ट्रांसलेशनल स्वास्थ्य विज्ञान
एवं प्रौद्योगिकी संस्थान

thsti

TRANSLATIONAL HEALTH SCIENCE
AND TECHNOLOGY INSTITUTE

**Phone No. +91-129-2876300, Website: www.thsti.res.in**

# Request for Proposal (RFP)

# For

**Design, Supply, Installation, Integration, Testing, Commissioning, Training and Maintenance of Modular and Integrated Data Center Infrastructure at THSTI, NCR-Biotech Cluster, Faridabad, Haryana**

**(THSTI/RFP/DC/2017-18)**

**29th December, 2017**

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# Abbreviations

| | |
|---|---|
| CMC | Comprehensive Maintenance Contract |
| BG | Bank Guarantee |
| BoQ | Bill of Quantity |
| CD | Custom Duty |
| CPPP | Central Public Procurement Portal |
| DC | Data Centre |
| DSIR | Department of Scientific & Industrial Research |
| EMD | Earnest Money Deposit |
| EOI | Expression of Interest |
| GST | Goods and Service Tax |
| HTTP | Hyper Text Transfer Protocol |
| IGBT | Insulated-Gate Bipolar Transistor |
| MCB/MCCB | Miniature Circuit breakers/ Molded Case Circuit Breaker |
| OEM | Original Equipment Manufacturer |
| PAC | Precision Air Conditioning |
| PBG | Performance Bank Guarantee |
| PDU | Power Distribution Unit |
| PESO | Petroleum and Safety Explosives Organisation |
| PWM | Pulse Width Modulation |
| RFP | Request for Proposal |
| SMPV | Static and Mobile Pressure Vessel |
| SNMP | Simple Network Management Protocol |
| SoW | Scope of Work |
| THSTI | Translational Health Science and Technology Institute |
| UAT | User Acceptance Testing |
| UPS | Uninterrupted Power Supply |

# PART A: Notice Inviting Tender

**Tender Notice:**

On behalf of Executive Director, THSTI, **Online bids** under Two- bid System are invited only from the bidders who were found qualified after the evaluation of the EOI (THSTI/EOI/DC/2017-18) dated 03rd Oct 2017 for award of contract pertaining Design, Supply, Installation, Integration, Testing, Commissioning, Training and Maintenance of Modular and Integrated Data Center Infrastructure at THSTI, NCR-Biotech Cluster, Faridabad, Haryana. The scope of work includes Design, Supply, Installation, Integration, Testing, Commissioning, Training and Maintenance of Modular and Integrated Data Center Infrastructure as per the Scope of Work and Other Services, functional and technical specifications and bill of quantity ( BOQ) as detailed in the later sections of this RFP.

The work can't be assigned, transferrred or sublet to another party.

The penalty for non compliance shall result in revoking the security deposit/EMD.

| | | |
|---|---|---|
| Tender No. | : | THSTI/RFP/DC/2017-18 |
| Name of Work | : | Design, Supply, Installation, Integration, Testing, Commissioning, Training and Maintenance of Modular and Integrated Data Center Infrastructure. |
| Location of supply/work | : | THSTI, NCR-BSC, Faridabad, Haryana - 121004 |
| **Sale and cost of Tender documents** | **:** | **From 29th December, 2017**<br>The complete set of Request for Proposal (RFP) may be downloaded from our website: www.thsti.res.in and CPP Portal www.eprocure.gov.in or may also be collected from the Purchase Section, THSTI, Faridabad on submission of written request |
| Earnest Money Deposit | : | EMD of Rs 1, 10,000 /- (Rupees One Lakhs ten thousand only) is to be submitted to THSTI in a |

| | | |
|---|---|---|
| | | separate sealed envelope so as to reach us on or before the due date of opening of technical bids. The EMD shall be in the form of Demand Draft, drawn in favour of "THSTI, Faridabad". EMD will be refunded to the unsuccessful bidder after award of the work. |
| Notification of amendments | : | If the technical specification requires any modification, suitable amendment to the tender document will be issued and the same will form part of the tender document. **Corrigendum/amendments etc., if any, will be notified only on the THSTI web site/CPP portal and no separate advertisement will be released for the same.** Prospective bidders are therefore advised to regularly visit the THSTI web site or the CPP portal for any such updates. |
| Submission of Bids | : | The bids are required to be submitted online on the CPP portal i.e. http://eprocure.gov.in . Under the Two bid system the Technical bid and Price bid are required to be uploaded separately on the Portal. |
| Website for Online bid Submission | : | https://eprocure.gov.in |
| **Date and time for site-visit** | **:** | **Any working day before the last date of submission of Technial Bid between 15.00 Hrs to 17:00 Hrs** |
| **Date and time for pre-bid meeting** | **:** | **05th January, 2018 at 14.00 hrs. Bidders are requested to come with the written statement of their queries.** |
| **Date of publishing the response/ Clarification on pre-bid queries, if any** | **:** | **10th January, 2018.** |
| **Last date and time for online Submission of bids** | **:** | **18th January, 2018 up to 14.30 hrs (BID DUE DATE)** |
| **Date and time of opening of tender** | **:** | **18th January, 2018 at 15.00 hrs (Technical Bid Only)** |

**Period for completion of work : 8 Weeks from the date of release of Work Order**

**Kindly note that only online bid will be considered against this tender. Further, requests for postponement will not be entertained.** Bids send by Fax/email shall be rejected straightway. Executive Director, THSTI reserves the right to accept/ reject any or all tenders, either in part or in full, without assigning any reasons thereof.

**Only the eligible and technically shortlisted bids after the technical evaluation shall be considered for commercial comparison. Incompelte or the bids not adhering to the technical requirements or other terms and conditions mentioned in this document will stand rejected.**

**For rejected bids, no further communication or late submission of documents will be entertained by THSTI.**

**In case of any clarification in with regard to submission of bids please contact Section Officer (S&P) (Tel: 0124-2876432). Also, the bidders are advised to read the "Guidelines to bidders on CPPP's e-procurement module" available at the end of this tender document before submitting their bids.**

**Store & Purchase Officer**

**THSTI**

## PART B: Bidder/ OEM Eligibility criteria

The eligibility criteria for this RFP document remain same as defined in the published EOI THSTI/EOI/DC/2017-18 dated 03rd Oct 2017. Bidder shall explicitly notify THSTI in case if there is any deviation in the company profile, offered Data Center Solution or any other details submitted against the aforementioned invitation for EOI. The list of acceptable make/model of major equipments is present in the BOQ and the bidder has to comply with them. The OEM, make and model of the overall solution offered by the bidder including major equipments/machines cannot be deviated from the solution offered against the EOI. However, the the final solution should be based on the details present in this RFP.

# PART C: Instruction to Bidders

## 1.0 Special Instructions:

1. The Bidder shall carefully examine and understand the specifications/conditions of the tender document and ensure that they have understood all specifications/conditions of the tender document. If no such clarifications are sought in writing, it will be taken that the Bidder has read, understood and accepted all the terms, conditions and specifications in the tender document.
2. The Bidder is required to upload a copy of this tender document, with all pages signed by the authorized person, to confirm that Bidder has read and understood the conditions of this tender document and that the proposal is submitted in full understanding and agreement of the requirements of THSTI.
3. The Bidder should visit the site with prior appointment and carry out necessary inspection and test/measurement as are necessary before submitting the bids. All costs associated with such site visit and in preparation and submission of the Bid will have to be bear by the bidder. THSTI will in no case be responsible for such costs, regardless of the conduct or outcome of the bidding process. The date and time for the visit are mentioned in the Part A of this document.
4. THSTI reserves its rights to amend any of the terms and conditions of this tender document. Such amendment shall be published on THSTI and CPPP website only and will not be published in newspapers. The bidders are advised to regularly visit the website for any such update.
5. The complete bid shall be without alteration or erasures, except those to accord with instructions issued by the THSTI or as necessary to correct errors made by the bidder, in which case such corrections shall be initialled by the person or persons signing the bid.
6. The bidder shall submit only one option, which is best suitable to meet THSTI requirements. The bids submitted with more options shall be liable to be rejected.
7. The Bid prepared by the Bidder, as well as all correspondence and documents relating to the Bid exchanged by the Bidder and THSTI, shall be in English only.

8. The bidder shall base his solution on the basis of continuous availability of spares for at least 5 years, after the specified warranty period. An undertaking as per ATTACHMENT -3 PART G , should be submitted with the bid.
9. Wherever a specific form is prescribed in the Bid document, the Bidder shall use the form to provide relevant information. If the form does not provide space for any required information, space at the end of the form or additional sheets shall be used to convey the said information. For all other cases, the Bidder shall design a form to hold the required information.
10. The Bidder shall explicitly indicate the non-compliance or deviation of the Solution offered in the Proposal to all the terms, clauses, conditions and specifications stipulated in this RFP. If non-compliance or deviation for any term, clause, condition or specification is not explicitly indicated, it will be construed as compliance and if successful in the bid, the bidder is obligated to comply with all the requirements (excluding those non compliances explicitly accepted by THSTI in writing) in toto.
11. Successful bidder shall perform all the obligations specified in accordance with the terms and conditions laid down in the RFP. All details provided by the Bidder should be specific to the requirements specified in this RFP. Detailed clarification may be provided by Bidder, if so desired by THSTI. The Bidder shall specify the responsibilities of THSTI, if any, separately for the successful implementation of the project.
12. Bidder shall ensure that all documents are uploaded with the Technical bids or Price bid as per the checklist given at Annexure- I.

