



Ref No: ICTS/TIFR/RFQ/61/2018-19

Date: 19/12/2018

ENQUIRY

To,

Dear Sir,

Subject: Enquiry for the Supply, installation & commissioning of Data Center

Scope of Work: Supply, installation & commissioning of Data Center

Sealed tenders are invited under 2 cover system from reputed OEM (Original Equipment Manufacturer) / Registered and Licensed Vendors for Job Contract at International Centre for Theoretical Sciences, Survey No. 151, Shivakote, Hessarghatta, Bangalore - 560089 (India).

The Technical and Price Bids shall be submitted simultaneously in two cover (sealed) system. The proposals shall be evaluated in two stages: (1) Technical and (2) Price. Technical evaluation will be carried out and those vendors who qualify in the technical evaluation will be eligible for Price Bid opening. Thereafter Financial proposal shall be evaluated. The Commercially Lowest Bidder shall be the first preferred Vendor for the Award of Order.

Important Instruction: The bids shall be enclosed in an envelope and sealed duly marked "Enquiry for Supply, installation & commissioning of Data Center at ICTS Campus," Ref No. ICTS/TIFR/RFQ/61/2018-19; and addressed to "Administrative Officer" at the address given below. The bids are liable to be rejected if the sealed envelope is not addressed to "Administrative Officer" with Tender Ref No. and Item Description. Offers delivered in person shall be deposited in the Tender Box kept in the Office. If the bids are sent through courier or mail, it should reach by submission date and time and ICTS will not be responsible for any delay.

The tenders should be submitted in two sealed covers. This tender will be evaluated under 2 cover bid system as described above.

I. The First sealed cover - **COVER I** should be superscribed "Technical Bid" and should contain :

1. All pages of this enquiry duly sealed and signed.
2. Technical Specifications of the product quoted for
3. **MAF (Manufacturer's Authorization Form) Certificate**
4. Bidder must describe in detail the technical support they will be able to provide in Bangalore.
Only those companies will be considered who have engineers based in Bangalore who have been trained on the machines being quoted for, prior to the date of installation.

II. The Second sealed cover - **COVER II** superscribed 'Price Bid' should contain the Financial bid.

Tender Criteria:

1. **The bidder should submit the MAF (Manufacturer's Authorization Form) Certificate along with the quotation.** Bids without MAF Certificate will be disqualified.
2. Financial bids, if enclosed with the technical bids in Cover 1 will lead to automatic disqualification of the bid.



3. **All warranty and support must be serviced directly by the OEM.** ICTS requires that there be a SPOC from OEM who is responsible for all issues between ICTS and the OEM.
4. The bidder/OEM should have executed at least 2 projects using an architecture and technologies similar to those being proposed in their quotation against this tender. In addition, the following condition should also be satisfied.
 - At least one order of 80% of tender value or
 - At least two orders of 60% of tender value or
 - At least three orders of 40% of tender valuePurchase order copies of the same must be submitted with the technical bid. The OEM or partner should have successfully executed projects at premier Indian Defence organizations or premier Indian Academic and Research institutions like IISc, TIFR, IISER, IIT, JNCASR or institutions of equivalent stature.
5. Product offered should not have end-of-life (for sales and service) for next two years.
6. The OEM/Vendor should have at least one service Center in Bangalore. The OEM/Vendor should have service engineers in the relevant field of quoted item.
7. The bidder should submit the BIS certificate for the quoted hardware.
8. Detailed scope of work is mentioned in ANNEXURE 01

Terms & Conditions:

The center being public funded research institution is entitled for GST @ 5% vide notification No. 47/2017-Integrated Tax (Rate) and No.45/2017-Central Tax dated 14-11-2017. Necessary Certificate will be provided along with the order.

The bids/ quotation addressed to “**International Centre for Theoretical Sciences – TIFR**”. You are requested to superscribe our enquiry number and due date on the envelope.

All duties, taxes, surcharge and cess as currently applicable must be stated in your quotations, separately. Otherwise your quote is liable to be rejected.

