

ANNEX A

FACILITY MANAGEMENT SERVICES REQUIREMENTS

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1. Introduction

Suppliers need to provide the data centre facility management services for the operation of the ITRC Systems.

2. Requirements

Suppliers are invited to offer Tender for data centre and other related services based on the following requirements:

2.1 Facility

- FM 200 Fire fighting system; Smoke detection; Water leakage detection
- Fully redundant power supply backup by UPS and diesel generators
- Temperature and humidity control in N+1 redundant configuration: Chilled water plant; Computer Room air-conditioning (CRAC) system
- WiFi Access
- Individual Power Meter

2.2 Environmental Specification

Power	UPS in N+1 parallel configuration with 1 hour full-loaded battery backup 1200A DC -48V rectifier system in N+1 configuration with 2 hours full-loaded battery backup 1500kVA generator set for 2 hours full-loaded unmanned continuous operation with fuel tank refill capacity Dedicated earthing system
Temperature and Humidity Control	Dedicated chilled water plant in N+1 configuration Down flow CRAC units using chilled water system with cooling capacity 700kW CRAC units with air conditioning system backup Each cabinet is maintained at an average of 25°C & 50% RH
Environmental Monitoring	Water leakage detection system BMS for real-time M&E equipment status monitoring
Fire Protection	FM 200 fire fighting system Smoke Detector System

Raised Floor	450mm raised floor system False ceiling system 2600mm headroom between raised floor and false ceiling
Security	CCTV Surveillance System at main exits throughout the whole Data Centre Access Control System Security Guard
Structural Cabling	Cat 6 cabling system

2.3 Standard Specification Cabinet

- 600mm x 970mm (42U) or above, individual lock, ventilation
- Standard 1.65kVA power configuration, max up to 3kVA
- At least two 13A 12-ways power bar with built-in power meter
- Individual fuse for each power strip
- One circuit breaker to each power strip
- At least 100 Mbps fast Ethernet Internet port for Internet connectivity
- Four RJ45 ports per rack
- Online web-based MRTG Report
- At least two fixed shelves per rack

2.4 Service Level

- Power Availability > 99.95%
- Environment: temperature $22^{\circ}\text{C} \pm 2^{\circ}\text{C}$, humidity $50\% \pm 10\%$
- Network Availability > 99.95%
- Packet Success Rate > 99%
- Mean-time-to-repair (MTTR) = 4 hours

2.5 Number of Racks

- 1 April 2023 to 31 March 2026: 4 racks, with an option to adopt 1 additional rack annually within contract period.

2.6 Power Consumption

- Minimum 7.5A (1.725kVA) power consumption per rack, maximum 13A power consumption per rack.

2.7 Number of IP Addresses

- Not less than 32 IP addresses per rack, sequential number is preferred

2.8 Remote-Hands Support includes the following:

- Less than 15 minutes response time
- Visual verification as well as to console into server(s) to assist remote troubleshooting efforts
- Swapping removable media (Tapes, Removable HDD, CDs, DVDs, etc.)
- Pushing button(s) or toggling switch(es) on hardware equipment
- Inventorying/Labeling equipment or taking digital photos

2.9 Daily Tape Rotation

- Not more than 10 tapes each day

3. Option to Extend Contract

ITRC intends to place the contract for 2 years with an option to extend for a further 1 year. The option to extend the contract will be based on the supplier achieving the requirements specified in Annex A.

Ultimately the decision to extend the contract, even if the supplier achieves the requirements identified in Annex A, remains with the ITRC.

4. Value Added Service (Optional)

4.1 Rent Free Period

- For all the racks at the start of the tenancy