1.3 Security**

**11.1.3.1 Secure Log-in Protocol:** Support for secure login via TLS 1.2 and RSA 2048-bit certificates.

**11.1.3.2 Configurable Permissions:** Customizable user permissions for port access and control.

**11.1.3.3 Authentication Options:** Local, remote, and third-party authentication (RADIUS, TACACS+, LDAP/AD, Kerberos).





**11.1.3.4 IP/MAC Filtering:** Enhanced security through filtering options.

**11.1.3.5 FIPS Compliance:** Adhere to FIPS 140-2 level 1 security standards.

**11.1.3.6 Granular Security Levels:** Support for High, Medium-high, Medium, or Custom security configurations.

#### **11.1.4 System Management**

**11.1.4.1 Configuration Management:** System configuration via web browser, Telnet/SSH client, and local console.

**11.1.4.2 Logging Features:** System and event logging capabilities.

**11.1.4.3 Event Notifications:** Save logs to various destinations and notify via SMTP email and SNMP Trap.

**11.1.4.4 Backup and Firmware Upgrade:** Enable backup/restore system configurations and firmware upgrades.

**11.1.4.5 Browser Compatibility:** Multi-browser support (Internet Explorer, Chrome, Firefox).

**11.1.4.6 Time Synchronization:** NTP support for time server synchronization.

**11.1.4.7 Network Layer Support:** Compatibility with IPv4 and IPv6 and LLDP support.

**11.1.4.8 CLI Support:** Command-line interface functionalities.

**11.1.4.9 Centralized Integration:** Compatibility with centralized management software.

#### **11.1.5 Serial Device Management**

**11.1.5.1 Operation Modes:** Support multiple operation modes (Console Management, TCP Server/Client, etc.).

**11.1.5.2 Driver Support:** Compatibility with Real COM driver for Windows and Real TTY driver for Linux.

**11.1.5.3 Baud Rate Support:** Support for various baud rates ranging from 300 bps to 230400 bps.

#### **11.1.6 Language**

**11.1.6.1 Language Support:** Web-based GUI to be available in English.

### **11.2 Centralized Management Software**

The Bidder must provide a Data Center Centralized Management Software (CMS). The CMS must serve as a comprehensive solution for



managing our all IT infrastructure within data center both locally and remotely through a unified portal. The ideal submission should demonstrate the ability of the software to manage at port level Servers, network switches, KVM switches, serial console servers, PDUs, and other third-party devices effectively. Management will include configuring, monitoring, operating and turning on / off of all devices remotely from anywhere in the world and locally from NOC. The purposed CMS must deliver the functionality outlined in this document beneath.

Features: The proposed CMS must include the following capabilities:

**11.2.1 Asset Management**

**11.2.1.1** Ability to view specifications, appearance, and location of all IT assets.

**11.2.1.2** Options to tag and export asset details for verification.

**11.2.2 Visualized Floor Map**

**11.2.2.1** Provide configurable 2D and 3D layouts of server rooms, showing the configuration of server racks and real-time status of devices for effective capacity management.

**11.2.3 Environment and Power Monitoring**

**11.2.3.1** Monitor environmental factors (e.g., temperature, humidity) in real-time, with alerts for threshold breaches.

**11.2.3.2** Display power status across connected PDUs.

**11.2.4 Real-Time Notifications**

**11.2.4.1** Ensures 24/7 availability of critical alerts when monitoring data exceed user-configured thresholds.

**11.2.5 Trend Charts and Auditing**

**11.2.5.1** Analytics features for monitoring and optimizing data center efficiency. Users can gain insights, analyze findings, and take strategic actions based on historical data.

**11.2.6 Single Sign-On (SSO) Integration**

**11.2.6.1** Centralized Consolidated management to manage All Server room equipment and other third-party devices.

**11.2.7 Intuitive User Interface**

**11.2.7.1** Intuitive HTML5-based interface with user-friendly navigation.

**11.2.8 At-a-Glance Dashboard Portal Overview**

**11.2.8.1** At-a-glance view of device status, events, task results, active users, and licensed nodes usage.



**11.2.9 Remote Access Capability**

**11.2.9.1** Support for IP tools including RDP, VNC, SSH, and Telnet.

**11.2.9.2** Compatibility with virtual environments such as VMware and Citrix.

**11.2.10 Authentication Protocols**

**11.2.10.1** Support for LDAP, AD, Kerberos, RADIUS, and TACACS+ for centralized security.

**11.2.11 Security Features**

**11.2.11.1** Military-grade encryption (AES 256-bit), IP/MAC address access control, TLS v1.3 encryptions, and a strong user password policy.

**11.2.12 Logging and Event Notification**

**11.2.12.1** Comprehensive consolidation of logs from various devices and notification support via multiple channels (email, SNMP traps, Syslog).

**11.2.13 Task Scheduling and Management**

**11.2.13.1** Functionality for backing up CMS configuration, exporting logs, and managing PDUs.

**11.2.14 Panel Array Mode**

**11.2.14.1** Support for simultaneous viewing of multiple server outputs in a unified interface.

**11.2.15 Redundancy and Availability**

**11.2.15.1** Primary-secondary architecture for service redundancy.

**11.2.16 Administrative Utilities**

**11.2.16.1** Tools for quick access to devices, online chat support, and password recovery mechanisms.

**11.2.17 Mobile One Time Password (MOTP) Authentication**

**11.2.17.1** Enhanced security via SMS-based authentication methods.

**11.3 Data Center Racks Intelligent Locking System**

An IoT Intelligent Locking System for our data center racks is a system that will address authority management and data asset security challenges by providing reliable and flexible access control solutions. The proposed intelligent lock system should also enable the remote monitoring of temperature and humidity conditions within the cabinets. The bidders are



expected to identify an optimal IoT locking solution that integrates with our existing data center infrastructure. Vendors should ensure that their proposals include all specified features and capabilities.

#### System Requirements

The IoT Intelligent Locking System must include the following features:

##### **11.3.1** Diversified Access Control

**11.3.1.1** Offer multiple access methods, including:

- Mechanical key
- Password
- Card
- Fingerprint
- Bluetooth
- Remote management platform
- Mobile APP

##### **11.3.2** Remote Monitoring

**11.3.2.1** Provide the ability to remotely collect and monitor temperature and humidity within each cabinet.

##### **11.3.3** Operational Versatility

**11.3.3.1** The system should function as a stand-alone unit or connect to a carrier's network for integrated management.

#### Technical Specifications

The proposed locking system should encompass the following specifications:

##### **11.3.4** Cabinet Intelligent Locks

**11.3.4.1** Ability to implement functions such as:

- User authority management
- Lock operation record query
- Intelligent management of lock tasks

##### **11.3.5** Modular Design

**11.3.5.1** The locking mechanism should feature a modular design, incorporating:

- Password button
- Card readers
- Bluetooth communication modules
- Fingerprint identification modules



- RS485 communication modules

**11.3.6** High Reliability and Stability

- 11.3.6.1** Driven by a high-reliability motor with a durable hardware design that ensures product stability and reliability.