- 1) **DUE DATE FOR SUBMISSION OF QUOTATION AGAINST THIS ENQUIRY IS 10/01/2019 till 15.00 Hours.**
- 2) QUOTATIONS RECEIVED AFTER THE DUE DATE SHALL BE REJECTED.
- 3) Vendors can quote in USD also. OEM should provide Warranty, Support & Service locally.
- 4) The Validity of your quotation should be for **60 days from the date.**
- 5) Your quotation should include 3-year warranty. 4th and 5th year additional warranty is optional but mandatory to quote.
- 6) Delivery to be made to ICTS-TIFR (at vendor’s own arrangement). Transit Insurance should be done up to International Centre for Theoretical Sciences-TIFR, Survey No. 151, Shivakote Village, Hesaraghatta Hobli, Bangalore North – 560089.
- 7) TDS on GST will be deducted at the prescribed rates as per notifications 50/2018 and 51/2018 – Central Tax, dated: 13 Sep 2018.
- 8) Delivery Period: 4 weeks from the date of acceptance of the purchase order and Installation within 4 weeks from delivery.
- 9) Liquidated damage: In case the item is not supplied within the agreed delivery schedule and after a grace period of 07 days, then liquidated damages will be imposed automatically and will be deducted from the bill of the vendor at the rate of 0.5% per week, subject to a maximum of 10% of the order value.





- 10) **Payment:** Within 15 days after delivery, acceptance & satisfactory installation.
- 11) Any dispute or differences that may arise between the parties shall be referred to the sole arbitration of the Centre Director or his nominees. The decision of the arbitrator shall be final and binding on the parties. The venue for arbitration shall be Bangalore. The provisions of the Arbitration and Conciliation Act, 1996 as amended from time to time shall apply. The Courts in Bangalore shall have exclusive jurisdiction to deal with any or all disputes between the parties.

For and on behalf of International Centre for Theoretical Sciences-TIFR

Authorized Signatory

Administrative Officer - 'C'
International Centre for Theoretical Sciences
Tata Institute of Fundamental Research
Survey No. 151, Shivakote,
Hesaraghatta Hobli, Bangalore - 560 089.





ANNEXURE 01 Detailed Scope of Work

1.0 INTRODUCTION

This section describes the design, supply, delivery, assembly, installation, testing, and commissioning requirements for Edge Data Center.

The Edge Data Center solution are to be installed at Proposed DR Center at ICTS Campus Bangalore. Edge DC units shall consist of 3 Racks of 800 Width x 42 U Height and 1400 Depth in mm, Two racks shall have Air-conditioning units, 3rd Network Rack and outdoor condenser. Automatic Fire Alarm cum Suppression unit, for safety of the equipment installed inside cabinet, Unit Controller, Basic PDU and Electrical Distribution panels. Required rack-space (in U) has been identified in appendices.

The Centre shall intimate the bidders the location the equipment is to be installed. The bidders are advised to visit sites (at their own expense), prior to the submission of proposal, and make survey and assessment as deemed necessary for proposal submission.

2.0 CABINET

Rack Quantity : 3 Nos, Each rack of dimension 800 Wide x 1400 Depth and 42 U height.

Cabinets shall be provided for mounting Centre's existing equipment from existing DC. Bidders are advised to assess Centre's existing equipment size, mounting, air-flow etc. and propose cabinet suitably to meet existing equipment requirements. The Contractor shall determine and propose for the Centre's approval, the type, size, weight and manner of installation for each location. The size and other details of the cabinets for this purpose shall be finalized during detailed engineering after survey.

2.1 Equipment Cabinet (Enclosure) Construction

1. Equipment cabinets shall be steel fabricated and finished on all surfaces. All metal and welds shall be thoroughly cleaned and sanded to obtain a smooth finish. All surfaces shall be treated for rust and primed to form a bond between metal and the finish coats of paint.
2. Equipment cabinets shall be designed free-standing but shall be mounted to the floor. Cabinets shall have secured fitting, lockable, full-length front and back doors for access to hardware and wiring. Front door should be made up of toughened glass with steel frame structure.
3. All doors and removable panels shall be fitted with long life rubber beading. All panels shall be fabricated from minimum 1.5mm thickness steel sheet. However, for racks with load carrying capacity of 1400 kg on enclosure frame, door panels and side panels may be fabricated from minimum 1.5mm thickness steel sheet and the top & bottom panels shall be fabricated from minimum 1.5mm thickness steel sheet.
4. 42U Rack, 800Wx1400Dx2000H, IP-54 Racks to ensure protection against ingress of dust and water.
5. Safe load carrying capacity of 1400 kg on enclosure frame, and 1000 kgs on 19 inch mounting angles
6. 19" ANGLES: Zinc Plated. Mounted on Installation bracket for stability and strength. 2 mm thick
7. Front glazed door having 4 mm thick toughened glass for safety
8. Basic Structure: Frame of sturdy frame section construction, consisting of 9 x folded rolled hollow frame section punched in 25mm DIN pitch pattern. All profile edges are radiused. The corners are stiffened with