## 2.0 General Instructions:

1. Quotation/Tender should be uploaded on or before the bid due date stated in this RFP. Quotations/Tenders received after the bid due date will not be considered.
2. Quotation should clearly specify delivery schedule.
3. When quotation is in foreign currency, agency commission payable, if any, should be shown separately in Indian rupees.
4. Any taxes or statutory levies payable should be shown separately, otherwise quoted price will be

treated as all inclusive.

5. Any deviation from THSTI's specification of items shall be clearly indicated in quotation itself.
6. The validity of quotation should be for a minimum of 90 days from the bid due date.
7. Items offered should be as per requirements mentioned in the Technical specification.
8. The bidder may quote the items, which meets the requirements and specification. In such case, the bidder shall provide the layout, make, model, material specifications, dimensions, brochures, photo catalogues of items quoted along with the bid, if available.
9. Items are to be supplied and installed at THSTI Campus, Faridabad.
10. Delivery of material at site and installation including loading and unloading shall be the responsibility of supplier.
11. Bidders are advised to visit and familiarize themselves with the site conditions and concerned areas before submission of tender documents.
12. Bidder shall contact the tenderer for any clarification regarding the technical requirement.
13. The bidder should inform acceptance of Purchase Order within three days of receiving the order.

# PART D: General and Special Tender Conditions

## General Tender Conditions

1. Period of validity:

   The tender shall remain valid for acceptance for a period of ninety days from the bid due date.

2. Bidding Format:

   a. The bidder should submit its bid in the Technical and Financial bid format as provided in this RFP document. All the enclosures are required to be attached with the bids as per the sequence mentioned therein.

   b. Split-up part numbers of each item of the BoQ is to be shown in the financial bid with line item cost.

   c. Being a research organization, THSTI is entitled for Customs & Excise duty exemption, as mentioned under clause 8.0 below. Hence, bidders are requested to take note of the same while submitting their bids.

3. Award of Contract

   The contract will be awarded to the bidder whose bid has been determined to be eligible and to be substantially responsive to the bid documents and who has offered the lowest evaluated bid.

4. Performance Security

   **a.** Within 15 days of receipt of the Work Order from the THSTI, the successful Bidder shall furnish to THSTI a Security in the form of a Bank Guarantee from Nationalised/Scheduled bank for an amount of 10 percent of the Contract sum as per format prescribed at Annexure-II.

   **b.** The validity of the Performance Security as per the Notification of Award for work shall be upto the end of the (Warranty + CMC) period i.e. 5 Years, with 3 months claim period after expiry of the aforementioned period.

c. Failure of the successful Bidder to lodge the required Bank Guarantee shall constitute sufficient grounds for the annulment of the Award and forfeiture of the Bid Security, in which event the THSTI may make the Award to the next lowest evaluated Bidder or, if there are no other Bidders, call for new Bids.

5. Supply and Installation Terms:

a. The Bidder shall provide the detailed (technical specifications, dimensions, brochures, make, model, photo catalogues, and conformance to standards) mentioned about the quoted components and system along with the bid.

b. The required delivery schedule must be mentioned against each item.

c. The successful bidder should supply items as per the quantity listed in the BOQs.

d. Supply & Installation is at THSTI, Faridabad.

6. Project Duration:

a. The entire work including Supply, Installation, Testing, Commissioning, Training and integration with the current setup should be completed within 8 Weeks of releasing the work order.

b. The entire documentation and testing reports should be submitted within the project duration.

c. Training to the identified group of engineers in THSTI also to be provided within the project duration.

d. Final acceptance certificate will be issued by THSTI only after completing point a, b & c mentioned above.

7. Final Acceptance Certificate:

a. On successful completion of the work as per the 'Scope of work and other services' specified under Part 'F' of this tender document, the Bidder shall submit its application to THSTI for issue of 'Final Acceptance Certificate' for the work carried under this contract.

b. The complete work shall be subject to inspection by the technical committee consisting of

expert members. The performance of the system as a whole will be tested to comply with the acceptable standards and norms as per the 'Scope of work'.

c. On successful testing of the system the bidders will be issued the 'Final Acceptance Certificate'. In case any deficiencies are noticed during the inspection, the bidder will be liable to make good the deficiency failing which the 'Final Acceptance Certificate' will not be issued.

d. The bidder will be entitled to submit its bill for payment only when 'Final Acceptance Certificate' is issued by THSTI.

8. Taxes, Duties and other charges:

a. Tax: Full GST as applicable as per the Notification No. 47/2017-Integrated Tax (Rate) and No. 45/2017-Central Tax (Rate) dt. 14th November, 2017 issued by the Department of Revenue, Ministry of Finance, wherein, the GST Council has decided to reduce the tax rates of IGST and CGST on the inward supplies of goods for public funded research Institutions.

b. Customs Duty: THSTI is a Govt. Of India Organisation Registered with the Department of Scientific and Industrial Research (DSIR). We are hence availing exemption for customs duty Vide Notification No: 51/96 as amended vide Notification No: 24/2007. Necessary Customs Duty Exemption Certificate will be provided by THSTI, Faridabad for availing CD Exemption.

**Note: Since THSTI is entitled to concession on payment of custom duty as per above stated notification, the bidders should keep this point in mind while submitting their bids. The responsibility to claim concession on payment of custom duty on items to be used for the works shall be that of the bidder. THSTI will only issue concessional custom duty form as and when requested by the bidder.**

9. Payment Terms:

a. 100% payment to be made after successful installation and integration of the system subject to issue of 'Final Acceptance Certificate' as per clause 7.0 above.

b. Quantities mentioned under BoQ are approximate only. So the successful bidder should supply items listed in this section as and when required during the execution of the work. The payment will be made only for actual/supply installed/ utilized quantities &

labour at the site.

c. The Bidder shall pay all taxes, duties, levies, work contract tax etc. of the Government provisions of the Income tax Act or as per the advice of the Income Tax Authority. Deduction of Income tax/ Works Contract tax/ other taxes shall be made from payment as per the relevant provisions of the Income tax Act or as per the advice of the Income tax Authority/ other Competent Authority.

10. Liquidated Damages for Delay and any other damages

If the Bidder fails to complete the execution of works or any section by the time for completion, within the relevant time prescribed by Clause 4.0, then the Bidder shall pay to THSTI liquidated damages at the rate of the 0.5 % of contract value for per week of delay or part thereof subject to maximum of 5% of the contract value. The Employer may, without prejudice to any other method of recovery, deduct the amount of such damages from any money due or to become due to the Bidder. The payment or deduction of such damages shall not relieve the Bidder from his obligation to complete the Works, or from any other of his obligations and liabilities under the contract.

11. Warranty Clause

a. All devices as per BoQ should have comprehensive onsite warranty for three years from the date of commissioning of the network.

b. Bidder should ensure that there is a back-to-back agreement with OEM to meet above hardware and software warranty terms.

c. Bidder should ensure service & spare support for at least 5 years after the completion of warranty period.

12. Price Variation Clause

The rates quoted by the bidder shall be firm throughout the contract period and there shall be no upward revision of the rates quoted by the bidder for any reason what so ever.

13. Liability / Accident :

The bidder shall indemnify and keep indemnified THSTI against all losses and claims for injuries

and damages to any person or property whatsoever which may arise out of or in consequence of the construction or maintenance of the work and against all claims, demands, proceedings, damages, costs, changes , expenses whatsoever in respect thereof in relation thereto..

14. Extra Item

Any unforeseen item of work/supply / extra item of work as being authorised by THSTI and not included in the contract, shall be done by the Bidder at mutually agreed rates. Written prior approval of THSTI should be obtained before undertaking any extra work. Payment of such items shall be made at actual supported by necessary documentary evidence duly approved.

15. Termination

Notwithstanding anything elsewhere provided herein and in addition to any other right or remedy available to THSTI under the contract or otherwise including right of THSTI to claim compensation for delay, the THSTI may, without prejudice to his right against Bidder in respect of any delay, bad workmanship or otherwise or to any claims for damage in respect of any breaches of the contract and without prejudice to any rights or remedies under any of the provisions of this contract or otherwise and whether the date for completion has or has not elapsed by intimation in writing, absolutely determine the Contract.