**11.3.7** Compatibility

- 11.3.7.1** Versatile enough to be used with multiple cabinet brands.

**11.3.8** Communication Capabilities

- 11.3.8.1** Capability to connect to various intelligent PDUs or control units for remote communication and control.

**11.3.9** User-Friendly Design

- 11.3.9.1** Elegant and simple appearance; easy to install and maintain.

**Monitor Center Features**

The locking system must include a comprehensive monitoring center with the following functionalities:

**11.3.10** Equipment Information Overview

- 11.3.10.1** Overview of equipment status and lock statuses displayed via color coding.

**11.3.11** Real-Time Alerts

- 11.3.11.1** Immediate alerts for lock status changes and unauthorized access attempts.

**11.3.12** Search and Query Functions

- 11.3.12.1** Robust search query capabilities to quickly locate specific locks.

**Equipment Management Features**

**11.3.13** Lock Area Management

- 11.3.13.1** The capability to manage and configure lock areas.

**11.3.14** Control Unit Management

- 11.3.14.1** Ability to manage locks and associated control units.

**User Management Features**

**11.3.15** User Authority Management

- 11.3.15.1** Administration of user permissions and access control at multiple levels.

**11.3.16** Department Management

- 11.3.16.1** Capability to manage departments and user groups.

**11.3.17** Task Dispatching



**11.3.17.1** Functionality to dispatch tasks related to lock management.

Records Query Features

**11.3.18** Operation and Alarm Record Query

**11.3.18.1** Ability to query and retrieve operational and alarm records efficiently.

Data Analysis Features

**11.3.19** Unlocking Data Analysis

**11.3.19.1** Analyze data related to unlocking activities.

**11.3.20** Environmental Data Analysis

**11.3.20.1** Analyze temperature and humidity data and information from other sensors.

## **12 ADDRESSABLE HIGHLY SENSITIVE SMOKE DETECTION & FIRE SUPPRESSION SYSTEM FOR SERVER, ELECTRICAL, UPS AND MMR ROOM**

Bidders must be certified for the supply and installation and commissioning of an Addressable Highly Sensitive Smoke Detection and Extinguishing System. This system should comply with relevant standards and meet specific technical requirements outlined below.

The project involves the provision of single loop compact fire detection and alarm control panel and associated extinguishing systems, specifically designed to ensure maximum safety and performance in fire detection and extinguishing operations.

### **INTRODUCTION**

Vendors to submit proposals **single manufacturer solution** MAF & Principal Partnership Certificate will be required for qualification. The solution must be EU, US or JPY origin only. For the design, supply, installation, and commissioning of a **Fire Suppression & Detection System** for our complete Data Center Server, electrical rooms, and UPS/Meet-Me rooms. This system must comply with international standards and integrate seamlessly with existing infrastructure.

### **12.1 Fire Suppression Agent**



Clean, Green gas Environmental Friendly Fire Suppression Agent (**Novec 1230**)

## **12.2 Scope of Work**

The vendor shall provide a **complete turnkey solution** including **Clean Agent Fire Suppression (Novec 1230)**. **Scope** includes Installation in Server Room, Electrical Room, and UPS/Meet-Me Room (1 job each).

## **SYSTEM REQUIREMENTS**

### **12.3 Control Panel Specifications**

**12.3.1 Loop Compact Detection and Alarm Control Panel:** Must comply with EN 54-2 and EN 54-4.

**12.3.2 Event Log Memory:** Capacity to store up to 20,000 events.

**12.3.3 Operating Panel:** Must be available in English.

**12.3.4 Connection Interface:** Fire brigade control panels via EPI bus, Wireless service interface

**12.3.5 Monitoring of Automatic Fire Extinguishing Systems:** Capable of monitoring various extinguishing systems.

#### **12.3.6 Functional Considerations**

**12.3.6.1** Simple operating interface for emergencies.

**12.3.6.2** Maximum fail-safety through full redundancy.

**12.3.6.3** Multi zone extinguishing system combining extinguishing control panel and fire alarm control panel within one unit.

#### **12.3.7 Compatibility**

**12.3.7.1** The control panel must be suitable for the following extinguishing systems:

**12.3.7.2** High and low-pressure CO2 extinguisher systems (without risk to personnel)

**12.3.7.3** FM200 and Novec1230 extinguishing systems (without risk to personnel)

**12.3.7.4** Spray water and spray water mist extinguishing systems for NOC (optional)

**12.3.7.5** Pre-action sprinkler systems

**12.3.7.6** Standard sprinkler systems

**12.3.7.7** Chemical extinguishing systems

#### **12.3.8 Basic Control Panel Design**



**12.3.8.1 Construction:** Plastic case with operating panel capable of connecting a single loop with multi zones.

**12.3.8.2 Labeling:** All labeling must be positioned at the front of the control panel.

**12.3.9 Master Control Unit:** Should include:

**12.3.9.1** Integrated power supply unit.

**12.3.9.2** Interfaces for connecting peripherals.

**12.3.9.3** Mounting space for two 7.2 Ah rechargeable batteries.

**12.3.9.4** 100 Mbit-TX LAN interface for remote access to the control panel.

**12.3.10 Capacity:**

**12.3.10.1** Connection for max. 250 elements.

**12.3.10.2** Maximum cable length of 3500 m.

**12.3.11 Input/output Interfaces:**

**12.3.11.1** 2 × primary outputs for transmission and alarm systems.

**12.3.11.2** 2 × primary inputs.

**12.3.11.3** 1 × LAN (100 megabits-TX).

**12.3.11.4** 1 × EPI-Bus for fire brigade control panel connections.

**12.3.11.5** 1 × USB device service interface.

**12.3.11.6** Wireless service interface.

### **Solution Requirements**

**12.4** Compliance with **NFPA 2001** and **ISO 14520**.

**12.5** Must be UL/FM-approved (**FK-5-1-12**) systems.

**12.6** Integration with above provided addressable HSSD fire alarm panels.

**12.7 HSSD Aspirating Smoke Detection:**

**12.7.1** Early warning system with 2 aspirating pipes.

**12.8 Detectors & Devices:**

**12.8.1** Addressable optical smoke/heat detectors (12 units).

**12.8.2** Break-glass manual call stations (6 units).

**12.8.3** Electronic sounders (90–100 dB, 2 units).

**12.8.4** Input/output modules for BMS integration (3 units).

**12.9 Piping & Wiring:**

**12.9.1** 25mm conduit with shielded fire-rated cables (2C, 1.5 Sqmm).

**12.9.2** Piping, fittings, and nozzles for full coverage.

**12.10 2.3 Manual Fire Extinguishers**

**12.11 Type:** Halotron (HCFC-123), 4kg capacity (ABCD class fires). **Qty:** 2 units.





#### **Technical Requirements**

**12.12 Standards Compliance:** NFPA, ISO, UL/FM.

**12.13 Warranty:** Minimum 3 years for equipment and 1 year for labor.

**12.14** supplier will provide complete product manuals, documentation and training.

### **13 HARNESSING OF SERVER AND COMMUNICATION RACKS**

Proper organization and management of server racks are crucial for optimal performance, safety, and maintenance. Bidders will be required to harness all the racks within server room as per industry standards using all necessary harnessing material like

#### **13.1 Harnessing Materials**

Bidders must utilize the following materials to ensure proper harnessing of the server racks:

**13.1.1** Cable Managers: To organize and secure cables, preventing tangling and ensuring easy access by using 1U, 2U or double sided High Density Cable Managers as and where required to achieve smooth cable organize.

**13.1.2** Strain Reliever Metal Bars behind each Patch Panel: To support cables and prevent strain on connections.

**13.1.3** Velcro Tape: For bundling and securing cables neatly.

**13.1.4** Cage Nuts: To securely mount equipment within the racks.

**13.1.5** Blanking Panels of different sizes: To close any unused spaces in the racks, improving airflow and cooling efficiency.

**13.2** Rack Tagging: All racks its Power & ICT Cabling must be properly tagged using vinyl Adhesive tagging. This includes:

**13.2.1** Clear identification of each rack.

**13.2.2** Laser Inkjet self-lamination Tagging .

**13.2.3** Documentation of the tagging details as specified by The Institute of Business Management (IoBM).



## **I4 SERVICES AND TRAININGS**

Dismantling, Designing, Installation, Termination, Commissioning, Testing, of all above Systems / Solutions along with complete comprehensive training of end-user for all above provided solutions. Vendors have to make sure to incorporate any other parts / requirements that are missing or not mention in this document to complete all solution comprehensively.

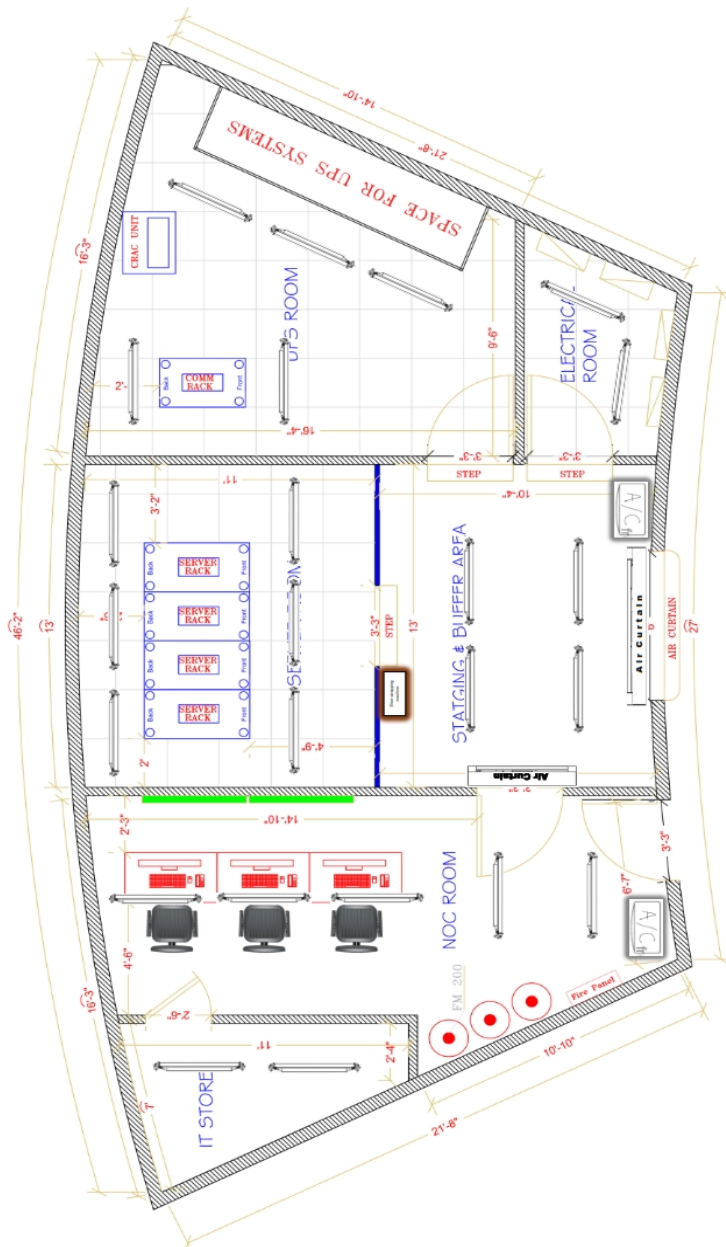
## **I5 WARRANTIES**

- 15.1** The quoted prices should include a warranty of three years for all installed equipment and services, including parts. Bidders must submit an undertaking stating that their bid price covers a three-year warranty for both parts and labor.
- 15.2** The bidders are required to submit a separate quote on their company letterhead detailing the cost of SLA with parts and labor after the expiration of the 3-year warranty period of Installed Equipment.



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## FLOOR PLAN ( ANNEXURE-I )





## BILL OF QUANTITIES ( ANNEXURE-2 )

S#	Model	Product Description	Item Unit	QTY
		Providing of following items including all equipment / material, tools, labour & accessories required for completion of work as per client specifications, details & drawings. Complete in all respects. Please note that this bill of quantities are only for reference as minimum requirement, vendors are instructed to follow the complete details and specifications along with annexure 1, 2 and 3 to drive their proposal.		
A	SECTION FOR CIVIL WORK			
1	Services	Permanent closing of all Glass windows from inside Data Centre with fire rated Cement board partition complete in all civil aspects.( Survey Required )	Job	1
2	Services	Dismantling and properly removing of all false ceiling, glass and block masonry wall inside proposed Data center area and Properly disposing it outside of IOBM premises. ( Survey required )	Job	1
3	Services	Construction of fire rated two side Cement board wall partitions as per attached drawings for NOC, Store, Electrical, MMR and UPS rooms complete in all civil aspects. ( Survey required )	Job	1
4	Services	Construction of server room front wall with 12mm full height tempered glass partition as per attached drawings complete in all civil aspects. ( Survey required )	Job	1
5	Services	Complete Data Centre paint work as per attached drawings with Fire retardant material as per standard complete in all aspects. ( Survey required )	Job	1
6	Services	Data Centre Main entrance Fire Rated Steel Metal double leaf door with 40mm thick door leaf Fire Rating for minimum 60 minutes as per International Fire Standards UL-10C and NFPA-252. Heavy Duty Reinforcement Clips Factory Applied Anti-Rust Primer and Color. ( Survey required )	Pcs	1
7	Services	Fire Rated Steel Metal door as per attached drawings for Electrical, UPS & MMR, NOC rooms with 40mm thick door leaves Fire Rating of minimum 60 minutes construction as per International Fire Standards UL-10C and NFPA-252. Heavy Duty Reinforcement Clips Factory Applied Anti-Rust Primer and Color. ( Survey required )	Pcs	4
Total of Section A				
B	SECTION FOR MISCELLANEOUS SERVICES			
1	Services	Shifting of Comfort cooling units from existing location to new location in the electrical and NOC rooms as per attached drawings.	Job	3
2	Services	Harnessing of all Electrical wiring as per new Data Centre drawings and removing of all unnecessary electrical and other wires completely from data center.	Job	1
Total of Section B				



<b>C</b>	<b>SECTION FOR CABLE RACEWAYS AND LADDERS</b>			
1	Services	360x100 mm size Fire Retardant low smoke zero halogen PVC Fiber runner with factory Prefabricated joints, droppings, covers, end-caps and other accessories for Data Cable as per attached drawings. <b>Yellow in color.</b>	Job	1
2	Services	200x100 mm Perforated Powder Coated Electrical tray Siemens Grey in color without cover under the raised floor with Prefabricated droppings, joint, end-caps and other accessories design as per attached drawings. Any tray above raised floor will be with cover.	Job	1
<b>Total of Section C</b>				
<b>D</b>	<b>SECTION FOR CCTV &amp; SECURITY MONITORING AND CONTROLLING SOLUTION</b>			
1		CCTV Solution for all Rooms of <b>complete Data Centre</b> as per attached drawings.	Job	1
2		Three in one access controller: swipe card, password, fingerprint complete with all fitting materials including magnetic door locks and wiring.	PCS	5
3		Four in one Access Controller: Swipe card, password, Fingerprint and Facial recognition complete with all fitting materials including magnetic door locks and wiring.	PCS	1
4		Centralize Access controller and CCTV management and monitoring software.	PCS	1
<b>Total of Section D</b>				
<b>E</b>	<b>SECTION FOR ANTI STATIC FLOORING</b>			
1		Anti-static Vinyl flooring complete with all installation and fixing accessories as per attached drawings for Staging & buffer area.	Job	1
2		Anti-static Raised flooring complete with all installation and fixing accessories as per attached drawings for Main Server, Electrical, UPS & MMR rooms.	Job	1
<b>Total of Section E</b>				
<b>F</b>	<b>SECTION FOR AIR CONDITIONING SYSTEM</b>			



1		<b>8.2KW or Higher Precision Air conditioning system for UPS &amp; MMR room.</b> Complete in all aspects including all type of mounting accessories, water tray, proper drainage system.	Job	1
2		<b>2-ton Floor standing comfort Inverter Air conditioning system for NOC AND STAGING rooms.</b> Complete in all aspects including all type of mounting accessories, water tray, copper piping, electrical wiring, proper water drainage system..	Job	1
3		<b>2 ton Wall mount comfort Inverter Air conditioning system</b> with acrylic wall mount water tray for Server and UPS & MMR room. Complete in all aspects including all type of mounting accessories, water tray, copper piping, electrical wiring, proper water drainage system.	Job	2
<b>Total of Section F</b>				
G	<b>SECTION FOR GROUNDING &amp; BONDING SYSTEM</b>			
1		Installing & Providing of following <b>High Conductivity Active Green Earth Pit</b> at ground level closest to the Data Center outside wall one each for ICT, Raw Power, UPS Power respectively including all material, labor, tools, transportation, accessories etc. Complete in all respects. Item includes clips, tees, lugs, exothermic cad welding as and where required.	Job	3
2		<b>Imported Main Grounding Bus Bar</b> , 200 mm x 75 mm x 6 mm electroplated Copper bar on wall insulators, as shown in drawings. Bar shall be provided with holes suitable for installation of required number of earths leads and continuity conductors as shown in the drawings.	PCS	3
3		Supply of OEM Ground Bus strip	PCS	1
4		Supply of OEM Bounding Kit	PCS	1
5		<b>10 Sqmm</b> single core PVC insulated, green colour <b>copper earthing conductors</b> for equipment grounding / potential equalization of all metallic structures, equipment's etc. Complete with all accessories. Including lux sleeves and conduits .	Job	1
6		<b>6 Sqmm</b> single core PVC insulated, green colour <b>copper earthing conductors</b> for equipment grounding / potential equalization of all metallic structures, equipment's etc. Complete with all accessories. Including lux and sleeves.	Job	1
<b>Total of Section G</b>				
H	<b>SECTION FOR DATA CENTER ELECTRICAL AND ALLIED WORKS ( Approved Brand for all electrical wiring PAKISTAN CABLES )</b>			
		<b>WIRING / WIRING ACCESSORIES</b>		



1		Circuit wiring from MDB to switch boards using 3 x 2.5 sqmm wires including any wiring between switch board to switch board in PVC conduit. Complete with all conduit accessories like junction boxes, bends, tees etc.	Job	6
2		Circuit wiring for light point from switch board to first light point using 3 x 1.5 sqmm wires in PVC conduit above false ceiling / under floor / concealed in wall. Complete with all conduit accessories like junction boxes, bends, tees etc.	Job	9
3		Circuit wiring Same as above but wiring from light point to light point.	Job	15
4		Circuit wiring from MDB to Emergency Lights with 3 x 1.5 sqmm wires in PVC conduit above false ceiling / concealed in wall. Complete with all conduit accessories like junction boxes, bends, tees etc.	Job	3
5		Circuit wiring from first emergency light to emergency / exit luminaries with 3 x 2.5 sqmm wires Cables in 25 mm dia PVC conduit including all accessories.	Job	5
6		<b>SMALL WIRING FOR UTILITY POWER SOCKETS</b> Circuit wiring for 5/15 A/3-pin Switch Socket units using 3 x 1.5 Sqmm size of wires in PVC Conduit. Complete with all accessories as shown in the drawings.	Job	20
7		<b>POWER WIRING FOR DOOR ACCESS SYSTEM</b> Wiring from UDB to power supply units for Door Access Controllers using 3 x 1.5 sqmm wires in appropriate size of PVC conduit as per requirements. Complete with all accessories as shown in the drawings.	Job	6
8		<b>POWER WIRING FOR SHOE WARPING MACHINE</b> Wiring from UDB to power supply units for Shoe warping machine using 3 x 1.5 sqmm wires in appropriate size of PVC conduit as per requirements. Complete with all accessories as shown in the drawings.	Job	1
9		<b>POWER WIRING FOR WI-FI POINTS IN DATA CENTER</b> Wiring from UDB to power supply units for Wi-Fi Devices using 3 x 1.5 sqmm wires in appropriate size of PVC conduit as per requirements. Complete with all accessories as shown in the drawings.	Job	2
10		<b>POWER WIRING FOR FIRE ALARM / SUPPRESSION SYSTEM</b> from UDB to power supply units for Fire Alarm & Suppression System using 3 x 1.5 sqmm wires in appropriate size of PVC conduit as per requirements. Complete with all accessories as shown in the drawings.	Job	1
11		<b>POWER WIRING FOR SERVER ROOM</b> of 4C, 16 Sqmm PVC/PVC + ECC, 1x6 Sqmm Flexible Cable From MDB to 64A, 5-pin Industrial Sockets <b>FOR SMART 4 RACKS CONTAINMENT UNIT.</b>	Job	1
12		<b>POWER WIRING FOR COMM RACK</b> of 3C, 4 Sqmm PVC/PVC Flexible Cable From UDB to 32A, 3-pin Industrial Sockets <b>FOR COMM RACK IN MMR &amp; UPS ROOM .</b>	Job	2
13		<b>POWER WIRING FOR MMR &amp; UPS ROOM</b> of 4C, 10 Sqmm PVC/PVC + ECC, 1x6 Sqmm Flexible Cable From MDB to 64A, 5-pin Industrial Sockets <b>FOR EXISTING UPS UNITS ROOM.</b>	Job	2
14		<b>POWER WIRING FOR MMR &amp; UPS ROOM</b> of 4C, 10 Sqmm PVC/PVC + ECC, 1x6 Sqmm Flexible Cable From UDB to 64A, 5-pin Industrial Sockets <b>FOR EXISTING UPS UNITS ROOM.</b>	Job	2
15		<b>POWER WIRING FOR STAGING/BUFFER AREA</b> 3C, 6 Sqmm PVC/PVC Flexible Cable From UDB-N-A/B to 32A, 3-pin Industrial Sockets <b>ROOM .</b>	Job	2
16		<b>NETWORK WIRING FOR DATA, CAMERAS, WIFI AND VOICE NODES</b> with CAT6 UTP copper cable in appropriate size of PVC conduit as per requirements. Complete with all accessories as shown in the drawings. Approve Brand ( Corning , Commscope )	Job	26



17		<b>POWER WIRING FOR PRECISION AC UNITS</b> 4C, 6 Sqmm PVC/PVC + ECC, 1x4 Sqmm Flexible Cable From MDB to Precision Indoor Units <b>IN MMR &amp; UPS ROOM</b> .	Job	1
18		<b>POWER WIRING FOR AC UNIT</b> in STAGING room with 3C, 4 Sqmm PVC/PVC Flexible Cable From MDB to AC UNIT .	Job	1
19		<b>POWER WIRING FOR AC UNIT</b> in NOC room with 3C, 4 Sqmm PVC/PVC Flexible Cable From MDB to AC UNIT.	Job	1
20		<b>POWER WIRING FOR WALL MOUNT AC UNIT</b> 3C, 4 Sqmm PVC/PVC Flexible Cable From MDB to WALL MOUNT SPLIT AC UNITS in <b>SERVER and MMR &amp; UPS ROOM</b>	Job	2
21		<b>POWER CABLE FROM AC INDOOR UNITS TO AC OUTER UNITS</b> 3C, 2.5 Sqmm PVC/PVC Flexible Cable	Job	5
22		<b>POWER WIRING FOR AIR CURTAINS</b> in Staging area 3C, 2.5 Sqmm PVC/PVC Flexible Cable From MDB to Air Curtains.	Job	2
23		<b>POWER WIRING FOR SHOE warping machine</b> in Staging area 3C, 2.5 Sqmm PVC/PVC Flexible Cable From MDB to Air Curtains.	Job	2
24		<b>LIGHT CONTROLLED SWITCHES</b> Single Gang Faceplate with 1No. 10A Switches and <b>MOTION DETECTION</b> as per BS Standards including 16 SWG PVC Powder Coated back boxes, flush with wall as shown in drawings and details.	PCS	3
25		<b>LIGHT CONTROLLED SWITCHES</b> Two Gang Faceplate with 2No. 10A Switches and <b>MOTION DETECTION</b> as per BS Standards including 16 SWG PVC Powder Coated back boxes, flush with wall as shown in drawings and details.	PCS	3
26		<b>UTILITY POWER SOCKET</b> 5A, Multi type 3-pin switch socket unit	PCS	12
27		<b>UTILITY POWER SOCKET</b> 10A, Multi type 3-pin switch socket unit	PCS	8
28		<b>INDUSTRIAL SOCKETS FOR COMM RACK IN MMR &amp; UPS ROOM</b> CEE-17, 16A, 3-Pin Angled Industrial Sockets with male type connecting plugs (IP-67)	PCS	2
29		<b>INDUSTRIAL SOCKETS FOR UPS INPUT / OUTPUT IN MMR &amp; UPS ROOM</b> CEE-17, 63A, 5-Pin Angled Industrial Sockets with male type connecting plugs (IP-67)	PCS	4
30		<b>INDUSTRIAL SOCKETS FOR SMART 4 RACKS CONTAINMENT UNIT IN SERVER ROOM</b> CEE-17, 63A, 5-Pin Angled Industrial Sockets with male type connecting plugs (IP-67)	PCS	1
31		<b>ATS PDUS (POWER DISTRIBUTION UNITS) FOR COMMUNICATION RACKS</b> 32 A, 2 In 8 Out IEC 13 Rack 19U Rack Mountable Metered <b>ATS</b> Power Distribution Unit (PDU)	PCS	1
32		<b>HANGING RECESSED CEILING LED LIGHT FIXTURES</b> having 2 x 18 W LED lamps Louvers as approved by the client including all accessories like power adaptors, electronic ballast, lamps, mountings kit etc. Complete in all respects.	PCS	24
33		<b>EMERGENCY LIGHT FIXTURES</b> Slim profile Self Contained Wall Mounted self-Maintained type Emergency Light Fixture having high intensity white LED strip no less than 18W and rechargeable maintenance free battery for min 1 hours back up.	PCS	8





34		Providing of Main Distribution panel factory tested in accordance with the site layout plans and requirements. The short circuit ratings shall comply with IEC-9747-2. All main incoming circuit breakers shall be draw out type with pad locks on external handles. Contractor has to submit the shop drawings prior to fabrication for client's approval.	PCS	1
35		Providing of UPS Distribution panel factory tested in accordance with the site layout plans and requirements. The short circuit ratings shall comply with IEC-9747-2. All main incoming circuit breakers shall be draw out type with pad locks on external handles. Contractor has to submit the shop drawings prior to fabrication for client's approval.	PCS	1
<b>Total of Section H</b>				
I	<b>SECTION FOR SMART 4 RACKS INROW CONTAINMENT SOLUTION ( SINGLE MANUFACTURER SOLUTION ) (MAF &amp; Principal Partnership Certificate required) (VERTIV, KOTOHIRA, APC, HUAWEI)</b>			
1	<b>System cabinet and accessories</b>			
1.1		1. Sheet metal bending and welding frame cabinet body × 1 2. top plate × 1 (top plate has 120 * 150mm brush holes * 2) 3.bottom plate × 1 (rear door has 80mm diameter inlet holes * 2+rubber cover) 4.column × 4 (42U front and rear must be screen printed in U positions) 5.crossbeam support × 1 (upper and lower) 700-725mm 6. 4 load-bearing corner cones/set (base diameter 60mm)	PCS	1
1.2		1. Front single layer glass 5mm+A-grade flame-retardant PVC colorless transparent board 1.2mm (black screen printing on the display part of PVC) door (reserved display screen + access control installation position) 2. Equipped with welding reinforcement ribs 3. Heaven and earth lock × 1 4. electric control lock × 1 5. Cable beam × 1 6. display screen cover plate × 1 7. Internal screen printing black on the overall glass display part	PCS	1
1.3		1. Welding reinforcement ribs (left and right doors) 2. Electric lock switch × 2 3.and sky and earth lock × 1	PCS	2
1.4		Side panel (upper and lower split)	PCS	2
1.5		Sealing strip applied to front and rear doors	PCS	1
1.6		The lighting component is equipped with a reserved connection line for the travel switch. with one installed at the front and one at the back	PCS	2
1.7		Three color lights. left and right sides	PCS	2
1.8		Insulation cotton (left and right 2000 * 200mm. upper and lower 600 * 200mm cold ventilation parts)+sheet metal protective plate	PCS	2
1.9		Vertical cable management board	PCS	1
1.10		4 pieces/set (non load bearing wheels). 4 load-bearing angle cones/set	PCS	1
1.11		2 pieces/set	PCS	1
1.12		1U quick installation blind plate	PCS	20
1.13		The load-bearing capacity of the bearing plate is 80Kg	PCS	2
1.14		L-shaped bracket (1 set of left and right guide rails)	PCS	2
1.15		Grounding Wire properly terminated with lugs.	PCS	1
1.16		EMS for centralized monitoring Smoke, Power, Door Sensor, Temp & Heat etc. to be integrated with Fire suppression system.	PCS	1
1.17		Mingwei Switching Power Supply 220Vac/12Vdc/30A	PCS	1



1.18		All screws require black and locking buckles	PCS	1
2	IT cabinets and accessories			
2.1		1. Sheet metal bending and welding frame cabinet body × 1 2. top plate × 1 (top plate has 120 * 150mm brush holes * 2) 3. bottom plate × 1 (rear door has 80mm diameter inlet holes * 2+rubber cover) 4. column × 4 (42U front and rear must be screen printed in U positions) 5. crossbeam support × 1 (upper and lower) 700-725mm 6. 4 load-bearing corner cones/set (base diameter 60mm)	PCS	3
2.2		1. Front single layer glass 5mm+A-grade flame-retardant PVC colorless transparent board 1.2mm (black screen printing on the display part of PVC) door (reserved display screen + access control installation position) 2. Equipped with welding reinforcement ribs 3. Heaven and earth lock × 1 4. electric control lock × 2 5. Cable beam × 1 6. display screen cover plate × 1 7. Internal screen printing black on the overall glass display part	PCS	3
2.3		1. Welding reinforcement ribs (left and right doors) 2. Electric lock switch × 2 3. and sky and earth lock × 1	PCS	6
2.4		Side panel (upper and lower split)	PCS	2
2.5		Sealing strip applied to front and rear doors	PCS	3
2.6		The lighting component is equipped with a reserved connection line for the travel switch. with one installed at the front and one at the back	PCS	6
2.7		Dual color lights, left and right sides	PCS	6
2.8		Insulation cotton (left and right 2000 * 200mm. upper and lower 600 * 200mm cold ventilation parts)+sheet metal protective plate	PCS	6
2.9		Vertical cable management board	PCS	3
2.10		4 pieces/set (non load bearing wheels), 4 load-bearing angle cones/set	PCS	3
2.11		2 pieces/set	PCS	3
2.12		1U quick installation blanking Panel.	PCS	30
2.13		The load-bearing capacity of the bearing plate is 80Kg	PCS	6
2.14		L-shaped bracket (1 set of left and right guide rails)	PCS	6
2.15		Grounding Wire properly terminated with lugs.	PCS	3
2.16		EMS for centralized monitoring Smoke, Power, Door Sensor, Temp & Heat etc. to be integrated with Fire suppression system.	PCS	3
2.17		Mingwei Switching Power Supply 220Vac/12Vdc/30A	PCS	3
2.18		All screws require black and locking buckles	PCS	3
3	Power supply and distribution system			
3.1		15KVA online dual conversion UPS power supply. Fully digital DSP control, LCD display, output power factor 0.9192Vdc, rack structure WIH Parallel Kit .	PCS	2
3.2		SNMP monitoring card, used in conjunction with the aforementioned UPS	PCS	2
3.3		Rack mounted battery pack with (20 pcs*12v,9AH) *2 Lead Acid Sealed batteries built-in backup time 7.8mins with 13.5kw load.	PCS	2
3.4		1. Three single distribution (Schneider breakers): total input: 125A/3P lightning arrester: 40KA/4P;	PCS	1



		Lightning protection switch: 63A/4P		
		UPS Maintenance bypass: 100A/2P		
		USPS Input: 63A/3P x 2		
		UPS Output: 100A/2P x 2		
		Air conditioning switch: 32A/3P x 2		
		PDU1-4 Switch: 32A/1P x 4 DC		
		Output: 10A/1P		
		2. Intelligent single-phase input/output distribution function for rack mounted installation:		
		1) 8-way detection. customizable and expandable		
		2) Detection of input switch voltage. current. active power and power factor. load rate. harmonic		
		3) Detection of output switch voltage. current. power. load rate. electrical energy and power factor		
		4) Detection of input and output switch status		
		5) Lightning protection alarm detection		
		6) RS485 * 4. SNMP (optional). dry contact * 3 (such as temperature and humidity. smoke detection. access control)		
		7) with buzzer and LED indicator light		
		8) DC power supply 12V/8.5A. 2-way output		
4	Refrigeration management system			
4.1		12.8kW precision air conditioner, row level installation, single cooling type, including outdoor unit, The variable frequency compression mechanism dynamically adjusts the cooling capacity to avoid condensation, automatically adjusts the air volume of the internal and external EC fans, and has a built-in refrigerant pressure and temperature sensor and an electronic expansion valve, input power specification: 380V/3P/60Hz (S-012RAH) Itanium	PCS	2
5	Dynamic environmental monitoring system			
5.1		Integrated monitoring host with built in minimum 10 inch display, EMS Device to Monitor UPS power supply, distribution input/output voltage/current/power, air conditioning. temperature and humidity, smoke detection, water immersion, access control, 10 inch color touch screen.	PCS	1
5.2		SNMP reporting port for integration with DCIM/BMS	PCS	1
5.3		Rackmount 16 Port Network Switch 10/100/1000mbps .	PCS	1
5.4		RS485 output. cascade type, RJ45 wiring. magnet adsorption installation, 12V power supply	PCS	4
5.5		Photoelectric smoke detector Sensor.	PCS	4
5.6		Temperature and humidity sensor, RS-485 type		
5.7		Regional leakage detection induction line, 2.5m	PCS	2
5.8		Access controller management of users, logs and access authorization, 2 door type.	PCS	1
5.9		DC12V/30A power module, used to power sensor equipment	PCS	1
6	Security system (access control/video/fire protection)			
6.1	Access control	Three in one access control: swipe card, password, fingerprint	PCS	4



6.2	Fire extinguishing module	Rackmount Fire plug frame to Flood Completed Rack, NOVEC 1230, Integrated with EMS Device. Device should contain Pressure Gauge Meter , Solenoid & manual Value with Heat Detection Pipe & Nozzle .	JOB	1
<b>Total of Section I</b>				
J	<b>SECTION FOR DCIMS</b>			
1		Data Centre Centralized Management SW.1 PRIMARY/64 NODES Single sign-on to consolidate the management of KVM over IP switches, serial console servers, intelligent PDUs, and third party devices such as embedded service processors, and physical and virtual servers.	PCS	1
2		16-Port Serial Console Server with Dual Power/LAN should features Cisco pin-outs and auto-sensing DTE/DCE function, providing a direct connection to Cisco network switches (and other compatible devices) without rollover cables for even more time-saving IT infrastructure deployment. In addition, the models support online detection of connected serial devices (including terminal blocks) for device status monitoring. An e-mail notification will be sent to the administrator when connected devices are offline. With dual Ethernet ports and power supplies, should supports power redundancy as well as failover, or dual IP addresses access, ensuring 24/7 availability of access to serial devices. A DC power option must also be available for each of this model for more flexible implementation.	Pcs	1
5		Comm. Rack Smart electronic Door Lock with 3 in one access controller swipe card, fingerprint and keypad	Pcs	1
<b>Total of Section J</b>				
K	<b>SECTION FOR FIRE SUPPRESSION &amp; DETECTION SYSTEM FOR SERVER AND ELECTRICAL ROOM ( Brands of EU, US or JPY ORIGIN )</b>			
	<b>Novec1230</b>	(FK-5-1-12) commonly known as Novec1230. Specification compliance with NFPA2001 (Standard on clean agent fire extinguishing systems) and ISO14520 (Gaseous fire extinguishing systems). UL/FM approved. For Server and UPS room.		
1		<u>Server Room</u>	Job	1
2		<u>Electrical Room</u>	Job	1
3		<u>UPS &amp; Meet-Me</u>	Job	1
		AUTOMATIC ADDRESSABLE FIRE ALARM & DETECTION SYSTEM Providing of following item Including Painted MS Conduit for complete addressable fire alarm system including smoke detectors, call stations, sounders etc. complete in all respects.		
4		<b>Multi Loop (Multi-Zone) Addressable Fire Alarm Controller</b> suitable to support minimum 159 devices per loop. The FACP shall be self-powered with built in 12V batteries for 24 Hrs. backup with charging unit. It can be programmed using Windows based software for peripheral devices like display unit, printers etc. The panel shall be capable to interface with the door access control system, BMS systems.	Pcs	1
5		<b>HSSD Addressable Panel</b> as active linear <b>Highly sensitive smoke aspirating system</b> with 2 aspirating pipes, piping and wiring complete in all aspect for early detection of fire in server room before it happens. Integrated with Main Fire Panel .	Pcs	1



6		Addressable Optical Smoke / Heat Detectors including base having built in short circuit isolator, incorporating a pulsing LED located in labyrinth with in the housing of the detector. Sensing of the detector shall be adjustable via software between 0-90 seconds.	Pcs	12
7		Addressable Break Glass Type Manual Call Station with protection cover having a built in short circuit isolator & built in microprocessor to ensure a response time of max. 1 sec. It also incorporates an indication LED flashed after pressing the button to acknowledge the activation & key operation facility for testing purposes.	Pcs	6
8		Manual Triggling Relay Device for each ZONE to Release NOVEC GAS.	Pcs	6
9		Addressable type indoor electronic sounder minimum sound output 90-100 dBs at 1 meter with frequencies for variety of sounds as required. Sounder shall have built in short circuit isolator, configured via software.	Pcs	2
10		Addressable input / output Module to be installed and configured with Fire panel to HSDD or BMS	PCS	3
11		Manual Fire extinguishers with clean agent for ABCD Classes of Fire 4kg, Type: Halotron (HCFC-123)	PCS	2
12		Required all Piping and electrical work for all rooms complete as per addressable fire alarm system using 2C, 1.5 Sqmm shielded fire rated cables in 25mm dia conduit from FACP. Including all type of required piping with all fittings, nozzles etc.	Job	1
<b>Total of Section K</b>				
L	<b>SECTION FOR AUTOMATIC DISPOSABLE HYGIENIC SHOE COVER MACHINE FOR DATA CENTER</b>			
1		Automatic disposable hygienic shoe cover machine with 2000 pairs of shoe covers that can fit on all type and size of shoes. Complete with all wiring and fittings.	Pcs	2
<b>Total of Section L</b>				
M	<b>Services, Training, Enablement &amp; Warranty</b>			
1		Dismantling, Designing, Supply, Installation, Termination, Commissioning, Testing, of all above Systems / Solutions along with complete comprehensive training of end-user for all above provided solutions. Vendors have to make sure to incorporate any other parts / requirements that are missing or not mention in this document to complete all solution comprehensively.	Job	1
2		Provide the soft and hard copies of final network and power drawings/layouts		
3		Complete Operational and Maintenance Training for installed Systems and Facilities on IoBM Premises.		
4		All provided equipment must be covered under warranty for 2 years after date of issuance of Acceptance Certificate. OEM Based SLA for OEM part as mentioned in Bill of Quantity (BOQ) above and of all other items supplier to provide Warranty for non-OEM products for 1st year (Warranty as per manufacture's standard condition including parts)	Job	1



## LIST OF APPROVED BRANDS (ANNEXURE-3)

S#	Product Description	Approved Brands
	<b>SECTION FOR CIVIL WORK</b>	
1	Data Centre Paint Material	ICI, BUXLY, NIPPON
2	Data Centre Fire Rated Steel Metal Door	DIAN, HITEK, ASICO OR EQUIVALENT
	<b>SECTION FOR CABLE RACEWAYS AND LADDERS</b>	
3	Fire Retarded Low Smoke Zero Halogen Pvc Fiber Runner	LEPIN NETWORK, PANDUIT OR EQUIVALENT.
4	Perforated Powder Coated Electrical Metal Tray	(EZZI ENGINEERING, HITEK, ALFAZAL ENGINEERING) OR EQUIVALENT .
	<b>SECTION FOR CCTV &amp; SECURITY MONITORING AND CONTROLLING SOLUTION</b>	
5	Cctv Monitoring System	HKVISON, DAHUA, ZTK, SUNEEL
6	Access Controller System	HKVISON, DAHUA, ZTK, SUNEEL
	<b>SECTION FOR ANTI STATIC FLOORING</b>	
7	Anti-Static Vinyl Flooring	MERO, TATEACCESS, HKLINE OR EQUIVALENT.
8	Anti-Static Raised Flooring	MERO, TATEACCESS, HKLINE OR EQUIVALENT.



	<b>SECTION FOR AIR CONDITIONING SYSTEM</b>	
9	Precision Air Conditioning System	VERTIV, KOTOHIRA, APC HUAWEI, SCHNEIDAR, HAIRF
10	Floor Standing Comfort Inverter Air Conditioning System	HAIER, ECOSTAR, DAWLANCE, GREE
11	Wall Mount Comfort Inverter Air Conditioning System	HAIER, ECOSTAR, DAWLANCE, GREE
	<b>SECTION FOR GROUNDING &amp; BONDING SYSTEM</b>	
12	Grounding & Bonding System	PANDUIT, CORNING, COMMSCOPE
13	Grounding Cables	PAKISTAN CABLES
	<b>SECTION FOR DATA CENTER ELECTRICAL AND ALLIED WORKS (Approved Brand for all electrical wiring PAKISTAN CABLES)</b>	
14	All Type of Electrical Cables	PAKISTAN CABLES
15	Network Wiring for Data, Cameras, Wifi And Voice Nodes	CORNING, COMMSCOPE
16	Light Controlled Switches with Motion Detection	ORANGE, MK, OPEL
17	Utility Power Socket	ORANGE, MK, OPEL
18	Industrial Sockets	HKLINE, MK, CLIPSAL
19	ATS/STS Power Distribution Units for Communication Racks	VERTIV, KOTOHIRA, APC SCHNEIDAR
20	Hanging Recessed Ceiling Led Light Fixtures	PHILIPS, FOXGLOW, SOGO, FACTOR
21	Emergency Light Fixtures	PHILIPS, FOXGLOW, SOGO, FACTOR
22	Power Distribution Panel Panels	EZZI ENGINEERING, ALFAZAL ENGINEERING or Equivalent
	<b>SECTION FOR SMART 4 RACKS CONTAINMENT SOLUTION (SINGLE MANUFACTURER SOLUTION)</b>	



23	Smart 4 Racks Containment Solution (Single Manufacturer Solution)	<a href="#">HUAWEI</a> , VERTIV, KOTOHIRA, APC,
	SECTION FOR DCIMS	
24	Data Centre Centralized Management	HUAWEI, ATEN, RARITAN, VERTIV
25	16-Port Serial Console Server	HUAWEI, ATEN, RARITAN, VERTIV
26	Comm Rack Smart Door Lock	EATON, VERTIV Or Equivalent
	SECTION FOR FIRE SUPPRESSION & DETECTION SYSTEM FOR SERVER AND ELECTRICAL ROOM ((EU ORIGIN))	
27	Fire Extinguishing Gas	NOVEC1230
28	Automatic Addressable Fire Alarm & Detection System	SCHRACK, HONEYWELL, DETNOV Or Equivalent
29	HSSD Highly Sensitive Smoke Aspirating Addressable System (same brand as point no. 28 above)	SCHRACK, HONEYWELL, DETNOV Or Equivalent
	SECTION FOR AUTOMATIC DISPOSABLE HYGIENIC SHOE COVER MACHINE FOR DATA CENTER	
30	Automatic Disposable Hygienic Shoe Cover Machine With 2000 Pairs of Shoe Covers That Can Fit on All Type and Size of Shoes. Complete with All Wiring and Fittings.	SOLEMATECO OR EQUIVALENT



## EVALUATION AND QUALIFICATION CRITERIA (ANNEXURE-4)

### I. Technical Evaluation

Technical Evaluation will be carried out based on Annexure 1, 2 and 3 by ensuring the compliance.

### II. Qualification

- The bidder will be declared technically qualified if Marks obtained of Evaluation Criteria  $\geq 70$ .
- The contract will be awarded to the financially lowest bidder. In case if lowest financial value is tied between two or more bidders, bid will be awarded to the bidder having highest score in technical evaluation.

### III. Qualification Criteria

The evaluation will be done on the basis of following parameters for eligibility of the Bidder:

Sr.	Description	Requirements	Allocated Marks
1	Compliance to Scope of Work of this RFP	100% Compliant - 20 Marks 90% Compliant - 10 Marks 80% Compliant - 5 Marks 70% Compliant - 0 Marks Less than 70% - not approved	20
2	Backup inventory in vendor warehouse.	Undertaking with Inventory List	5
3	Manufacturer Authorization Letter (MAL)	Tier1 Partner / Distributor = 10 Points. Tier 2 or Solution Partner = 5 Points.	10
4	Technical Support On-site Response Time.	Same Day within 8-10 Hours = 10 Points. Next Business Day = 5 Points.	10
5	Vendor should have successfully deployed / delivered more than 5 Projects of same or Higher Scale.	Completion Certificate Required with POC Details.	10
6	GST & NTN Registered firm with Minimum 20 Years of experience in relevant Field of Data Center Deployment / Distribution Should include Precision Cooling, Addressable Fire Detection and Suppression, HSSD & Power Solutions.	Completion Certificate Required with POC Details, Company GST, NTN, Establishment Documents.	20
7	Bidder should have employee with following certification UPTIME INSTITUTE ATS Certification, DCDE, BICSI Membership, NFPA Membership, Fluke (Certified professional should be Direct Employee of Bidder company) and documentary prove must be submitted with the bid along with CV & Undertaken of Employee.	ATS – 15 DCDE – 5 Others - 5	15
8	Minimum of Rs.250 Million Turnover of bidder company in Last fiscal Year.	Certified 3 Party Audit report is Required.	10



**Note:**

Minimum Technical Qualification Is (70 Marks)

The bids qualifying in mandatory qualifying requirement as mentioned above shall be eligible for the next stage of evaluation, wherein the technical committee shall evaluate the proposal.

- i. Verifiable documentary proof for all above requirements is a mandatory requirement, non-compliance will lead to disqualification.
- ii. Complete specifications with supporting document, brochure of the offered items. If specifications do not meet the tender requirements; offered material shall not be entertained.
- iii. The Refurbished, Grey smuggled products will be not accepted in any case
- iv. The Bid qualified technically shall be eligible for the opening of " Financial Proposal " which shall be opened jointly in presence of Procurement committee and Technical committee representatives who choose to attend the meeting.