welded MS die-cast, Copper coated, corner connectors, removable top & Bottom cover with Cable entry provision. Frames are bayable, scalable and modular. Safe Load carrying capacity: 1400 kg on enclosure frame, and 1000 kg. on 19" mounting angles.

9. Unique 3-Point Locking System with Ergoform handle & unique safety key for front & back door
10. Coded Lock reader with electromagnetic handle for each door.
11. Increased corrosion resistance using state of art paint technology (Surface Finish: Nano Coated, electro-dipcoat primed to 20 microns and powder coated with textured polyester RAL 7035/9005 to 80 to 120 microns.)
12. Comply to EIA 310, DIN 41494 and IEC 297 standards

3.0 AIR-CONDITIONING UNITS

Out of proposed 3 Racks, Cooling required only for 2 Racks and 3rd Rack being Network Rack with switches of minimum load, same shall derive air from the other 2 Racks, 3rd Rack do not require cooling unit.

Depending upon the thermal engineering of the enclosure (cabinet) and heat load generated from the equipment inside the cabinet, Contractor shall offer suitable cooling capacity of air conditioning system, working in conjunction, controlled by the single inbuilt Micro-processor based controller for desired operation. Heat Loads of equipment have been specified in appendices.

Both units shall be independent of each other. The units shall run one by one in pre settable time bound cyclic ON/OFF mode. Air flow shall be designed in such manner so that hot air and cold air separation may be ensured.

Problem/ fault in one of the unit shall not hamper the working of other unit and during such fault in any of the unit; the alternate unit shall take over and continue to operate till the faulty unit is operational again.

Both units shall never start at the same time. If the condition is such that both units shall start together then internal time delay shall be provided in starting of each unit to avoid surge.

In case of failure of Power Supply, rear doors of the cabinet shall open automatically for emergency ventilation.

The cooling system shall be zero U rack based type with horizontal uniform cold air distribution with (N + N) redundancy.

It shall be highly efficient, closed loop circuit, "front to back" cooling solution up to 7kW per cooling unit with ambient temperature range +10° C to +50° C .

The cold air distribution shall be lateral, uniform from 1U to 42U in front of the 19" equipment for efficient cooling.

There shall be no loss of vertical "U" space inside the 19" Rack while mounting the equipment.

3.1 Design considerations

The air-cooled self-contained AC system shall be designed as per following conditions:

- | | | |
|--|---|-----------------------------------|
| 1. Rated Capacity | : | As mentioned in the BoQ |
| 2. Type of Discharge | : | Front Horizontal Air flow pattern |
| 3. Air inlet Temp (Return Air) | : | 24 °C (DB) RH : 50 |
| 4. Temperature Variation allowed | : | ± 2 °C |
| 5. Ambient Air Design Temp
(Entering the Condenser) | : | 45 °C |



- | | | |
|----------------------------------|---|-----------------------------------|
| 6. Refrigerant | : | R407C |
| 7. No. of Refrigeration Circuits | : | One |
| 8. Type of load Factor | : | High sensible heat load (SHR>0.9) |

3.2 Micro-processor based Controller

The air conditioning system of the cabinet shall have a common microprocessor based controller for both AC units. The microprocessor based controller shall have the following features;

- | | | |
|---|---|--|
| 1. Controller | : | Common for AC1+AC2 |
| 2. Temperature Setting | : | 16 -30 deg. C with 1 deg C resolution |
| 3. Temperature variation from set temperature | : | $\pm 1^{\circ}\text{C}$ |
| 4. Unit Changeover | : | Both the AC units shall operate in pre-settable cyclic mode. Also, if one unit is faulty the controller shall be able to detect & put the other unit in operation automatically. |
| 5. Cumulative hours run | : | for each compressor of Air-conditioning system |
| 6. Safety | : | HP/LP switch and Under/Over voltage protection for units |