Default or failure by the Bidder in any of the under mentioned cases, including but not limited to the following shall be the basis of taking action under this clause of the contract:

1) Failure to provide at the job site, sufficient labor, material, equipment, machinery, and / or facilities, required for the proper and / or due execution of the work or any part thereof:
2) Failure to execute the works or any of them in accordance with the contract.
3) Disobedience of any order or instruction of the Site Engineer and / or Engineer-in-charge.
4) Negligence in carrying out the work or carrying out of work found to be unsatisfactory by the Engineer-in-charge/THSTI.
5) Abandonment of the works or any part thereof.
6) Failure to execute the Contract in terms of the form of Contact forming part of the tender documents within Ten days of notice in this behalf from THSTI.

7) If the Bidder is incapable of carrying out the work.
8) If the Bidder misconduct in any manner.
9) If there is any change in the constitution of the Bidder (if a firm) or in the circumstances or organization of the Bidder, which is detrimental to the interests of THSTI.
10) Dissolution of the Bidder (If a firm or commencement of liquidation) or winding up (whether voluntary or compulsory) of the Bidder (if a company or appointment of a receiver or Manager of any of the Bidder's assets and / or insolvency or the Bidder (if a sole proprietorship) or of any partner of the Bidder (if a firm).
11) Delay in execution of work, which in opinion of THSTI shall delay the completion of work beyond the stipulated date of completion.
12) Distress, execution, or other legal process being levied on or upon any of the Bidders goods and /or assets.
13) Death of Bidder (if an individual)
14) If the Bidder of any person employed by him shall make or offer for any purpose connected with the contract any gift, gratuity, royalty, commission, gratification or other inducement (whether money or in any other form) to any employee or agent to THSTI.

The decision of the Executive Director, THSTI as to whether any of the events/ contingencies mentioned in aforesaid clauses entitling THSTI to terminate the contract has occurred shall be final and binding upon the Bidder. The reason for the termination stated in the notice of termination shall be final and binding upon the Bidder and shall be non-arbitral. The jobs left however by the Bidder shall be got done at his risk and cost through the other agencies and the Contract shall be determined accordingly.

16. Force majeure

The right of the Bidder to proceed with the work shall not be terminated because of any delay in the completion of the work due to unforeseeable causes beyond the control and without the fault or negligence of the Bidder, including but not limited to acts of god, or of the public enemy, restraints of a sovereign state, floods, unusual severe weather conditions.

17. Arbitration

Any claim, dispute or difference arising out of or in connection with this agreement and which cannot be settled by mutual consultations, shall be referred to sole Arbitration or an Arbitrator to be appointed by mutual consultations. The award of the Arbitrator shall be final and binding between the parties as per the terms and conditions of the Agreement to be executed on award of contract. The Arbitration proceeding shall be governed by the Arbitration and Conciliation Ordinance dated 26th March, 1996 and shall be conducted in Haryana.

18. Jurisdiction of Dispute

All disputes under this contract shall be subject to the jurisdiction of Faridabad.

19. Terms not expressly provided for

In case this tender document does not contain a provision or terms for dealing with a situation they may arise during the execution of the works, the relevant provisions contained in the CPWD manual or any other laws/rules shall be followed in such cases and the same will be binding on the Bidder.

## Special Tender Conditions

1) The site handover after all the mentioned work should be done within 8 Weeks from the date of release of Purchase Order.
2) At the most 2 complete shutdown of server room can be taken by the vendor while each shall not exceed more than 48 Hours.
3) Raw power supply will be provided nearby the UPS location in the server room. The electric connection of raw power with PAC & UPS and from UPS till the PDU of racks is under the scope of this work.
4) Any structure, permanent or temporary, dismantled or destroyed during the execution of the work shall, will be refill/remake or restore to its previous condition by the bidder at its own cost.
5) Since THSTI is fully functional Institute, special care to be taken for minimal disturbance to the existing lab work and other office infrastructure

6) Operating manuals for all the components of Data Center should be provided.

7) Actual price for the quantity/labour will be paid to the vendor for the items.

8) All offers should be accompanied with:-

   a) Detailed specifications of the items offered.

   b) Technical diagrams, illustrations etc.

   c) The delivery schedule of item should be specified in the offer.

   d) Other documents detailed as per schedule.

9) The warranty should be for a minimum period of 3 years from the date of installation and successful commissioning of the system.

**10)** All Components offered in the Bill of Material should be covered under OEM support enabling program so that to get back end support / benefits from Principles / OEM in terms of Free Support / Maintenance, if any, Access to 24 x 7 x 365 online support from Technical Assistance Center of OEM for resolution of problems with the help of their technical team on-site/off-site, advance defective part replacement during warranty (3 Years) and CMC period (2 years) within a period of two working days and OEM Login Access. **The undertaking from the OEM for the same should be enclosed with the technical bid.**

11) The Tenderer should have facility to register service call 24x7x365 days and has to ensure the availability of consumable/equipment/spare parts during 3 year warranty period and atleast 5 years after the warranty. All the parts replaced should be of the same standard/make of the original and THSTI has to approve for any deviation in standard. Service calls to be attended immediately or within 24 hours depending upon the situation. The servicing agency shall provide satisfactory installation certificate from the OEM for replacement and warranty assurance certificate from OEM for replaced items during warranty/CMC.

12) For monitoring over the HTTP using the offered data center management tools, the tenderer should quote the licenses legally. The licenses shall contain paper licenses and at least one set of media (DVD's/CDs) for each software.

13) **Completeness Responsibility**: Notwithstanding the scope of work, engineering, supply and services stated in bid document, any equipment or material, engineering or technical services which might not be even specifically mentioned under the scope of supply of the Tenderer and which are not expressly excluded there from but which are necessary for the performance of the work in accordance with the specification and executing the contract to establish achievement of performance guarantee parameters, are to be provided for and rendered by the Tenderer without any extra charge so that the said project is completed in all respect.

14) **Warranty and CMC:** All the items covered in the schedule of requirements, shall carry minimum three years on site comprehensive warranty (Consumables, Spares, Equipment) from the date of its installation & commissioning. A period of 2 years CMC will start on the same day of expiry of the warranty. The Tenderer must undertake to provide the installation and warranty/CMC service in Faridabad, Haryana.

| | |
|---|---|
| Service window | 24*7 |
| Telephone support | 24*7 |
| Response time: Onsite On call | 24 hrs (Penalty 1% of PBG per Day) |
| Resolution | 48 hrs (Penalty 1% of PBG per Day) |
| Spare turnaround time | 48 hrs (Penalty 1% of PBG per Day) |

15) For service calls related to less cooling; call should be attended within 2 hours from the time of logging the call. In case of faults related to other components like intelligent security system shall be attended to within the next business day. The Tenderer shall ensure that a minimum stock of critical spare parts / units of the system are maintained as spare stock at the site along with the spare parts list and specifications.

16) Failure to do so would result in the invoking of the PBG. The PBG will be released by THSTI only after receipt of performance certificate issued by end-user after the completion of warranty and CMC period.

17) Delivery, Storage and Handling: Deliver materials to the THSTI site in supplier's or manufacturer's original wrappings and containers, labeled with supplier's or manufacturer's name, material or product brand name, and lot number, if any. THSTI shall provide storing spare

for materials in their original, undamaged packages and containers, inside a well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity. However the tenderer shall be responsible for safe and secure upkeep of the items until they are installed, commissioned and handed over.

18) Drawing and Product Data: Submit sufficient information to determine compliance with the Drawings and Specifications.

19) The selected Tenderer shall report project progress on periodic intervals and submit daily and weekly reports.

# PART E: BoQ and Technical Specification

## Components

1. Cooling - In-row/In-rack based Precision Air conditioner with variable capacity cooling, heater and humidifier to cater IT load **8.5 TR (30 KW)** for total 5 racks. Air-conditioning system is to have 100 % reliability on 24 x 7 basis with a total cooling capacity of 30 KW and with adequate standby for system redundancy. (Failure of any single unit; still to meet the total cooling requirement of 30 KW). Tenderer to provide proof for the technical basis on their redundancy assumption to achieve the uptime objective, **ATTACHMENT 10**. The tenderer can quote multiple units as per manufacturers units.
2. Primary fire suppression using linear heat sensitive tube connected to the Extinguisher container with pressure release valve. Novec 1230 Gas based fire suppression system as per NFPA guidelines.
3. Smoke detectors, water leak detection system, Temperature sensor, beacon in rack and alarm in outside corridor.
4. Racks - 42 U racks of dimension 600 mm x 1000 mm - 4 numbers for servers/storage and 42U racks of dimension 800mm x 1000 mm – 1 number of networking units. Rack mount PDU Standard Rack PDU (Vertical) - with 24 sockets (20 IEC C13 & 4 IEC C19)-02 Nos. for each Rack with 2.5 mtr. Power chord (each rack is having two PDU's). The overall depth of the enclosure including the space for Hot and Cold Aisle should be more than 1200 mm.
5. 2 (Two) No.s of 30 KVAUPS in N+N redundancy mode. The One battery set provided by the bidder should provide 15 Mins of power backup on 100% load.
6. Monitoring system – capable of sending Email & SMS alerts
7. Biometric access control system for racks and entry door which should be control of fire fighting access panel.
8. Redundant electrical system three phase with essential MCB/MCCB.
9. Intelligent integrated infrastructure would have provision to add an extra rack in the future. It should be flexible, adaptable, controllable infrastructure.
10. Rodent repellent system.

11. Power distribution system for rack and room.

12. Civil & Interior works– Gypsum partition with doors, painting, insulation etc.

**The features, requirements and benefits are being sought as per the following Technical Bid Format:**

| S. No | Description of Requirements | Bidder shall state as: Fully Compliant/ Partially Compliant/ Non-Compliant |
|---|---|---|
| **1** | **Scope of Work as detailed in *Point No.1 PART F* of this RFP** | |
| **2** | **Requirements** | |
| 2.1 | Integrated Data Center Infrastructure Solution **(hereafter referred as 'DC Solution')** with Cold and Hot aisle containment of 5 racks should cater IT load of minimum 30 kW | |
| 2.2 | The Intelligent Integrated Infrastructure essentially includes internal redundant or backup power supplies, environmental controls (e.g., precision air conditioning, fire suppression, smoke detection, water leak detection, humidity sensor, intelligent monitoring system, security devices, etc.) Air-conditioning system is to have 100 % reliability on 24 x 7 basis with a total cooling capacity of 30 KW and with adequate standby for system redundancy. **(Failure of any single unit; still to meet the total cooling requirement of 30 KW). The ambient temperature considered for the calculation of total tonnage requriement should be 45 Degrees** Adequate RAW power supply and earthing in the server room will be provided by the customer. | |
| 2.3 | The detail specifications of the DC Solution, standalone system shall be in adherence to standard Data Centre guidelines thus shall be composed of multiple active power and cooling distribution paths, but only one path active. Shall have redundant components. | |
| 3 | **Solution shall have following components:-** | |
| 3.1 | **In-Row closed loop Air-Conditioning ( Approved Make: Rittal OR Vertiv)** | |
| 3.1.1 | Data center server and network racks should be equipped with cooling units to provide closed loop precision cooling system which should be able to cool the equipment's uniformly right from 1st U | |

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| | to 42nd U of Rack through Row/Rack Based Cooling | |
| 3.1.2 | Precision Air Cooling for the 5 Rack solution should be of 30kW capacity with standby.<br>**Precision Air Conditioner should have fo**llowing Features:<br>1. Cooling System should be DX (Inverter type brush less compressor/Digital Scroll with VFD) type.<br>2. Heater and Humidifier to cater IT load up to30kW<br>3. Outdoor Unit | |
| 3.2 | **2 No.s of 30 KVA true online UPS System ( Approved Make For UPS: APC/Vertiv/Delta Ultron)**<br>**(Approved Make For Battery : Exide/Rocket/Amaron)** | |
| 3.2.1 | UPS for set of 5 racks should be of 30KVA in N+ N topology with pf up to 0.9 and efficiency at least 94% for greater than 50 % Load. One set of battery with interlinks and connection to be provided to deliver 15Mins of backup at full load. One Battery set is to be provided by THSTI. Other features of UPS system are as follows:<br>1. True On-line UPS with Widest input range at full load (340V-480V) or better.<br>2. Double conversion and IGBT technology: Full IGBT Rectifier /Battery Charger and IGBT based Inverter<br>3. Facility for remote monitoring<br>4. N+N redundancy should be provided.<br>5. Input frequency: 45-55 Hz (auto sensing)<br>6. Input power factor: 0.99<br>7. Input current distortion with no additional filters.<br>< 5% THD at 100% linear load<br>8. Power walk-in/Soft-Start: Shall be linear from 0 to 100% of the load over a 15-second period<br>9. Overload capability:<br>150% for 1 minute in normal operation<br>125% for 05 minutes in normal operation<br>110% continuous in bypass operation | |
| 3.3 | **Power Distribution** | |
| 3.3.1 | Standard Rack PDU (Vertical) - with 24 sockets (20 IEC C13 & 4 IEC C19)-02 Nos. for each Rack with 2.5 mtr. power chord (each rack | |

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| | having two PDU's). | |
| 3.4 | **Main Electrical Panel and Cabling** | |
| 3.4.1 | DB panel should be mounted on to utility rack/room wall with all internal cabling integrated into the same. Essential MCB/MCCB should be provided with electrical system. All the PDUs inside all 5 Racks should be connected by the UPS. As no raised flooring is being done in server room, the power cables shall be laid by the help of overhead rails and separate cable tray for network and electrical cables. | |
| 3.4.2 | Any extra electrical points and data points required in the server room shall have to be provided by the vendor at his own cost. | |
| 3.5 | **Fire Detection and Suppression** | |
| 3.5.1 | Fire detection and suppression system: Rack based fire detection and suppression system. It should have Fire alarm and fire suppression unit and the fire suppression agent should be NOVEC 1230 Gas as per NFPA guidelines. | |
| 3.6 | **Environmental Controls** | |
| 3.6.1 | Each rack (5 nos.) should include basic environmental controls:<br>2 Nos. Temperature/ Humidity Sensor each | |
| 3.7 | **Racks and U Space ( Approved Make: Rittal/Vertiv)** | |
| 3.7.1 | 1 No.s of 42 U racks of dimension 800 mm x 1000 mm | |
| 3.7.2 | 4 No.s of 42 U racks of dimension 600 mm x 1000 mm | |
| 3.7.3 | Solution should have Min 185 U (total) space available for IT and network equipment. | |
| 3.7.4 | Blanking Panel: 50% each for all the supplied Racks. | |
| 3.7.5 | Total Depth of the enclosure including hot and cold aisle should be more than 1200mm | |
| 3.8 | **Monitoring. ( Approved Make : Rittal /Vertiv)** | |
| 3.8.1 | UPS, Inrow, Temperature, Humidity sensors monitoring facility of server room. | |
| 3.8.2 | Capable for sending Email and SMS Alerts to 5 intended persons in | |

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| | case of emergency. | |
| 3.8.3 | Access and monitor the status critical components through mobile app/browser. | |
| 3.9 | **Other features:** | |
| 3.9.1 | The DC Solution would provide much functionality and some of the key functionalities are – Cold and Hot aisle contained and **single OEM for Racks, Cooling and Monitoring.** | |
| 3.9.2 | DC Solution would have provision to add extra racks in future. It should be flexible, adaptable, controllable infrastructure. | |
| 3.9.3 | Rack based Biometric access control system. | |

## Detailed Specification of Components:

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| 3.10 | **Uninterrupted Power Supply (UPS) System** | |
| 3.10.1 | **General Description:** | |
| | Supply, installation, testing and commissioning of true online, double conversion, high efficiency, and high power factor Uninterruptible Power Systems (UPS) rated at 30 KVA with One set of battery backup support for 15 minutes on full load. UPS shall be installed in a separate UPS room & the backup batteries should be supplied with the necessary arrangements. | |
| 3.10.2 | Configuration: 2 x 30kVA ( Same make, model and rating) | |
| 3.10.3 | **Scope** | |
| 3.10.3.1 | **1)** The scope shall include design, supply, installation, testing and commissioning of the complete UPS system and related accessories including:<br>**2)** All Server racks will get power feed from two independent UPS systems to ensure redundancy.<br>**3)** Battery & UPS should be mounted outside of the considered DC area**.**<br>**4)** All systems should be tested in factory as per the manufactures recommended procedure for all operating parameters and the test results should be provided during the installation. | |

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| | **5)** Delivery at site, unloading, handling, installation of complete system including interconnection from the UPS system to batteries and to input / output panels switches. All interconnections shall be done using multi-strand Flexible Copper conductor cables of appropriate sizes.<br>**6)** Scope includes battery bank connections and providing safety barriers for all bus bars and cable connection leads on battery racks.<br>**7)** Energizing of UPS and Battery bank commissioning.<br>**8)** UPS control parameters setting and complete testing of system on load.<br>**9)** Service backup by engineer till system is fully operational and subsequently training is to be provided to the concerned persons of the Institute.<br>**10)** Any upgrade of the system hardware and other associated software during the warranty or CMC period should be supplied at free of charge.<br>**11)** Acceptance tests will be carried out after installation and the systems will be taken over only after successful completion of the acceptance tests.<br>**12)** Operation and service manuals of the systems containing technical / Electronic drawings / circuit diagrams complete in all respects should be supplied. | | |
| 3.10.3.2 | **Specification / features of the Each UPS system are as follows:**<br>**1)** Widest input range. -<br>**2)** Double conversion and IGBT technology. -<br>**3)** Full IGBT Rectifier / Battery charger -<br>**4)** IGBT based Inverter -<br>**5)** Batteries to support combined 15 minutes full load backup. (Extra backup with external batteries and charger if required)<br>**6)** Power distribution panels<br>**7)** Facility for remote viewing<br>**8)** Easy to expand in a cost effective way | | |
| 3.10.4 | **UPS other technical specification** | | |
| 3.10.4.1 | **General** | | |

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| | UPS type | ON-LINE | |
| | Rating (VA) | 30,000 VA | |
| | Technology | IGBT with PWM Switching | |
| | Crest Factor | 3:1 | |
| | Invert efficiency | >96 % | |
| | Overall efficiency | >94 % from 50 % to 100 % | |
| 3.10.4.2 | **Input Ratings** | | |
| | Nominal Input Voltage | 415V AC (3-Phase) | |
| | Permissible input voltage variation at full load | 340 V – 480 VAC or better | |
| | Nominal input frequency | 50 Hz | |
| | Permissible input frequencies variation | 45 Hz to 55 Hz | |
| | Input power factor at full load | > 0.99 at full load | |
| 3.10.4.3 | **Out Put Ratings** | | |
| | Nominal output voltage | 380V (3-phase) / 230V (1-phase) | |
| | Output Voltage regulation | < +/- 1% | |
| | Output voltage distortion | <2% THD maximum and 1% single harmonic for a 100% linear load<br><5% THD maximum for a 100% non-linear load | |
| | Nominal output frequency | 50 Hz | |
| | Waveform | Pure Sine wave | |
| | Power factor | 0.9 lagging | |
| | Over load capability | 125% for 5 minutes, | |

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| | | 150% of full load for 1 minute,<br>with automatic transfer to bypass | |
| | Transient recovery time | 50 milliseconds to nominal | |
| 3.10.4.4 | **Bypass** | | |
| | Voltage Range | +10% -10% | |
| | Frequency | 50/ 60Hz | |
| | Frequency Range | +/-10% | |
| 3.10.4.5 | **Battery Parameters** | | |
| | Type | SMF | |
| | Make | Exide/Rocket/ Amaron Quanta | |
| | No. of battery blocks | 26-40 | |
| | Battery nominal voltage | 12V | |
| | Battery Voltage | 384-480Vdc | |
| 3.10.4.6 | **Environmental Parameters** | | |
| | Operating temperature | 0 to 45 deg. Centigrade | |
| | Storage temperature | -15 to 45 deg. Centigrade | |
| | Relative Humidity | 95% RH non condensing | |
| | Altitude | 1000 meters | |
| | Temperature de-rating | 30-40deg no de-rating | |
| | Altitude de-rating | < 1000m; derating according to GB/T3859.2 when higher than 1000m | |
| | Noise level | <58db | |

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| 3.10.4.7 | **Monitoring Software** | SNMP, Dry contact card, site monitoring / shutdown for multiple servers | |
| 3.10.5 | **Installation and Configuration** | | |
| | 1. The entire system shall be installed as per manufacturer's recommendations & instructions including all interconnections for supply & control circuits.<br>2. All components shall be clearly identified using labels including battery cells individually.<br>Services of authorized representative or manufacturer for supervision of installation, connections, testing, & adjustments shall be provided. | | |
| 3.10.6 | **Testing and Commissioning** | | |
| | 1. Under supervision of manufacturer's representative all system functions, operations, protective features shall be checked & pre-set to ensure compliance or specifications.<br>2. Test the system as per recommendations & test listed below using pre-calibrated instruments.<br>3. Simulation of malfunctions to verify protective device operations.<br>4. Duration of supply on emergency. Low battery voltage alarm & shutdown, transfer & restoration of normal supply.<br>5. Remote status & alarm tests.<br>In case of test any shortfalls / faults, the same shall be rectified & test procedure shall be again repeated to establish satisfactory performance. | | |
| 3.10.7 | **Drawings & Manuals** | | |
| | Following drawings & manuals / information shall be submitted in at least THREE copies at appropriate stages & for handing over the system.<br>1. Manufacturer's data for product, features, components & performance along with the offer.<br>2. Operation & maintenance manual with;<br>3. List of recommended spares & replacement components.<br>4. Detail operating instructions covering operations in normal | | |

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| | & abnormal conditions.<br>5. Shop drawings showing detail fabrication, assembly of components, internal & interconnecting wiring, dimensions, plans & views, installation details access & clearance etc for approval.<br>6. Product certificates for Brought out items.<br>7. Factory test certificates & Inspection report.<br>*8.* Field test reports. | |
| 3.11 | **Precision Air Conditioning System of 30kW Capacity** | |
| 3.11.1 | **Configuration** | |
| | a. Supply, installation, testing and commissioning of DX Type floor mount Row Based Air-conditioning units designed specifically for high sensible heat ratio with variable cooling technique to match the low latent loads of systems to be installed adjacent to cabinet for effective and uniform distribution of cooling. Ambient air design temperature to be considered is 45 Deg C. | |
| 3.11.2 | **Direct Expansion** | |
| 3.11.2.1 | **Cooling Circuits**<br>**1.** One refrigeration circuit, incorporating a high efficiency, Inverter based brush less compressor with crankcase heater, safety valve, solenoid valve and an electronic expansion valve.<br>**2.** Compressor is equipped with pre-set high and low pressure switches for protection against high condensing and low evaporating temperatures.<br>**3.** The evaporator coil should be manufactured from raised lance type corrugated aluminum fin and copper tube coils. Coil shall be rated for a maximum pressure of 600 psig (4200 kPa), and the coils should be certified in accordance with UL207. Coil header should be equipped with a drip plate in the bottom to capture and direct the condensation accumulating on the suction header tube to the drain pan. Coil should have multiple circuits complete with brass distributor and copper distribution tubes. | |
| 3.11.2.2 | **Fan Section**<br>Units should be offered with two plug EC Direct Drive Fan, High efficiency, EC motor with integrated electronics, Maintenance free | |

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| | design and construction. The fan section shall be designed for higher air flow. Each PAC unit should be capable of delivering 80-100 CFM per kW. The fan shall be protected from over temperature of motor, electronics, locked rotor protection, short circuit of motor output. Fans are IP54, Protection class F. | |
| 3.11.2.3 | **Cabinet and Frame**<br>The unit shall be powder painted steel panels with min 10mm insulation. It shall have a suitable enclosure for high voltage components. The frame shall be painted with a powder coat black colour finish to protect against corrosion. The unit is to be totally front and rear accessible, including any component removal. Unit shall be provided with casters and leveling feet for an easy unit placement into the row of racks. | |
| 3.11.2.4 | **Air Filtration**<br>1) The filter filters shall be minimum 30% efficient per ASHRAE Standard 52.1, UL Class 2 (MERV 8 per ASHRAE 52.2). Filters shall be EN779 G4 efficient. The pleated filters shall be replaceable from the rear of the unit.<br>2) Clogged filter alarm must be available for standard. | |
| 3.11.2.5 | **Refrigerant**<br>All units equipped with direct expansion circuit are suitable for R410A refrigerant. | |
| 3.11.2.6 | 1) **Microprocessor Controller**<br>2) Air conditioning models should be controlled by microprocessor based controller with Touch Panel. It can be programmed to control the function of every device within the unit via I/O.<br>3) The controller shall allow setting and monitoring of the room parameters. Unit utilizes multiple temperature sensors placed at the rack inlet, to ensure management and control of temperature by rack. The controller should allow setting and monitoring of parameters:<br>4) Following features should be incorporated in the controller:<br>5) LAN management: functions provided as standard include stand-by (in case of failure of the unit in operation, the second one starts automatically), and automatic rotation.<br>6) Automatic restart must be provided after a power failure. | |

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| 3.11.2.7 | **Monitoring**<br>1) There should be SNMP and HTTP/Web-management capability for enhanced communications and control of HPM systems. The cards make use of an Ethernet network (100Mbit/1Gbit) to monitor and control a wide range of operating parameters, alarms and notifications to a standard web browser (Internet Explorer). A provision can also be made to make the monitoring possible on the mobile phones.<br>2) The unit shall also include input volt-free contacts for simple remote monitoring of low and high priority alarms: high/low temperature, high/low refrigerant pressure, fan/control failure, compressor/control failure and others are available. | |
| 3.11.2.8 | **Condenser**<br>The condenser should be with fan speed controller designed & set for usages of R410A refrigerant. Condenser should work at 0 deg C to 45 deg C ambient temperature. The motorized fan shall be IP54, protection class F | |
| 3.11.2.9 | **Additional Features – Humidifier**<br>The unit is fitted with Humidifier shall be able to modulate capacity. The humidifier shall be self-contained, steam-generating type, factory piped and wired, with disposable cylinder and automatic solid-state control circuit. Humidifier canisters shall be replaceable. The humidifier controller shall communicate directly to the microprocessor controller and provide complete status and control at the operator interface. Humidifier shall control flush cycling and conductivity via automated controls. Humidifier shall be capable of producing up to 6.6 lbs (3 kg) of steam per hour | |
| 3.12 | **Racks & Accessories** | |
| | Rack Containment Frame is 42 U, 19'' mounting type with standard Rack + Cold / Hot Aisle Containment for all the 5 Racks | |
| 3.13 | **Safety and Security Systems** | |
| 3.13.1 | **Fire Alarm and Fire Suppression System**<br>The integrated infrastructure solution should be designed as a complete stand-alone unit with security, fire detection and fire suppression systems. Each of the systems is inter-operable and inter connected.<br>Environmentally friendly NOVEC 1230 agent should be used to | |

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| | ensure that no harm to human beings and environment is caused.<br>Following systems should be installed.<br>1) NOVEC 1230 Clean Agent for fire suppression system<br>2) Fire detection and alarm systems, with detectors and panel.<br>3) VESDA<br>4) Protected area: The entire volume of the server racks shall be protected with fire detection and fire suppression system. The doors should be secured by Access Control system.<br>*5)* The NOVEC 1230 system shall be designed and installed as per NFPA 2001-2012 Edition. SMPV, Petroleum and Safety Explosives Organization (PESO) approved cylinder filled with NOVEC 1230 is installed. | |
| 3.13.2 | **Rodent Repellent System** | |
| 3.13.2.1 | The area inside gypsum partition and the remaining area of the server room should be covered by Rodent Repellent System. | |
| 3.14 | **Monitoring** | |
| | Supply and installation rack mountable monitoring system with Sensors & notification system. The system shall continuously collect critical information from network connected devices such as, temperature & humidity sensors, Water Leak sensor and other dry contact monitoring. Beacon & Buzzer-Sound and Flash Led Alarm. Based on pre-set parameters, automated email alerts are sent to the intended recipients and mobile app based monitoring. | |
| | 1) Intelligent Rack environment remote monitoring | |
| | 2) Modbus 485 Communications | |
| | 3) SNMP Communication | |
| | 4) Single window for monitoring all sensors | |
| | 5) Data and logs of historical information of alarms and notification | |
| 3.15 | **Cleaning** | |
| | 1) On completion of installation, testing of the system all components, cabinets etc. shall be cleaned & unwanted | |

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| | material, debris shall be removed from site.<br>2) Scratches dents if any shall be cleaned & touched up to match the original finish.<br>3) Cable and electric wire should be arranged in a way that minimize the physical tempering with the existing infrastructure and should be properly managed maintaining the aesthetics | |
| 3.16 | **Maintenance and Support** | |
| | **After Sale Service**<br>1. Service shall be guaranteed by supplier during defect liability period / guarantee period.<br>2. Product OEM shall offer the Data Centre with 24 x 7 services through their authorized service engineer for a period of at least 1 year.<br>3. Product OEM shall provide ON SITE warranty for from the date of taking over of the equipment after the acceptance tests. Three years onsite warranty should be provided on items specifically written in this tender.<br>4. Basic training and operational training to be provided after the successful installation of DC.<br>5. Quaterly preventive maintenance to be carried out during the warranty and CMC period. | |

# PART F: Scope of Work and Other Services

## 1. Scope of Work (SoW)

This work covers intelligent modular integrated factory fabricated infrastructure, standalone system design, engineering, manufacture, assembly, testing at manufacturer's works, supply, delivery at site, unloading, handling, proper storage at site, erection, installation, testing, successful integration, training and maintenance of all units and commissioning at site of complete infrastructure for the proposed Integrated Data Center Solution to be installed as detailed in the specification, complete with all accessories required for efficient and trouble free operations. The solution should support

i. **5 (42 U) Server Rack and minimum 30 KW IT Load,** which shall be able to host current/additional critical hardware like high end servers and Networking devices.

ii. It should be designed in a way that it offers scalability over a period. The design should consider redundancy, scalability and maintainability. Bidder should submit General Arrangement (GA) drawing for the offered product.

iii. The Overall Space for Server room to be considered is 6 mtr Lenght x 3.6 mtr width x 3.0 mtr height. 2 Hrs Full Height Fire rated Gypsum Partition to be created including painting around the server room and one number 1.2 Meter wide x 8 feet height 1Hr Fire rated door to be provided with Glass vision Panel and door closure. The Gypsum partition to be created will be of U shape with the 3 sides of 6 meter x 3.0 mtr + 3.6 mtr x 3.0 mtr + 3.6 mtr x 3.0 mtr (actual dimensions may vary). However, if stipulated, the bidder's suggestion to change these dimention can be considered by THSTI.

iv. The detail specifications of the intelligent integrated/inbuilt infrastructure, standalone system shall be in adherence to TIA 942, Uptime Institute guidelines thus shall be composed of multiple active power and cooling distribution paths.

v. The Intelligent Integrated Infrastructure essentially includes internal redundant or backup power supplies, environmental controls (e.g., precision air conditioning, fire suppression, smoke detection, water leak detection, humidity sensor, intelligent

monitoring system, security devices, etc.) Air-conditioning system is to have 100 % reliability on 24 x 7 basis with a total cooling capacity of 30 KW and with adequate standby for system redundancy. **(Failure of any single unit; still to meet the total cooling requirement of 30 KW). Tenderer to provide proof for the technical basis on their redundancy assumption to achieve the uptime objective. The ambient temperature considered for the calculation of total tonnage requriement should be 45 Degrees** Adequate RAW power supply and earthing in the server room will be provided by the customer.

vi. The Intelligent Integrated Infrastructure would provide many functionalities and some of the key functionalities are cold and hot aisle; fire rated cabinet, insulation (room/rack), remote management and single point of service.

vii. Intelligent, Integrated Infrastructure Data Centre solution should utilize the approach to infrastructure design, an intelligent, Row/Rack-based cooling solution that simplifies infrastructure design, installation and management and optimizes the efficiency and reliability of data center/server room. By integrating UPS, power distribution, precision cooling and control technologies, it delivers industry best practices in data centre design to deliver an infrastructure.

viii. Smart Monitoring system – includes sensors like smoke detectors, water leak detection system, temperature & humidity sensor, door sensor, and alarm beacon & capable for Email and SMS alerts.

ix. The Tenderer is responsible for managing the entire project from commencement to the final handing over of the facility to THSTI. The Tenderer is required to provide detailed architectural diagrams and other illustrations like conceptual architectural plan, civil work details, electrical layouts and network cabling design layouts, 3D view of data centre etc., for the envisaged DC.

**2. Scope of Supply**

i. Designing of Modular and Integrated Data Centre Solution for 5 Server Racks & 30KW IT Load as per BoQ at THSTI, Faridabad.

**3. Scope of Installation, Configuration and Integration**

i. Physical installation and deployment of an Integrated Modular Data Centre Infrastructure Solution to cater 5 Server Racks & 30KW IT Load as per current/additional critical hardware and Networking devices.

ii. Proper marking of cable, Safety Sign board/Route marker to be installed for cable laid underground and other miscellaneous work.

iii. Any structure, permanent or temporary, dismantled or destroyed during the execution of the work shall, will be refill/remake or restore to its previous condition by the bidder at its own cost.

iv. Any extra electrical points required in the server room shall have to be provided by the network vendor at his own cost.

**4. Scope of Acceptance testing and commissioning**

i. After installation and configuration of each and every subsystem, integrating various systems and providing various services, tests shall be conducted for system performance as a whole.

ii. Commissioning shall mean end-to-end commissioning of the Data Center on turn key basis with testing of every subsystem. Test parameters, commitments etc shall be submitted along with implementation plan, which is shall be approved by THSTI.

iii. In the event, the test parameters, commitments are not submitted or not accepted explicitly in writing/minutes by THSTI, the Test parameters, commitments etc as decided by THSTI will be final and binding.

iv. Upon Self testing and Commissioning, the system shall be offered for inspection by THSTI.

v. The successful Bidder, along with THSTI shall prepare an inspection and acceptance schedule with details of each activity.

**5. Scope of Documentation**

i. Providing original manuals of all hardware items supplied.

ii. Implementation plan, to be approved by THSTI before initialising the installation and configuration activity.

iii. Test parameters, commitments etc for acceptance testing to be enclosed along with implementation plan.

iv. Operator manual for shutdown/start of the active resources.

v. Drawings and specifications for equipment:

a. Capacity data

b. Electrical data

c. Electrical connection drawing

d. Piping connection drawing

e. Bill of materials

f. Product catalog sheets or equipment brochures

g. Product guide specifications

h. Installation information, including, but not limited to, weights and dimensions.

i. Information about terminal locations for power and control connections.

j. Drawings for requested optional accessories.

k. Wiring diagrams (Lighting, Fire)

l. Installation manual

m. Operation and maintenance manual

n. Compliance statements

**6. <u>Scope of Services required during warranty and CMC period</u>**

The brief scope of services and obligations to be performed by the Tenderer notwithstanding to those mentioned in the periodic maintenance checklist/maintenance plan are the following.

i) Quarterly checking and servicing the entire data cente (Quarterly preventive maintenance)

ii) Attending to the service when called upon by the client within two hours.

iii) Repairing/overhauling the components of the equipment at site/in service station, including replacement of worn out parts when found necessary.

iv) Replenishing refrigerant required as a result of a leak in the system arising out of wear and tear.

v) Lubricating the bearings of motor, pumps and fans, when found necessary.

vi) Replacing of damaged electrical parts before restarting the system after break down.

vii) Quarterly inspecting belts, adjusting of tension and replacing worn out belts.

viii) Check control system and devices for evidence of improper operation. Repair, adjust or replace components to ensure proper operation.

ix) Check for proper operation of the cooling coil. Clean, restore or replace as required.

x) Check the motor contactor for pitting or other signs of damage. Repair or replace as needed.

xi) Check fan blades. Clean, repair or replace as needed.

xii) Check refrigerant system temperatures. If outside recommended levels, find cause, repair and adjust refrigerant to achieve optimal operating levels.

xiii) Check the integrity of all panels on equipment. Replace fasteners as needed to ensure proper integrity and fit finish of equipment.

xiv) Check drain pan, drain line and coil for biological growth. Clean as needed.

xv) Visually inspect areas of moisture accumulation for biological growth. If present, clean or disinfect as needed.

xvi) Check compressor oil level and or pressure on refrigerant systems having oil level and or pressure measurement means. Repair, replace or adjust as needed to ensure proper control.

xvii) Check for proper damper operation. Repair or replace as needed.

xviii)Check temperature transmitters for accuracy.

xix) Visually inspect exposed duct work and external piping for insulation and vapor barrier for integrity. Correct as needed.

xx) Visually inspect internally lined duct work until the first turn or up to 20 ft into the supply plenum from air system for integrity, and if soiled or degraded, correct.

xxi) Records are to be maintained for all the above tasks and submitted to clients as and when required.

## 7. Scope of Training

i. Practical Training of the Electrical, Civil and IT staff of THSTI should be given. The training should cover all the aspects of functioning, mainetenance and monitoring of the Data Center.

ii. Course material for the above (one copy each per participant) to be provided.

# PART- G: Format of Technical bid including Organisational capability

ATTACHMENT #1

**Form-1: Bid Submission Form** *(to be submitted on the letter head of the bidder)*

To,
The Executive Director,
Translational Health Science and Technology Institute,
NCR BIOTECH SCIENCE CLUSTER,
3rd Milestone, Faridabad-Gurgaon Expressway,
PO Box No. 04,
Faridabad - 121 001, Haryana (NCR Delhi), India
Phone: 91 129 2876432

**Subject:** Submission of bid for "Design, Supply, Installation, Integration, Testing, Commissioning, Training and Maintenance of Modular and Integrated Data Center Infrastructure".

Dear Madam,

We, the undersigned, offer to provide services to THSTI and RCB, NCR BIOTECH SCIENCE CLUSTER activities for implementation of Data Center Infrastructure in response to your notice inviting RFP dated……. We are hereby submitting our proposal, which includes all the relevant documents.

We hereby declare that all the information and statements made in this bid are true and accept that any misinterpretation contained in it may lead to our disqualification and rejection of the bid.

We also understand that you are not bound to accept any proposal you receive.

We also declare that in case of discontinuation of the offered product by the OEM, we will extend the full warrantee and maintenance as per the terms, conditions and price quoted by us in this bid. We also declare that after the expiry of CMC period we will be wilful to extend it for upto next 5 (Five) years on the mutually agreed terms, conditions and price. We also declare that the offered product is not an end-of-life product.

Yours faithfully,

Authorised signature (in full and initials) ……..……..

Name and designation of the signatory …… …… ……

Name of the Firm ……..

Business address ……..……..

Office seal……

Place……. Date ……..

ATTACHMENT #2

**Form-2: Certificate of Conformity**
*(to be submitted on the letter head of the bidder)*

To,
The Executive Director,
Translational Health Science and Technology Institute,
NCR BIOTECH SCIENCE CLUSTER,
3rd Milestone, Faridabad-Gurgaon Expressway,
PO Box No. 04,
Faridabad - 121 001
Haryana (NCR Delhi), India
Phone: 91 129 2876432

**CERTIFICATE**

This is to certify that the services for THSTI for "Design, Supply, Installation, Integration, Testing, Commissioning, Training and Maintenance of Modular and Integrated Data Center Infrastructure at THSTI, NCR-Biotech Cluster, Faridabad, Haryana" which I shall provide, if I am awarded with the work, are in conformity with the Scope of Work and Other Services mentioned in the RFP document.
This is also to declare that we have visited the proposed site for development of Data Center at THSTI, Faridabad and the queries asked by us during the visit were satisfactorily answered.

Yours faithfully,

Authorised signature *(in full and initials*) ……..

Name and designation of the signatory …… …… ……

……

Name of the Firm ……..

Business address ……..

Office seal…… Place……

Date ……..

ATTACHMENT #3

**Form-3: Manufacturer's/Developers/OEM Declaration**

*(to be submitted on the letter head of the Manufacturer's/Developers/OEM)*

**No._____** **dated _____**

To,

The Executive Director,
Translational Health Science and Technology Institute,
NCR BIOTECH SCIENCE CLUSTER,
3rd Milestone, Faridabad-Gurgaon Expressway,
PO Box No. 04,
Faridabad - 121 001
Haryana (NCR Delhi), India
Phone: 91 129 2876432

Subject: Declaration of service guarantee

Respected Sir/Mam,

We _____who are established and reputed developers/manufacturers of **Data Center solution**, having main unit/ Head Office at_____ Do hereby authorize M/s_____ (Name and address of the Agent/Dealer) to offer their quotation, negotiate and conclude the contract with you against the above invitation for tender offer. We hereby extend our full guarantee and warranty as per terms and conditions of the RFP and the contract for the equipment and services offered against this invitation for tender offer by the above firm. We also declare that the offered products are not an end-of-life products and the technologies used to create this product are not obsolete. We also declare that the service and spare parts of the offered product will be available in the market for minimum duration of 5 Years after the expiration of warranty period.

Yours faithfully

(Name)
For and on behalf of
M/s _____ (Name of Manufacturers)

## ATTACHMENT #4

Detailed Technical Proposal meeting the bid requirements covering detailed specifications should include

I. Make, model and part no. of items and sub-items quoted.
II. Detailed Description of Technical specifications
III. Detailed brochure with specifications for the offered items with model & part nos. highlighted.
IV. Relevant test certificates/performance certificate/End-user acceptance certificate of the offered components/ systems

## ATTACHMENT # 5

Any proposed deliverable/ functional aspects/ technical aspects/ terms/ conditions or any other item NOT IN compliance to tender Requirement

| Sl No | Section/ Page No. in tender | Sl.No. as in tender | Requirement as specified in tender | Deviation | Remarks/ Reasons /Alternatives |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |

## ATTACHMENT # 6

Detailed Project Schedule with clear timelines and milestones.

## ATTACHMENT # 7

Financial Bid with value/price information masked. Make, model, quantity etc of each of the line item with sub-items indicated.

## ATTACHMENT # 8

Facilities sought from THSTI

## ATTACHMENT # 9

Any other relevant matter.

## ATTACHMENT # 10

Heat Load, Tonnage and Redundancy Calculation Sheet for the offered solution

# PART – H: FINANCIAL BID FORMAT

## BOQ and Price Bid Format for Modular and Integrated Data Center Solution including Comprehensive on site warranty for 3 years for the complete system including all the accessories and materials.

| S.No. | Description | Offered Make* | Unit | Qty | Rate | GST | Amount |
|---|---|---|---|---|---|---|---|
| **1.** | SITC of Precision Air Conditioner 8.5 TR (30 KW) with adequate standby for system redundancy (After failure of any single unit, the total cooling requirement should meet) , DX based, including copper pipe with proper insulation, tray, armored cable between indoor and outdoor unit with complete accessories, plumbing work. Total load is important and tenderer can quote multiple units as per manufacturers units. | Rittal/Vertiv | Lot | 01 | | | |
| 2. | UPS 30 KVA including Installation, Testing, Commissioning in N+N redundancy | APC/Vertiv/Delta(Ultron) | No. | 02 | | | |
| 3. | Battery set with rack and interlinks for providing 15 Mins Power backup on full load. | Exide/Rocket / Amaron Quanta | No. | 01 | | | |
| 4. | Intelligent Data Center Infrastructure Remote Moitoring System (Software with perpectual license for software and hardware with accessories and | Rittal/Vertiv | Lot | 01 | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | cables) for triggering temperature, humidity, fan, compressor loerload, smoke and fire alerts/traps from UPS, PAC and Racks on Email and SMS. The system should be able to integrate all the important devices of Data Center and should give a single contol screen over HTTP. | | | | | | |
| 5. | Miscellaneous work like civil mason work, cable tray and rails for electrical and network cabling and other works required for proper functioning, aesthetics and durability of the DC infrastructure. | | Lot | 01 | | | |
| 6. | SITC of Fire Alarm, Fire Detection & Fire Suppression system with control panel (Novec, Vesda, Alarms,Panels, etc.) with required NOVAC 123 gas, nozzles, gas release panel etc. | | Lot | 01 | | | |
| 7. | Supply, Erection and commissioning of Fire Retardant Gypsum partition with fire rating of minimum 2 hour including 3ftX2ft fire retarded glass panel and painting. (Per Sq. Mtr price to be quoted) | India Gypsum/ LAfarge/ boral | $m^2$ | Say 35 | | | |
| 8. | 8FtX4Ft Fire Retardant Door with Door Frame and 2 way door closure | Godrej/Promat/Shaktimet door | No. | 02 | | | |
| 9. | SITC of Water Leakage Detection System with Panel and Sensors | | Lot | 01 | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 10. | SITC of Ultra modern sound based Rodent Repellent System | | No. | 02 | | | |
| 11. | Supply, Installation testing and commissioning of 42U-19" SERVER racks with shelf, cable manager & blanking panels; with rugged & light weight Aluminium body structure with glass door in front & rear non perforated door for effective air flow having a load bearing of >500KG's suited for BLADE chassis mountings with an earthing copper strip with insulators. This has to be kept together and PAC system to be integrated along with all acessories, cable manager vertical and horizontal (Mounting Hardware Packages) etc. required for the DC. Electromagnetic lock, Biometric Finger print sensor with software; PDU with input power cord and appropriate circuit breaker protection type Standard Rack PDU (Vertical) - with 24 sockets (20 IEC C13 & 4 IEC C19)-02 Nos. for each Rack with 2.5 mtr. power chord (each rack having two PDU's).[Rack size:600 mm X1000 mm -4 nos &800 mm X 1000 mm -1no] | Rittal/Vertiv | No. | 05 | | | |
| 12. | **Buyback** – (3 numbers of 42U rack with front glass door, three metal doors, 2 -PDU and tray with 4 fans) and (1 number of 42U rack with front perforated door, three metal doors, 2 -PDU and tray with 4 fans) - **Negative Value** | | No. | 04 | | | |

| | | Rate | GST | Amount |
|---|---|---|---|---|
| 14. | After warranty, First year CMC for complete Data Center including all the accessories and materials. | | | |
| 15. | After warranty, Second year CMC for complete Data Center including all the accessories and materials | | | |
| | **GRAND TOTAL (In Numbers)** | | | |
| | **GRAND TOTAL (In Words)** | | | |
| **Items to be quoted seperately ( Not to be included for price bid evaluation)** | | | | |
| | Third Term CMC (Quote Separately) | | | |
| | Fourth Term CMC (Quote Separately) | | | |
| | Fifth Term CMC (Quote Separately) | | | |

***NOTE: Wherever applicable, the bidder has to clearly mention the MAKE of the item in the appropriate coloumn.**

# PART- I: ANNEXURES

ANNEXURE-I

**CHECK LIST**

| Sl. No | Description | Included (Y/N/NA) | Remarks |
|---|---|---|---|
| 1 | Technical bid should contain copy of EMD of Rs. 1, 10,000/- (One Lakh Ten Thousand only) in the form of DD. The original Demand Draft should reach the THSTI office on or before the due date of opening of technical bid. | | |
| 2 | Technical bid should contain all information as in the Financial bid, except for the price information. The split-up part numbers of each line item of the BoQ should be present. | | |
| 3 | Certificate for proving that the Bidder is OEM or Authorised dealer / Distributor / System integrator to be uploaded along with technical bid. | | |
| 4 | Detailed Diagrams / Solution document / Data Sheets of the offered system attached in the technical bid. | | |
| 5 | Technical Bid and Financial bid are to be uploaded separately. | | |
| 6 | A copy of the tender document, with all pages signed by the authorized person is to be uploaded along with the technical bid. | | |
| 7 | Complete BoQ is quoted. | | |
| 8 | Financial bid should contain full price details including taxes. | | |
| 9 | Split-up part numbers of each item of the BOQ is to be shown in the financial bid with line item cost. | | |
| 10 | All ATTACHMENTS from 1 to 10 | | |

Annexure - II

**Form of Performance Bank Guarantee/Bank Guarantee**

BG No…… Date…….

| From | To |
|---|---|
| The Name of the Bank | Translational Health Science Technology Institute, NCR-BSC, 3rd Milestone, PO Box No. 04, Faridabad-Gurgaon Expressway, Faridabad - 121001 |

In consideration of the Translational Health Science and Technology Institute, 3rd Milestone, PO Box No. 04, Faridabad-Gurgaon Expressway, Faridabad - 121001 (hereinafter called "The INSTITUTE") having offered to accept the terms and conditions of the proposed agreement between The Institute……and…… (hereinafter called "the Contractor(s)"for the work……. (hereinafter called "the said agreement'') having agreed to production of an irrevocable Bank guarantee for Rs…… (Rupees…….only) as a security/guarantee form the contractor(s) for compliance of his obligations in accordance with the terms and conditions in the said agreement.

1. We …….. (hereinafter referred to as the ''Bank'') hereby undertake to (Indicate the name of the Bank) Pay to the Institute an amount not exceeding Rs…… (Rupees…… only) on demand.

2. We… (indicate the name of the Bank) ……. Do hereby undertake to pay the amounts due and payable under this Guarantee without any demur, merely on a demand from the Institute stating that the amount claimed is required to meet the recoveries due or likely to be due from the said contractor(s). Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs…… (Rupees……only).

3. We, The said Bank, further undertake to pay to the Institute any money so demanded notwithstanding any disputes raised by the contractor(s) in any suit or proceeding pending before any Court or Tribunal relating thereto, our liability under this present being absolute and unequivocal. The payment so made by us under this bond shall be a valid discharge of our liability for payment thereunder, and the contractor(s) shall have no claim against us for making such payment.
4. We (indicate the name of the Bank) …… further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement, and it shall continue to be enforceable till all the dues

of the Institute under or by virtue of the said agreement have been fully paid, and its claims satisfied or discharged, as per the terms and conditions of the said agreement have been fully and properly carried out by the said contractor(s), and accordingly discharges this guarantee.

5. We……(name of the bank)…… further agree with the Institute that the Institute shall have the fullest liberty without our consent, and without effecting in any manner our obligations hereunder, to vary any of the terms and conditions of the said agreement or to extend time of performance by the said contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the Institute against the said contractor(s), and to forbear or enforce any of the terms and conditions relating to the said agreement, and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said not be relieved from our liability by reason of any such variation or extension being granted to the said contractor(s) or for any forbearance, act of omission on the part of the Institute or any indulgence by the Institute to the said contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

6. This Guarantee will not be discharged due to the change in the constitution of the Bank or the contractor(s).

7. We ……(Name of the bank)……. lastly under take not to revoke the Guarantee except with the previous consent of the Institute in writing. This bank Guarantee on the Bank or its successors or permitted assigns.
8. We……(Indicate the name of the Bank)…… lastly undertake not to revoke this Guarantee except with (indicate the name of the Bank) the previous consent of the Institute extended on demand by the Institute. Notwithstanding anything mentioned above, our liability against this Guarantee is restricted to Rs…….(Rupees……..only), and unless a claim/demand is made on the bank in writing on or before ……all your rights under the Guarantee will be forfeited and we shall be relieved and discharged from all liabilities thereunder.

Authorised Signatories of the Bank with name and Seal

Name of the Officer:

Designation:

Code if any:

Date:

Place

# Guidelines to bidders on CPPP e-Procurement Module

1. **Procedure for Registration by the Bidder**

1.1. Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL: https://eprocure.gov.in/eprocure/app) by clicking on the link "Click here to Enroll" on the CPP Portal.

1.2. As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.

1.3. Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.

1.4. Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / TCS / nCode / eMudhra etc.), with their profile.

1.5. Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSC's to others which may lead to misuse.

1.6. Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / e-Token.

2. **Searching for Tender Documents**

2.1. There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, organization name, location, date, value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as organization name, form of contract, location, date, other keywords etc. to search for a tender published on the CPP Portal.

2.2. Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the CPP Portal to intimate the

bidders through SMS/e-mail in case there is any corrigendum issued to the tender document.

2.3. The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

3. **Procedure for preparation and submission of bids**

3.1. The documents should be page numbered and contain the list of contents with page numbers. The deficiency in documentation may result in the rejection of the Bid.

3.2. Bidder should take into account any corrigendum published (if any) on the tender document before submitting their bids.

3.3. Bidders are advised to go through the Tender advertisement and the Tender document arefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.

3.4. Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF formats. Bid documents may be scanned with 100 dpi.

3.5. To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use "My Space" area available to them to upload such documents. These documents may be directly submitted from the "My Space" area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

3.6. As part of the bid, bidder should provide all the documents as follows: -

- Bidder should log into the site well in advance for bid submission so that he/she upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
- The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.

- The serve time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
- All the documents being submitted by the bidders would be encrypted to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done.
- The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- Upon the successful and timely submission of bids, the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.
- The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meetings.

**4. Assistance to Bidders**

Any queries relating to the NIT document and the terms and conditions contained therein should be addressed to the Section Officer (S&P), Translational Health Science and Technology Institute, Faridabad-121001, Telephone Number: 0129-2876432, 300

Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk. The contact number for the helpdesk is 1800 3070 2232.