3.3 Fire Suppression and Access control

The offered Air-conditioned cabinet shall have provision for Rack based fire Alarm cum Suppression system suitable to suppress fire/ fire like situation automatically in Equipment cabinet. Also, Cabinet shall have provision for Rack environment monitoring like temperature, humidity, door sensor, Auto Door control unit, Email notifications module tc. Access control proposed shall be of coded lock type. Following potential free alarms shall be available for integration and extension for monitoring from NOC;

1. Power Fail alarm
2. High Temperature Alarm
3. Door Open Alarm
4. Fire Alarm

The fire suppression system shall be rack mountable solution for early fire detection & automatic fire extinguishing using eco-friendly NOVEC 1230 clean agent gas.

3.4 Power Supply

The offered air-conditionings equipment shall work satisfactorily for the power supply range as mentioned at mentioned below:

1. Nominal Voltage: 400 V (3 phase Raw)
2. Variations: $\pm 10\%$
3. System frequency: 50 Hz ($\pm 5\%$)

Supply and installation of all required DB Panels, cabling, wiring and termination and accessories including circuit breakers and sockets shall be carried out by the Contractor.

1. The safety earth and signal ground networks shall be inter-connected only at the safety earth stud and signal ground stud.

At each location, the Centre will provide the station earth in equipment room. The Contractor shall be responsible for connecting the cabinet with existing station earth for the equipment to be supplied under this contract. The Contractor is responsible for providing all required earthing/grounding cable and installation.



3.5 Preventive Maintenance Schedule to be submitted to cover manufacturer's recommendation and/or common engineering practice for the entire installation under contract. Monthly status reports to be submitted.

3.6 SLA : 98% uptime of all systems under contract to be maintained. Up time shall be assessed every month and in case of shortfall during any month, the contract shall be extended by a month. Sample SLA to enforce uptime and maintenance parameters is to be submitted along with the technical bid

3.7 Drawings: The datacentre design including rack layout must be indicated in the CAD diagram made available. All relevant drawings for the data centre must be provided to ICTS in soft copy CAD and PDF format along with the Cover 1 i.e. the technical bid.

3.8 Specifications of the site:

- **Allotted physical space : Approx. 30 Sqmtr**
- **Location of the building : Ground Floor**
- **Electrical & UPS : ICTS will be responsible for providing the required power for the data centre. All components necessary for the complete set-up of electrical and UPS works (including panels) must be a part of the quotation.**
- **Civil : ICTS will provide the fire-rated partition along with false flooring (300mm) through another tender. The successful bidder should co-ordinate with the civil team/ contractor for any specific requirements.**

For and on behalf of International Centre for Theoretical Sciences-TIFR



Authorized Signatory

Administrative Officer - 'C'
International Centre for Theoretical Sciences
Tata Institute of Fundamental Research
Survey No. 151, Shivakote,
Hessaraghatta Hobli, Bangalore - 560 089.



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Date: 19/12/2018

FINANCIAL BID

Please let us have your lowest Quote for the following:

Sl. No	Item Description	HSN/ SAC Code	Qty	Rate per unit Rs.	Amount Rs.
1.	Rack 800Wx2000Hx1400D (800Wx2000Hx600D and 800Wx2000Hx800D with Baying tube), plain top cover, bottom cover with standard gland plates with foam insert for cable entry and rear 4nos. of 50mm dia rubber grommets., 2 pairs of 42U 19" L - type angles & special assembly kit for mounting 19" angles & punched sections. (Color: RAL 7035) with Front sheet steel glazed door 2000Hx800W (RAL 7035) and Rear sheet steel double door 2000Hx800W (RAL 7035), SO Plinth, Captive hardware (pack of 20), Air baffle plate, Metal shunting rings 90x60 (pack of 10) & Component shelf 720mm deep, Rack U space available should be more than minimum 120U		3 No.		
2.	Side Panel 2000Hx600D screw fixed, unvented (RAL7 035)		1 No.		
3.	Side Panel 2000Hx800D screw fixed, unvented (RAL 7035)		1 No.		
4.	Ergoform Handle, RAL 7035		3 No.		
5.	Lock Insert with Unique Key		3 No.		
6.	Copper earth rail 15x3x500 with 10 points with screws and insulators		3 No.		
7.	1U Pro Fill Blanking Assembly, Black Colour		60 No.		
8.	1U 19" Horizontal Cable Manager (Zinc blue plated)		3 No.		
9.	External Condensing Unit (ODU) - 7kW for Zero U Rack based cooling System		2 No.		
10.	Redundancy Controller with Display Unit		1 No.		
11.	Zero U Rack based Heat Exchanging Unit with 4 fans (IDU)		2 No.		
12.	Low Side Work for Air-conditioning unit including copper piping with insulation, 1 MS Stand for outdoor unit, drain pipe. (Piping length upto 30 Mtrs only).Supply and Fixing of Cable Trough of size : 300W x 75H mm with Cover Lid & necessary accessories for fixing. Cabling & Terminations for Low Side Piping Works between IDU, ODU & Controller		2 No.		
13.	Data entre Monitoring system with Temp, Humidity, WLD, Coded Lock and Automatic door - Controller Processing Unit		1 No.		



14.	Temperature/humidity sensor		3 No.		
15.	Programming cable USB		1 No.		
16.	CAN-Bus Unit Access		3 No.		
17.	Coded lock Reader		1 No.		
18.	Door Kit TS IT, 2-piece door		3 No.		
19.	Water leakage sensor		3 No.		
20.	Door Control Module (for automatic door opening in case of Emergency)		2 No.		
21.	Ergoform handle (electro-magnetic)		3 No.		
22.	Door Switch		3 No.		
23.	Power pack		3 No.		
24.	Connection cable C13/C14		3 No.		
25.	Controller mounting unit, 1 U		3 No.		
26.	Cable clamp rail		3 No.		
27.	CAN-Bus connection cable, 1,5 m		11 No.		
28.	Special Lower Lock rod for DK PS		3 No.		
29.	Socket strip 5A, 19" mounted with 6 sockets RAL 9005		4 No.		
30.	Option 1: Vertical PDU, 32A, Single Phase, C13 Sockets - 16nos, C19 Sockets - 4nos, 32A DP MCB with cover, Power cord of 6sqmm x 3core cable with pin type lugs.		6 No.		
	Option 2: IP based Metered PDU, 32A, Single Phase, C13 Sockets - 16nos, C19 Sockets - 4nos, 32A DP MCB with cover, Power cord of 6sqmm x 3core cable with pin type lugs.		6 No.		
31.	IEC 309 32A 2P+E Plug with Socket.		6 No.		
32.	Rack based Fire Detection & Suppression system (NOVEC 1230 gas based) for 3 racks with smoke detector		1 No.		
33.	Wall Mount Main Power Distribution Board Incomer Feeder : 160 A, 4Pole, 25kA, MCCB with LED Indication lamps. 1 nos. Type 2 - Surge protector		1 No.		



	<p>1 nos. Load Manager with RS-485 communication port</p> <p>Outgoing Feeders :</p> <p>1) 63A DP MCB, 10 kA (7 nos)</p> <p>2) 25A DP MCB, 10 kA (7 nos)</p> <p>3) 6A DP MCB, 10 kA (4 nos)</p> <p>The above articles with necessary mounting and fixing accessories enclosed in metal enclosure (RAL 7032 powder coated) wall mountable, having suitable cable entry,exit and terminations all complete.</p>				
34.	Wall Mount UPS DB Panel with Cabling till the Rack		2 No.		
35.	Digital rodent repellent system to protect the room from rodents with transducers placed at appropriate places. The system should have an auto tuning facility and a minimum range of 500 sft per transducer. The system should be on UPS backup.		1 No.		
36.	Installation, Commissioning & Project Management Charges		1 No.		
37.	Freight and Unloading Charges		1 No.		
38.	Warranty: 3 Years' Comprehensive On-site Warranty				
	Sub Total				
	Add: GST				
	Total Amount				
Total Amount in Rupees					

	Extended Warranty Charges				
	Extended Warranty Charges for 4th Year				
	Extended Warranty Charges for 5th Year				

Name:

Designation:

Signature:

Signature, Name, Address and
Seal of the proprietor / Managing Partner etc.
Seal of the Company:

Date:

