

**TENDER FOR OPERATION AND MAINTENANCE OF HVAC SYSTEMS AT ICTS
SURVEY NO. 151, SHIVAKOTE VILLAGE, HESARAGHATTA HOBLI, BANGALORE NORTH**

Online item rate tender in two parts i.e. Part A –Techno-commercial Bid and Part B – Financial Bid are hereby invited through GeM portal by the Administrative Officer, ICTS - TIFR from experienced HVAC maintenance contractors for operation and maintenance of 4 x 120 TR HVAC plant with associated equipment, Water-cooled & Air-cooled split AC, and General HVAC systems. Agency/Contractor who has done similar type of work of AMC nature with proven technical and financial capacity, possessing required infrastructure for the above work only will be considered.

Item Description	Operation and Maintenance of HVAC Systems at ICTS
Estimated Cost	Rs. 43.28 Lakhs
EMD Amount	Rs. 86,000/-
Pre-bid Meeting Date	The contractors are requested to send their Pre-bid queries by email not later than 02.01.2024 . Compulsory Pre-Bid meeting along with Site Visit will be held on 03.01.2024 at 11.30 Hrs at ICTS. The Pre-Bid clarifications will be uploaded on the ICTS website by 04.01.2024 .
Period of Work Completion	1 + 2 Years (12 + 24 months)
Dates of availability of tender documents for download	From 20.12.2023 to 11.01.2024 To Download – please visit GeM portal Detailed Tender document is also available on website www.icts.res.in/tenders for view only.
Start date and time of online submission of tenders	05.01.2024 (10.00 Hrs)
Last Date For Submission of Tender	11.01.2024 (15.00 Hrs)
Date and time of online bid opening of Part A i.e. Technical Bid	12.01.2024 (15.00 Hrs)
Date of opening of Part B i.e. Financial Bid	Will be notified later

Note: Earnest Money Deposit in original to be submitted preferably in form of Fixed Deposit Receipt or in the form of Demand Draft / Banker's Cheque /Pay Order of a Scheduled Bank, issued in favour of, International Centre for Theoretical Sciences, Bangalore.

THE CENTRE RESERVES THE RIGHT to verify the particulars furnished by the applicant independently and accept/ reject the tender without assigning any reason thereof. Shortlisting of the agencies shall be subject to thorough verification of their credentials and inspection of works carried out by them, through a Technical Evaluation Committee of experts, constituted by ICTS. The Centre reserves the right to split the order based on the technical evaluation.

IF ANY INFORMATION FURNISHED by the applicant is found to be incorrect at a later stage, they shall be liable to be debarred from tendering/taking up work in ICTS.

All the intending contractors are urged to visit the ICTS Campus, in order to have a clear idea and to see the area of work and have discussions before submitting the bids.

Information to Bidders:

1. Tender document is prepared in two parts viz. Part 'A' (Techno-commercial Bid) and Part 'B'(Financial Bid).

Part 'A' consists of Techno-commercial Bid viz. Annexure – A – Scope of work & Tentative Guidelines for the Work Involved in the Scope and List of Equipment, Annexure – B – General Terms and conditions, Annexure – C – Schedule of Deviations, Annexure – D – Statutory Obligation, Annexure – E – Undertaking from the contractor, Annexure – F – Schedule of Quantities.

Part 'B' (Financial bid) consists of Schedule 'B' - Bill of Quantities.

All the above documents will form part of Agreement after award of work to the successful bidder.

OBTAINING OF STANDARD DOCUMENTS: Prospective Bidders or general public can see and download free of cost **PDF format** of the above documents from website www.icts.res.in/tenders

Technical Bid shall contain the following documents:

1. Bid Securing Declaration in lieu of Earnest Money Deposit. In lieu of EMD, the bidder shall submit “Bid Securing Declaration” as per the format in Annexure F. The declaration should be submitted on the company letter head duly signed by the officer authorized to submit the bid
2. Entire tender document (Inclusive of Annexure-A to Annexure-F), duly signed & sealed on every page by the contractor, along with technical information.
3. Any deviations from the tender conditions in Annexure -C.
4. Reference of similar completed & ongoing works with proof in the form of up to 3 major work orders of the highest value for the last 3 years.
5. Confirmation that Schedule I & II (Annexure G) is completely filled and kept in price bid.
6. Valid labour license to undertake HVAC AMC works.
7. PF, ESI registration copies.
8. PAN Card and Service Tax Registration Certificate.
9. Latest solvency certificate issued by the Bank.
10. Financial statements for the last three years and turn over details.
11. Organisation details, proprietorship/ownership details along with details of organization staff Matrix.
12. Major client list where HVAC maintenance works were carried out in the last 3 years with their address, contact person/s name and contact details.

QUALIFYING REQUIREMENTS AND TENDER EVALUATION**1. Qualifying requirements:**

The bidder shall meet all the following minimum prerequisites and provide i.e. upload documentary proof for the same in the ‘technical bid’;

1. HVAC AMC work experience of at least one work of minimum WO value of Rs. 35.00 Lakhs OR 2 works of minimum WO value of Rs. 26.00 Lakhs each OR 3 works of minimum WO value of Rs. 17 Lakhs each (annual cost), in the last 3 years. A tolerance of 5% is allowed on the WO value to take care of marginal short falls.
2. Valid Registration Certificate of the Firm and Contractor license.
3. The bidder should have an office at Bangalore.
4. Shall have adequate technical manpower on its rolls in the form of supervisors, highly skilled, skilled & unskilled staff. The details on the type of organization (i.e., sole-proprietor or partnership or company), organization matrix etc. shall be provided.
5. PAN CARD
6. GST Registration Certificate.
7. Registration for ESIC and PF/PPF (statutory requirements)
8. Average turnover for the previous year shall be at least 60% or more of the estimated cost. **The financial statements for the last three years of the company shall be uploaded.**
9. Latest Solvency certificate issued by the bank for at least Rs. 11 Lakhs.

10. The bidders should have at least 3 years of experience in erection, commissioning, operation and maintenance of a >450Tr capacity HVAC system through BMS. Proof for the same in the form of a work certificate shall be enclosed.
11. Performance certificate issued by clients for the services rendered by the bidder.
12. List of clients with their address and details of contact person/s along with their contact details like telephone, e-mail address etc.
13. Any other document proving the credentials and suitability for the HVAC AMC work.

2. Vendor and Bid Evaluation

The Vendors and their bids will be evaluated as per the table given below. All the pre-qualification requirements indicated above will be checked. Depending upon the vendors meeting all the basic prerequisites, their bid will be further evaluated on the 'marks based' system given in the table below. The vendors/bids **scoring 70 or more marks** will be considered for the 'price bid' opening.

NOTE:

1. The vendor shall score a minimum of 70 marks in the evaluation for qualifying for 'price bid opening'. The pre-qualification checks & marks evaluation pattern is given below.
2. Among the price bids opened, the lowest offer will be considered for further processing. No additional weightage will be given for the marks scored in excess of 70.
3. ICTS reserves the right to rearrange the pattern of marks for evaluation and revise the ceiling of qualifying marks as deemed fit in the given situation. The decision of ICTS will be final and binding on all. The aim is to have sufficient proposals to compare, in the event of fewer than 3 vendors scoring 70 & above.
4. Issuance of tender documents shall not automatically imply qualification of the firm for bidding, which shall be determined during bid evaluation.
5. ICTS reserves the right not to accept the lowest rate quoted by a bidder and may reject any or all the tenders without assigning any reason whatsoever.
6. Any addendum/corrigendum/extension, if required, pertaining to the NIT will be posted on the ICTS website. Bidders are requested to visit the ICTS website regularly for any addendum/ corrigendum/ extension, till the opening of the bid.
7. If the last date of sale of tender or date of submission of tender is declared as a holiday, the due dates will be the next working day accordingly.
8. All legal suits arising out of the enquiry and subsequent letter of intent/work order, if any, are subject to jurisdiction in the Court of Law of City of Bangalore, India and no other court.

Sl No.	Particulars		Rating
1.	Pre-Qualification Checklist- Vendor to qualify in all the prerequisites with sufficient proof (Yes/No)		
I	1	Valid Registration Certificate of the Firm and Contractor license.	Y/N
	2	PAN CARD / GST Registration Certificate.	Y/N
	3	Latest Solvency certificate issued by the bank not before 01 Feb 2021	Y/N
	4	Financial Statements of the last 3 financial years.	Y/N
	5	Registration for ESIC and PF/PPF (statutory requirements)	Y/N
	6	Acceptance of all terms and conditions - tender document duly signed on all pages (Annexures should be duly filled and signed)	Y/N
	7	Any technical deviation indicated? If so, are they acceptable to ICTS?	Y/N
	8	EMD enclosed?	Y/N
	9	Does the vendor meet the previous minimum work experience criteria?	Y/N
	10	Does the bidder have an office in Bangalore?	Y/N
	11	Does the manpower deployment meet the minimum requirement indicated?	Y/N
	12	Has the 'Undertaking Form' (Annexure-E) been duly filled and signed?	Y/N
	13	Any special Information or conditions indicated by the firm? If so, are they acceptable to ICTS?	Y/N
	14	Does the firm meet all the above minimum criteria to evaluate further?	Y/N

2.	Evaluation of Vendor- Agencies fulfilling minimum criteria will be given minimum marks. The highest among the available bidders will be given maximum marks and the rest will be given pro-rata marks.	Min Marks	Max Marks
I	Attended the pre-bid meeting? (Indicates seriousness & interest shown in understanding the Institute's requirements/the scope of work)	0	10
II	The contractor should have a minimum of 5 years of experience in AMC of HVAC Systems in Government / Semi-Government / Private Institutions.	10	20
III	Financial performance: Minimum Annual turnover of the previous year shall be at least 60% of the estimated cost.	20	20
IV	Contractor should have minimum work experience of one work of minimum WO value of Rs. 45.00 Lakhs OR 2 works of minimum WO value of Rs. 34.00 Lakhs each OR 3 works of minimum WO value of Rs.23.00 Lakhs each (annual cost), in the last 3 years, for AMC of HVAC systems in Government / Semi-Government / Private firms.	20	30
V	Minimum two Performance Certificates from their clients.	10	10
VI	Is the Proposed Qualified technical staff pattern matching the minimum as prescribed in the tender conditions?	10	10
	Total	70	100

Operation and Maintenance of HVAC Systems at ICTS Campus.

1. Scope of Contract

1.1 The Contractor will provide services at International Centre for Theoretical Sciences, Shivakote, Hesarahatta Bangalore.

Annexure – A – Scope of work & Tentative Guidelines for the Work Involved in the Scope and List of Equipment

Annexure – B – General Terms and conditions.

Annexure – C – Schedule of Deviations

Annexure – D – Statutory Obligation.

Annexure – E – Undertaking from the contractor

Annexure – F – Schedule of Quantities

1.2 The details of rates and the number of personnel required for carrying out the work shall be indicated by the Contractor in Annexure “B”.

1.3 Once the Work Order is issued, the Contractor will receive instructions from an Officer designated for this purpose (Officer-in-Charge) or his authorized nominee and the Contractor hereby undertakes to abide by his/her suggestions/instructions, etc. as regards services covered in this contract.

1.4 Addition/ alterations in the scope of work: Any alterations or additions to the scope of work will be communicated to the Contractor and the Contractor shall carry them out. For any reduction/increase in the Scope of work, the increase/decrease in the rates shall be negotiated and finalized on a mutually agreed basis.

2. Quality and scope of services

2.1 The Contractor shall appoint trained staff having a good bearing and maintain high standards of turn out, maintain adequate staff to ensure there is no hold up of any service for any reason whatsoever. Any deficiency in the number of staff deployed will entail penal reduction from the compensation payable as decided by the Centre. The successful Contractor as soon as the agreement is signed shall submit a list of their workmen/supervisor/others along with a copy of the appointment order issued to them. As and when there is a change in the staff posted, a revised list shall be submitted along with a copy of the appointment order issued to the new appointee/appointees, simultaneously.

2.2 It is normally understood and agreed between both the parties that the Centre will not be responsible or be liable for any laws that are in force / that may come into force from time to time in respect of personnel engaged by the Contractor and he will be solely responsible for the terms and conditions of their services, safety, health, statutory requirement, etc.

2.3 The Contractor shall depute such officers and supervisors as proposed by him, who shall be available on-site to supervise the Contract employees and interact on a daily basis with Officer-in-Charge regarding delivering the specified services.

2.4 It is understood and agreed that the Contractor will be held responsible for any disciplinary matters arising out of their employees and the Contractor will take appropriate disciplinary action against those employees found indulging in any act of indiscipline in Center’s premises or in connection with the services referred to herein.

2.5 The Contractor will immediately replace any employee found to be unfit in any manner immediately or on receipt of advice from any authorized person in ICTS.

2.6 The Contractor shall maintain a proper and detailed record for the job carried out by their employees and shall also maintain all records and returns as necessary for carrying out the work smoothly and as provided under the Contract Labour Act, Minimum Wages Act, ESI Act, PF Act, etc, as relevant and applicable from time to time.

2.7 The Contractor shall be solely responsible to comply with all legal and statutory requirements that arise out of this agreement and in respect of the employees engaged by the Contractor in fulfilment of the contractual obligations stated herein. An indicative list of these statutory obligations is at Annexure "D". It is understood and agreed that the Contractor will provide suitable uniforms with company insignia, badges/ID cards with photos and safety equipment and shoes to their employees. It is the Contractor's responsibility to have them **periodically checked medically** so as to ensure that medically fit staff only is deployed for the work.

2.8 a) The Contract employees should be covered under all statutory requirements like ESI, PF, ELI etc. by the Contractor and the Contractor shall comply with all the formalities in this regard. Copy of challan and Schedule of Contract Employees for payment of ESI/PF/ELI, etc. to be furnished (whether running/monthly or final) by the contractor for reimbursing the same every month.

b) The Contractor shall pay salary and other allowances/benefits as indicated by the Contractor in their tender and accepted by ICTS. Such salary shall be equal to or more than minimum wages. The VDA amendment from time to time should be paid as and when revised.

c) The Centre will have the right to inspect/call for books/registers, documents in relation to all matters referred to, in this tender or agreed later on. The Centre will also have all rights to make recoveries from the compensation if any, that any statutory agency imposes upon the Centre due to the Contractor's non-compliance with statutory obligations. A list of these as applicable at present is set out in Annexure 'D' attached. All the Contract employees should be covered under all statutory requirements like ESI, PF, etc. by the Contractor and the Contractor shall comply with all the formalities in this regard. Copy of challan and Schedule of Contract Employees for payment of ESI/PF/ELI, etc. will be furnished by the contractor for reimbursement.

d) The contractor shall maintain a muster roll, wages register of all men employed by them and all other documents and submit it to the Centre on the 1st of every month for the previous month or as necessary for inspection. The Contractor shall provide all facilities for inspection /books/personnel on demand by ICTS or any Statutory Authority.

e) The contractor should provide PF A/c number, ESI Card and Photo Identity Card to the contract employees posted at ICTS. This should be done **immediately** but not later than 15 days from the date of signing the joint agreement.

2.9 It is clearly understood and agreed upon that neither the Contractor nor Contract employees shall have any claim on employment with Centre at any point of time and this arrangement is purely between the Contractor and the Centre for specific services for the period specified.

2.10 The successful Contractor shall indemnify/deemed to have indemnified the Centre for all claims/losses arising out of this tender. The Contractor is deemed to have indemnified the Centre against any claim by any authority once the work order is awarded. In the event the Centre has to pay any individual, statutory body or any agency for reasons directly or indirectly attributable to this tender, the Contractor only shall pay such claim/damages and even if the Centre is called upon to pay, such damages/penalties and or cost shall be recovered from the contractor's dues /amount payable or shall be paid by the Contractor on demand from ICTS.

2.11 The Contractor shall follow all rules as may be existing or may be framed from time to time at ICTS on all aspects covering this tender. Material movement, entry/exit of personnel, identity card, safety, etc. shall be according to procedures existing in ICTS as amended from time to time.

2.12 **Bid Validity:** The rates quoted shall remain valid for a period of 180 days from the date of opening of Price Bids.

3. Tenure & Termination

3.1 The contract with the Centre will be initially for a period of 12 months and if the services are found to be satisfactory, the contract may be extended for a further period of **two more years (one year at a time) on the same terms and conditions**. The Centre reserves the right to terminate the Contract during the pendency of the Contract period if the performance is found unsatisfactory.

3.2 Except as provided in Clause 3.6 below, the Contract could be terminated by either side by giving one month's notice in writing. If the notice period is not given or if shorter notice is given by the Contractor, the entire security deposit would be forfeited. Any other costs and/or damages incurred by the Centre to maintain the services contracted to the Contractor, on account of such short notice will be deducted from the dues payable to the Contractor or shall be paid by the Contractor on demand if such dues fall short of such costs.

3.3 In the case of failure to complete the contract in terms of such contracts within the contract period specified in the tender and incorporated in the contract and if such work is got done by the Centre from any party at a higher rate the Contractor shall be liable to pay the Centre the difference between existing rate and the rate of the new Contract.

3.4 Risk Clause: Notwithstanding the other terms therein, the Centre at its option will be entitled to terminate the contract and to avail service from elsewhere at the risk and cost of contractor either the whole of the contract or any part which the contractor has failed to perform in the opinion of the Centre within the time stipulated or if the same performance is not available, the best and the nearest available substitute thereof. The contractor shall be liable for any loss which the Centre may sustain by reason of such risk in addition to the penalty.

3.5 Insolvency and breach of contract: The Centre may, at any time, by notice in writing summarily terminate the contract without compensation to the Contractor in any of the following events:

(a) If the Contractor being an individual or a firm if any partner in the contractor's firm shall be adjudged insolvent or shall have a receiving order or order for the administration of his estate made against him or shall take any proceedings for liquidation or composition under any insolvency act for the time being in force or make any conveyance or assignment of his effects or enter into an arrangement or composition with his creditors or suspend payment, or if the firm be dissolved under the Partnership Act, or

(b) If the contractor being a company shall pass a resolution or the court shall make an order for the liquidation of its affairs or a receiver or manager on behalf of the debenture holders shall be appointed or circumstance shall have arisen which entitle the court or debenture holders to appoint a receiver or manager, or

(c) If the contractor commits any breach of contract not herein specifically provided always that such determination shall not prejudice any right of action or remedy which shall have then accrued or shall accrue thereafter to the Centre provided also that the contractor shall be liable to pay the Centre for any extra expenditure he is thereby put to but shall not be entitled to any gain on re-tender.

(d) In the event of inadequate or unsatisfactory performance of duties by the Contractor, the Centre shall have the right to bring to the notice of the Contractor the default (s) on their part and the Contractor shall ensure that the said default (s) is/are not repeated and/or are duly remedied, within a period of three days from the receipt of the said notice. Failing such remedial action, or in the event of the said default(s) being inadequately corrected, the Centre shall have the right to immediately terminate the agreement.

3.6 Notwithstanding any other clause herein, if there is any act or omission by the Contractor or the Contract employees which jeopardizes the safety/security of the Centre including, but not limited to :

- a) Theft or pilferage of property of ICTS
- b) Fire, flooding, breakage or damage
- c) Violence or physical attack on the Campus
- d) Any act or incident which may prove detrimental to the interests of ICTS -

the contract would be terminated without any notice. Further, the Contractor would be levied penalties, as found appropriate by the deemed authority. The decision of the Centre Director shall be final in such matters.

4. Payment Terms:

4.1.1 The contractor shall submit bills after the completion of every calendar month and normally payment will be released within 15 working days from the date of submission of the bill if the bill is complete and correct in all respects and in accordance with the terms and conditions of the contract. All payments will be made after deduction of taxes and duties at source as applicable from time to time.

4.1.2 The monthly bills submitted by the contractor shall be only for actual salary, uniform content and margin. The other benefits like PF, ESI, ELI, S.T etc., can be claimed every month separately with proof of documents and the same will be reimbursed. The contractor will not be entitled for any of the above benefits.

4.1.3 PF, ESI and ELI will be reimbursed to the contractor only on production of registration No./ ESI card/ payment of ELI premium.

4.1.4 **Bonus:** Bonus shall be payable by the contractor to his contract employees monthly or once in a year before Diwali or when a contract employee's service is discontinued. The amount of bonus payable is 8.33 % subject to a maximum of Rs. 6,999/- per annum.

4.1.5 **Leave Wages :** Maximum of 6% and ½ reliever charges as applicable shall be paid as quoted.

4.1.6 The monthly running bill of the Contractor will become payable at the end of each month on submission of a monthly claim to the Accounts Officer, and on due certification by the Engineer-in-Charge of satisfactory

services against the claim. The Contractor's payment will be released only after disbursing the salary to contract employees every month.

4.1.7 The Engineer-in-Charge is authorized to deduct any amounts as determined by the Centre Director from the amounts due to the Contractor for any deficiency in services, provided by the Contractor.

4.1.8 Payments to the contract employees shall be transferred to the bank accounts of the **contract employees' by the 7th of the succeeding month**. The Contractor shall notify all his employees/workers of this date in their appointment order, and follow this very strictly, whether the Centre has paid the Contractor's bill or not. The proof of payment of salary and all other benefits such as bonus and overtime to the contract employees shall be submitted to accounts along with the monthly bills.

4.1.9 No claims will be entertained in respect of any discrepancy or defect or short claim if such demand is not made within 90 days of payment of the final bill.

4.2 Security Deposit:

The person/persons whose tender(s) may be accepted shall permit ICTS at the time of making any payment to him for work done under the contract to deduct a sum at the rate of 3% of the gross amount of each running bill till the sum along with the sum already deposited as earnest money, will amount to a security deposit of 3% of the tendered value of the work. Such deductions will be made and held by ICTS by way of Security Deposit unless he/they has/have deposited the amount of Security at the rate mentioned above. Alternatively, a Bank Guarantee from a Commercial Bank for 3% of the contract value may be furnished for the period of agreement with a 3 months grace period.

Security Deposit will be released only after the completion of the defect liability period of 3 months after the date of completion of the contract.

Security Deposit will not be refunded till a clearance certificate from the labour officer is obtained by the Contractor. However, if there is genuine difficulty to obtain a clearance certificate, the Engineer – In – Charge will make a reference to the Labour Officer before releasing the Security Deposit. If no reply is received within a reasonable period, say 1 month from the date of such reference then Engineer-In-Charge may make his decision to release based on his discretion.

4.3 It is important for the Contractor to note that the rate quoted shall be inclusive of all taxes and duties/escalation and shall remain valid for the period of the agreement, i.e. 3 years from the date of Work Order. Any increase or decrease in the rates shall be only in respect of statutory duties/levies and such claims shall be valid only with adequate documentary evidence. Any decrease in the duties/levies during the period of agreement, shall entail corresponding reduction in the contract amount. If no details or break-up of taxes, duties/levies, etc. are indicated, it will be assumed that the quote submitted is inclusive of all taxes/levies/duties, etc.

4.4 The Contractor shall pay any claim made by the Centre for any deficiency (both tangible and intangible) in service. Such an amount may also be deducted from bills payable to the Contractor. It may be noted that the Centre shall have the right to forfeit the Security Deposit in full or part for any due/damages caused by the

Contractor. If the Security Deposit or outstanding bills of the Contractor is found inadequate, then such monetary recoveries shall be effected from any amount payable to the Contractor against this or any other contract until the dues of the Centre are fully settled. If the claim of the Centre could not be met in this manner, the Contractor shall pay up all such claims if a demand is made by ICTS.

5. Safety, Security and Insurance

5.1 The Contractor shall follow all security rules of the Centre and instructions received from time to time regarding personnel, identity cards, material movement, etc, of the Contractor.

5.2 During the pendency of the agreement, the contractor shall be liable fully to compensate all concerned for any loss, damage of construction of works, construction, plant & machinery, person, property, etc. including third party risks arising due to causes attributable to the agreement. The decision of the Centre Director will be final & will be binding on both parties.

5.3 The contractor shall take Employees Liability Insurance of prescribed value for their employees. It must adequately cover all employees/workers under Workmen Compensation Act, 1928 as amended from time to time.

6. Miscellaneous

6.1 The work mentioned in the schedule is only indicative. The Centre reserves the right to increase or decrease the quantum of work. The contractor shall execute the work on the same terms and conditions and rates throughout the period of agreement.

6.2 The contractor or his supervisor shall meet the designated Officer of the Centre every day to receive the details of issues / complaints to be attended and after attending to these complaints, a report on the same has to be submitted to the concerned Officer.

7. Dispute and Resolution

7.1 Any dispute or differences that may arise between the parties shall be referred to the sole arbitration of the Centre Director or his nominees and the Contractor shall have no right to object to the appointment of the Director or his nominee as the sole arbitrator. The decision of the arbitrator shall be final and binding on the parties. The venue for arbitration shall be Bangalore and no other place. 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.

8. Primacy of Documents

The tender documents, subsequent communication exchanged, the work order and all annexures shall be part and parcel of this agreement. If there is any discrepancy between the above documents, following order of primacy will apply: any communication issued after the work order, any pre-order correspondence as accepted jointly, followed by work order, tender documents and annexures thereof, i.e. tender documents and annexures have least primacy.

9. Amendments to Work Order / Agreement:

Any amendment to the Work Order/agreement shall be valid only if both parties have agreed to such amendment(s) in writing duly authenticated by authorized personnel of both parties.

For and on behalf of International Centre for Theoretical Sciences

Administrative Officer

ANNEXURE - A**SCOPE OF WORK****Scope of Work For Operation and Maintenance of HVAC, Building Management System(BMS), at ICTS-TIFR, Bangalore**

ICTS is a leading international theoretical research center and has various air-conditioned facilities. Air conditioning is an extremely essential parameter for various programs/seminars/lectures and research activities.

Therefore, the essence of this contract is to achieve a 'Zero Breakdown' and maintain the system in such a way that it is always normal, available, and can be used for optimum performance. To achieve this all efforts should be made to keep up with the latest maintenance, using predictive and proactive maintenance techniques from time to time, and, by strictly following preventive maintenance practices and schedules.

Only air conditioning contractors with proven track record and confidence in carrying out this work are eligible to compete in this tender and only such firms will be considered for the contract. Please attach supporting documents like operation & maintenance track records etc.

The contractors will hire and deploy technical staff on a daily basis who have practical experience in the maintenance and troubleshooting of AC systems to meet requirements like ours. That's why supervisors engaged /Technicians will have the ability to read diagrams of AC systems, understand the requirement, and provide hassle-free maintenance.

SCOPE OF WORK**1) OPERATION AND MAINTENANCE OF THE CHILLER PLANT AND BUILDING MANAGEMENT SYSTEM AT THE ICTS CAMPUS.**

Round-the-clock operation and maintenance of the chiller plant. This job includes Round clock Chiller operation 4X120TR water-cooled screw chillers in the ICTS utility block along with 4 nos of cooling towers and 16 nos. Pumps. Changing over chillers as and when required. The scope also covers taking the reading of various chillers, pump parameters, and data-center important loads, and recording it in log books.

Round-the-clock operation and maintenance of Building Management Systems(BMS) of the Entire HVAC system which includes BMS controller, control wiring, Actuator valve of equipment, Sensors, Detector Motorized valve, Power Supply unit, VFD configuration/integration, DDC Panel, PLC SCADA device, Terminal box, Integration with motor starter, Thermostat sensor.

The preventive maintenance of the DDC panels will be done during the routine quarterly maintenance of the Air handling units to which the DDCs are connected. The scope also includes relocating and programming of DDCs as and when required.

Daily - 24/7 hrs (3 shift basis)

2) OPERATION AND MAINTENANCE OF WATER-COOLED AIR-HANDLING UNITS, WALL-MOUNTED FAN COIL UNITS (HI- WALL FCU), CEILING-SUSPENDED FAN COIL UNITS (CASSETTE FCU) & CEILING SUSPENDED AIR HANDLING UNITS (CSU) AT ICTS CAMPUS.

This job includes day-to-day operations, troubleshooting, preventive, breakdown, and periodic maintenance of 8 Nos AHU, 3 Nos. of CSU, 144 Nos of wall mounted FCU (Hi-wall FCU), and 25 Nos. Ceiling Suspended FCU(Cassette FCU) also includes minor modification works of AHU, CSU, and FCU systems in labs, data centers, lecture halls, and other facilities in the ICTS Campus as and when required. The scope also includes measuring air flow, temperature reading, RH, and all other working parameters and recording in the given maintenance logs.

Daily – General shift

3) OPERATION AND MAINTENANCE OF AIR-COOLED WALL-MOUNTED AND CASSETTE-TYPE SPLIT AIR CONDITIONERS UNITS AT THE ICTS CAMPUS

This job includes day-to-day operations, troubleshooting, preventive, break down, periodic maintenance, and troubleshooting of 53 Nos of Hi wall Split ACs and 23 Nos of Split Cassette AC installed in the faculty house, Ajanta guest house, Nambu Meeting hall, Chern & Feynman classroom, New classroom, security block, Control rooms, New Datacenter and other facilities in ICTS Campus. The scope also includes taking airflow, temperature, and gas pressure readings and recording them in the given maintenance logs.

Daily – General shift

4) OPERATION AND MAINTENANCE OF ALL HVAC ELECTRICAL PANELS, DDC PANELS VARIABLE FREQUENCY DRIVES, AND POWER & CONTROL SYSTEMS

This job includes day-to-day operation, preventive, breakdown, periodic maintenance, and troubleshooting of all 15 Nos of electrical panels, MCCB, Starterpanels of all AHUs, Chillers, pumps, and ventilation units of the ICTS campus. The scope also includes measuring all electrical & control parameters and recording them in the given logs.

The scope includes the preventive, brake maintenance, and troubleshooting of all electrical panels, sensing and control devices of the complete HVAC system in the entire ICTS campus.

The AHU starter and VFD panels shall be serviced during the routine quarterly maintenance of the AHU.

The electrical panel and VFD maintenance are as follows.**Motor Starter Panel Maintenance**

1. Open the motor starter panel and the contactors. This would need a special 'T' type key, which is found with the electrical officer. The panel can be opened when the breaker is switched off.
2. Take out the moving contacts and the arc huts. Keep a very fine emery paper, good evaporative type contact cleaner, and a clean cloth for cleaning and maintenance purposes.
3. Mark the moving contacts from where it was removed; clean the fixed and moving contacts and the arc huts.
4. Fix the contacts as per the markings and check for any loose connections inside the panel.
5. By visual inspection we can identify the contact's condition. Take out the contact, clean it with a smooth cloth or a very fine emery paper, and measure the contact's width by a Vernier caliper at 3 different places. Note down the values.
6. Simultaneously take the same type of new contact, measures, and note down the width values measured in 3 different places. Now compare the values to find out the actual contact condition.
7. If the difference between the values is bigger, replace the contact with a new one (same type).
8. Also make sure that the measured value of a single contact must be the same on both sides in both moving and fixed type contacts, otherwise there is a high possibility of sparks generation.
9. Cleaning of the complete starter panel
10. Checks in the terminal box on the motor for loose connections
11. Visual inspection of the overall starter panel

Check for Loose Connections

1. Tighten the loose screws using a Screwdriver, if found any
2. Using your hand, try to pull out the wires slowly. If any wire comes out completely or more than it should, take it out and reconnect
3. Check the insulation of the connected wires, as because of aging and sparks there is a possibility of damage to the wires.

Safety Measures to be Followed While Starting Motor Starter Panel Routines

1. Switch off the main power supply from the circuit breaker
2. Take out the main fuses in the starter panel, and if required control fuses as well
3. Put the lockout tag

Inform the engineer who is in charge of that particular machinery

MEASUREMENTS.

Once all of the maintenance procedures are as mentioned above is completed voltage and current readings shall be taken and recorded in the maintenance logs.

Daily – General shift

5) OPERATION AND MAINTENANCE OF THE VENTILATION SYSTEM FOR THE KITCHEN AND SWIMMING POOL FILTRATION PLANT.

This job includes day-to-day operation, preventive, breakdown, periodic maintenance, and troubleshooting of all types of dynamical and mechanical faults. The scope also includes taking airflow, temperature, and recording in the given maintenance logs.

Daily – General shift**6) OPERATION AND MAINTENANCE OF VEG AND NON-VEG COLD STORAGE IN THE KITCHEN.**

This job includes day-to-day operations, troubleshooting, preventive, breakdown, periodic maintenance, and troubleshooting of both cold storage units, installed in the ICTS canteen kitchen. The scope also includes taking body fabrication and fixing work and checking regularly set-up temperature and refrigerant pressure, checking defrosting timer and readings, and recording in the given maintenance logs.

Daily – General shift

Following are the equipment details and detailed scope of work for the existing system (BOQ item nos 1,2,3 4,5&6)

Double skin AHU complete with centrifugal fan, motorized dampers, pre-filters section with synthetic fiber filters, and multi-deep chilled water coil. Stainless steel drain pan, high-efficiency EFF-I squirrel cage motor, mist generator, strip heaters with all controls & accessories. AHU is complete with all adaptive controls such as air stat, safety stat, humidistat, etc.

Periodic filter cleaning & minor related works to be carried out.

Details of Equipment**Chandrashekhar Auditorium :**

1) Double skin floor-mounted AHU
Capacity: 11500 cfm, 28.75 TR
Make: Blue star
Quantity: 2 Nos.

Library:

2) Double skin floor-mounted AHU
Capacity: 11500 cfm, 28.75 TR
Make: Blue star
Quantity: 2 Nos.

Ramanujan Lecture hall:

3) Double skin floor mounted AHU
Capacity: 8000 cfm, 20 TR
Make: Blue star
Quantity: 2 Nos.

Madhava Lecture Hall:

4) Double skin floor-mounted AHU
Capacity: 8000 cfm, 20 TR
Make: Blue star
Quantity:1 Nos

Jagdishchandra Bose Lab:

5) Double skin floor-mounted AHU
Capacity: 6800 cfm, 17 TR
Make: Blue star
Quantity:1 Nos

Data Center CSU:

6) Ceiling Suspended AHU (CSU)
Capacity: 3300 cfm, 8.25 TR
Make: Edgetech Air System Pvt. Ltd
Quantity: 2 Nos.

7) Ceiling Suspended AHU (CSU)
Capacity: 700 cfm, 1.75 TR
Make: Edgetech Air
Quantity: 1 No

Kitchen Ventilation System:

8) Double skin floor mounted Exhaust Unit
Capacity: 15000 cfm, 37.5 TR
Quantity:.1 Nos

9) Double skin floor-mounted Fresh Air Unit
Capacity: 9000 cfm, 22.5 TR
Quantity: 1 No

Ventilation System of Swimming Pool Pumps Room:

10) Double skin floor mounted Exhaust Unit
Capacity:6000 cfm, 15 TR
Quantity: 2 Nos

11) Double skin floor-mounted Fresh Air Unit
Capacity:3500 cfm, 8.75 TR
Quantity: 2 Nos

Canteen Cold Storage:

12) Veg Cold Storage
Capacity:10TR
Quantity: 1 No.

13) Non-Veg Cold Storage
Capacity: 10 TR
Quantity:1 Nos.

Details of the Air Conditioning Systems in the ICTS campus:

14) **Water-Cooled wall-mounted AC** system in the admin block, seminar block, guest house, data center, and other facilities.

Wall-mounted (FCU) AC Make: Caryaire,
Capacity: 1.8 TR
Quantity: 144 Nos.

15) **Water-Cooled cassette AC** system in the Admin block, control room, Emmy Noether, ARC meeting room, SN Bose meeting room, and other facilities.

Cassette (FCU) AC Make: Caryaire,
Capacity: 2 TR,
Quantity: 25 Nos.

16) **Air-Cooled wall-mounted split AC** system in the Ajanta guest house, Seminar block, Faculty Housing, Sports Complex, Control room, and other facilities.

Split wall-mounted AC Make: Mitsubishi, Hitachi, Dakin, Voltas & Carrier,
Capacity:1TR,1.5TRand2TR,
Quantity:41 Nos.

17) **Air-Cooled cassette AC** system in the Obaid Siddiqi meeting room, Nambu conference room, seminar block, Obaid Siddiqi meeting hall, New classroom, Divisible conference room, control room, and other facilities.

Split wall-mounted AC Make: Mitsubishi, Dakin,

Capacity: 1.5 TR, and 2 TR,

Quantity: 21 Nos.

18) Operation and maintenance of HVAC low side pieces of equipment: Motorized valve, Butterfly valve, Gate-way valve, NRV, Balancing valve, Flow meter, Condenser Line Thermostat sensor, Evaporator Line Thermostat sensor, Strainer Stainless Filter, Gasket, Air relief valve, Ball valve, FCU actuator valve, AHU actuator valve, Damper motorized valve, CSU motorized valve, air distribution grill, damper, canvas, Co2 detector, Sensor,

19) Operation and maintenance of variable frequency drive (VFD)

Make Danfoss,

Quantity: 4 Nos.

Make: Schneider

Quantity: 4 Nos.

Total: 8 Nos.

20) Total No. of Electrical panels: 15 Nos,

21) Total No. of DDC panel: .5 Nos

DETAILS OF WORK:

Daily operation/monitoring on round the clock basis, scheduled annual preventive/routine & predictive maintenance, breakdown maintenance including repair/replacement of all spare parts and consumables of the entire existing AC system in the campus working on chilled water. The system has chilled water supply & return lines, AHU, CSU, FCU, air supply & return ducts, grills, diffusers, dampers, electrical panels, VFDs, BMS (operation only), humidification and dehumidification systems, control & protection systems. Work shall be carried out by continuous deployment of competent, experienced & trained staff members at the site. This is a continuous mode of operation & maintenance. All emergencies at all times are to be attended without fail.

The AHU, CSU & FCU units that are to be maintained will be consisting of Cooling coils (heat exchangers), blowers, motors, heaters, 2-way mixing valves, humidistats, thermostats, pressure & temperature gauges, pulleys, V-belts, flexible hoses, hose clamps, hydraulic hoses with fixtures, water flow control valves, fasteners with all accessories, pre-filters, micron class filters, canvas, thermos-coal & foam insulation, tar sheet, control transformer, fuse units, contactor, TOLR, push-buttons, connectors, control units & control schemes, drain system, plenum area, etc. complete set.

The chilled water lines, related control valves & accessories are also to be maintained. Problems anywhere in the entire network of chilled water supply & return lines like airlocks, line blocks, leakages, etc. are to be attended to & rectified by the contractor, to bring the system to normalcy.

All the air ducts, diffusers, dampers, grills, flow control valves, air filters, etc. in the system are to be cleaned & maintained periodically.

ADDITION & ALTERATION WORKS: All the addition and alteration jobs in the air conditioning system shall be carried out by the maintenance contractor at the agreed rates. If the prices are not available in the agreement, the same shall be paid at departmentally estimated rates (based on market rates). Rate analysis shall be produced by the contractor whenever asked by the department.

All fabrication works, repairs, and servicing of machines/equipment/parts therein (or arrangement for the same) within the purview (entire AC system) of this contract, shall have to be carried out by the contractor within the specified time.

If the contractor fails to carry out the assigned or entrusted work, the department shall get the work done by engaging any other agency and twice the cost incurred shall be recovered from the AMC contractor.

The entire existing AC system (working on chilled water) and ventilation/exhaust systems are covered under the scope of this AMC. Any additions and alterations made in the system (whether by the contractor or by any other agency or by ICTS), up to an extent of 10% of existing installed AHU, CSU, FCU, and Split AC capacities are covered under the scope of this contract for operation & maintenance.

SCHEDULING:

In a broad manner, the work can be scheduled as follows;

D) ROUTINE MAINTENANCE

DAILY:

- Operate the HVAC system (both high & low sides) on round the clock basis, in a three-shift system.
- Check for any complaints that are reported and troubleshoot them immediately.
- AC systems of the important & critical facilities are to be continuously monitored and corrective actions are to be taken immediately so as not to affect the facility concerned
- If any important activities like seminars/lectures/meetings/interviews are planned on the campus, the concerned AC system has to be inspected and normal functioning of the AC system is to be ensured.
- Adjustments in the system to achieve the required temperature & RH level as required by the user.
- Release of air locks/blocks in the system.
- If there is any instruction to operate the AC systems in the specific timings, the same has to be materialized.
- General inspection of the AC system and rectification if any abnormality exists.
- Attending to the planned/scheduled preventive maintenance
- Updating all the relevant documents, logs, history books, etc.
- Reporting of day's work and progress to the concerned Engineer-in-charge.

MONTHLY:

- Cleaning of filters (pre-filters, superfine filters, 5-micron filters, wherever installed and which requires cleaning)
- Checking the performance of important AHUs like the Library, Chandrasekhar Auditorium, Ramanujan Lecture Hall, Madhva Lecture Hall, Multi-Purpose Lab, Emmy Noether Lecture Hall, etc.
- Cleaning of the HVAC plant and thoroughly cleaning and dusting of AHU rooms.
- Checking the performance of the heat exchanger in the data center.

Quarterly (or once in 4 months, as applicable):

- Inspect the connection for any water leaks in the coil and connection. Check the tightness of the hose, and fittings & tighten if necessary. There should not be any flooding of water from the AHU & pipeline.
- Check and clean drain pan, condensate drain pipe, and floor drains to ensure no choking and flooding.
- Cleaning of cooling coils, fins, and filters, air & water flow, the release of airlock, etc.
- Open up the electrical control panel, and inspect for any blackening of contacts, loosening of connections, component condition, etc. Rectify if any abnormality is noticed.
- Inspect the conditions of the thermometers and pressure gauges for proper functioning.
- Check for proper operation of the associated measuring, control,s and safety devices like thermostats, humidistats, 2-way actuating valves, etc. Reset if required.
- Check, report, and rectify, if any abnormal noise/vibration is observed.
- Check and re-tighten any loose bolts and nuts in the proper sequence.
- Clean all types of air filters.
- Check the fan belt bearing condition for proper tension, and replace them if necessary, and examine the fans for correct alignment, lubricate the bearing as required.
- Inspect the condition of insulation materials and rectify if necessary.
- Clean the water strainer of the chilled water system if installed.
- Entire AHU room to be thoroughly cleaned with vacuum cleaner & to be made clean & dust free.
- Recording the values of settings & temperature & RH levels maintained in each lab/facility/area
- Necessary documentation

YEARLY:

- Perform quarterly services
- Overall servicing of the unit, cleaning, reduction of noise level, checking of mechanical assemblies, and foam insulators over the pipes.
- Descaling of copper tubes of the cooling coil (the water circuit) by suitable means as per the manufacturer's recommendation and general standards. Procedural details for this work are enclosed.
- Parameter checking before & after servicing
- Air flow checking & adjustment/balancing, if required
- Checking of IR value for motor and heater banks.
- Checking and calibration of temperature and pressure gauges on supply & return chilled water lines and replacement of the same if required.

- Checking of unit efficiency, total capacity delivery of the unit & bringing it to optimum performance level, air flow and water temperature measurements on supply & return ends, maintaining the lab temperature and temperature & RH adjustments.
- General checking of electrical switchgear, controls, etc. All electrical systems should be checked by competent persons as per relevant Indian Standards and as per Electricity Act 1910.
- Cleaning of a ducting system having diffusers, grills, dampers, etc.
- Necessary documentation of parameters (before & after servicing work) and submission of the checklist.
- Cleaning of Kitchen exhaust duct, hood Oil and Grease neatly once in a year to prevent the fire.

NOTE:

1. If it is required to clean the cooling coil by water jet, the same has to be done by removing the cooling coil with all precautionary measures & taking it to a convenient place for a full cleaning of water & air circuits. The coil is to be cleaned with a suitable chemical & water jet. This work is to be done carefully without damaging the AHU & the coil. This is also included in the AMC scope at no extra cost.
2. Coil, fins, filters, etc. are to be thoroughly cleaned to achieve desired air and water flow rates.
3. All the maintenance/servicing works should be carried out in such a way that the equipment /the unit can be used for its optimum performance. Any work which is found to be required for optimum performance of the system has to be done.
4. Necessary care should be taken while carrying out all types of maintenance/servicing of equipment to avoid damage. Any damages to equipment/equipment parts during the services have to be replaced free of cost.
5. All the necessary materials like the suitable grade of grease/lubricant, cotton waste, cleaning brush, etc., to carry out servicing will be supplied by the department..

BREAKDOWN MAINTENANCE:

Any breakdown complaint should be attended immediately to avoid disturbance in the institute's activities. Spares & tools required to attend any breakdown have to be maintained.

After attending to breakdowns, the unit/system shall be closely observed/monitored the next day and parameters shall be checked & recorded.

'FINE' CLAUSE: If complaints are not attended to within 4 hours the fine will be imposed at the rate of Rs.200.00 per hour.

REPAIR AND REPLACEMENT OF PARTS:

During routine/periodic maintenance and during breakdown maintenance the tenderer shall repair faulty parts/equipment with his resources. Repair shall be done in such a way that it should not affect the performance & life of the equipment, and while doing maintenance work, care should be taken that water should not come out from the unit to the lecture & seminar hall area.

Material, equipment, and part thereof which is beyond repair shall be replaced and will be paid separately as approved by Engineer-in-Charge. All the work is to be done as per daily/monthly/ half yearly or yearly schedule.

In case, if it requires the same work to be done in between, same shall be attended to without any extra cost, in the interest of the System.

The essence of the contract is to maintain the Air-conditioning system in such a way that it gives desired optimum performance. Repair/replacement of all the parts/equipment required for the proper functioning of the machine, whether specified or not, are included in the scope of work.

DESCALING & CLEANING OF COOLING COILS & FINS:

It is a once-in-a-year activity, only if required. The work procedure is as follows.

- Ensure that the power supply of the unit should be disconnected/switched off and caution board is fixed at the main isolation of the power supply.
- Take pre-service system running parameter readings (Airflow, DB, WB temp. Readings, electrical parameters, etc.)
- Ensure that the main valves (ball valves of the unit) should be in closed condition.
- Arrange to cover & ensure that water should not fall on the electrical control box, motorized 1/2 way valves, pressure gauges, etc. Failure to cover the electrical control box, 3-way valves, and other electrical circuits where waterfall on such items may lead to serious injury/death/damage to the equipment accessories etc., for which the contractor is solely responsible.
- Loosen the hose clips and remove the connections from the cooling coil.
- Prepare the chemical mixture & keep it ready in a container/tank. Circulate it through the cooling coil for a specified time as recommended by the manufacturer. (Note: Contractor should arrange for container/tank etc.,)
- After circulation of the chemical mixture through the cooling coil, flush out the coil using fresh water before connecting the hose connections.
- Coil fins should be cleaned using fins cleaning chemicals, brush & should be cleaned to remove the sediments & dust particles of the entire coil.
- Should ensure there should not be any folding of coil fins which may result in improper the flow of air through the coil.
- Should ensure that always air should be passed through the coil, any bypass of airflow should be attended to immediately and rectified.
- Ensure that the cooling coil filters are in good/clean condition, if the filter is choked, the same should be cleaned and fixed.
- Reconnect all the systems & take the post-service running parameter readings.
- After completing the work, it should be ensured that the entire unit & the surrounding area is cleaned thoroughly.

PERSONNEL TO WORK AT ICTS:

The contractor has to manage & execute all the entrusted work. For the purpose of continuous monitoring and maintenance of the system throughout the year, the contractor has to deploy an adequate number of qualified and experienced personnel (Technical Assistants, Supervisors, Senior and Highly Skilled Technicians and

Skilled and Semiskilled Work Assistants) at the site on an everyday basis to carry out the dedicated work. Round-the-clock 24/7 X 365 Shift operations also have to be managed as required. All the works shall be carried out as per standard practice and details are given in the tender document. These personnel shall also carry out all other works as required by the institute and issues or problems pertaining to AC-related work of ICTS and shall never say 'no' to any of the relevant requirements of ICTS.

During exigencies, the manpower deployed shall vary (raise) as required. The contractor, after studying and understanding/gauging the requirements of ICTS, shall fix a staff pattern at his/her discretion for the normal running of the system, and strictly adhere to it (which may increase during exigencies). Currently to maintain a similar system at the campus following personnel are deployed.

S No.	Category	Skill Level	Manpower Required Shift Wise	Total Manpower Required
1	Supervisor	Highly Skilled	1 (General Shift)	1
2	Technician	Skilled	1 Per Shift + 1 General Shift+ 1 Reliever	5
3	Work Assistant	Unskilled	1 Per Shift+ 1 Reliever	4
	Total			10

The following are the qualification & experience pre-requisites of the to be staff deployed:

QUALIFICATIONS & EXPERIENCE:

Supervisor: Degree (Mechanical Engineering) with more than 1 year experience or Diploma (Mechanical Engineering) with more than 2 year experience or ITI (Air conditioning or related branch) having more than 5 years experience, in relevant fields. Highly skilled.

Technicians: AC Technicians : ITI (Air Conditioning or related branch) having more than 2 years experience in relevant fields. Skilled

Helper: 10 th/SSLC/ SSC with minimum 1 year experience, preferably in HVAC in relevant fields of maintenance (Unskilled)

This is the bare minimum requirement to maintain the system of this magnitude as observed till now. However, contractors can specify the personnel deployment pattern they propose to adopt for this work after thoroughly studying the scope of the work and clearly understanding the same by attending the PRE-BID meeting. The vendors shall have all their doubts cleared in the PRE-BID meeting. It is completely the contractor's responsibility to fix the staff deployment pattern and to fulfill the requirements of ICTS. The figure mentioned above is a minimum indicative only.

It is fully the responsibility of the contractor to deploy qualified staff with hands-on experience, and relevant Licenses/permits to handle electrical, Air conditioning works. They should be fully conversant with relevant Indian Standards and should follow electrical & Industrial safety norms/practices.

All the personnel deployed to ICTS shall have police verification clearance, and such documents shall be submitted within 15 days of the commencement of the contract.

- ★ Contractor shall submit a staff pattern & general scheme to carry out the above work along with the bid.
- ★ Contractor should provide Uniforms, Shoes, safety & protection gear, Identity Cards, working tools etc. to the staff deployed, at no extra cost.
- ★ Contractor will ensure consistency of work and work force, correct troubleshooting, good workmanship, follow all safety procedures and will make all necessary efforts to maintain a healthy environment and reliable services.
- ★ Any air-conditioning work/exigency of ICTS, even if it is not specifically mentioned in this document and does not incur cost in spares/material, shall be carried out by the deployed staff at no extra cost.
- ★ If any of the staff members appointed by Contractor is found to be 'not competent', he has to be replaced by a right person within a stipulated time as given by Engineer In charge, ICTS.
- ★ All the relevant documents pertaining to staff deployed, like copies of job appointment orders with the contractor, address proof, photocopy of ID card etc. and any other details as sought shall be provided to ICTS, by the contractor under his responsibility for the correctness.
- ★ Wages of the staff deployed should not be less than as that mentioned in Minimum Wage Act applicable to the respective category/experience, as on date. The ESI, PF, gratuity, bonus etc., labor law, other rules & norms as found required for contracts of this nature should be met. The same details shall be submitted along with the tender bid.
- ★ In no case, the contractor or his/her employees shall claim job/employment with ICTS. No transport facility shall be provided for the contractor's employees by ICTS.
- ★ It is purely the contractor's responsibility to get his staff acquainted with the site condition, operation and maintenance procedure, Equipment detail, Safety devices, Scope of work etc.
- ★ In case of delay, repetition of work, noncompliance, inadequate staff etc. fine will be imposed as per the fine clause mentioned.
- ★ Safety aspects in workplaces have to be followed as per relevant standards & codes. Any accident or damage to death will be treated as negligence & it is purely the responsibility of the contractor. ICTS is not responsible for any accidents or damages to death. The safety of all the staff under this contract is the sole responsibility of the contractor.
- ★ Contractor is responsible for the behavior & conduct of his workmen and hence they should be properly educated and controlled.

The contractor & the staff deployed are to assist in the replacement of HEPA filters, prefilters, and micron filters which are procured by ICTS.

SPARES : All running spares, pertaining to the installations covered in this contract, shall be supplied by the institute, Which shall be properly utilized by the contractor for maintenance / repair works as per standard practice. As the work involved is specific in nature, the contractor will ensure proper supervision at all times. In case of deficiency, a fine will be imposed. Since we are entering into a separate Annual Maintenance

Contract for specialized Critical systems like Chiller Units, breakdowns of these equipment is not covered in the scope of work. However, Operation and minor maintenance, preliminary troubleshooting, minor repairs, replacement of minor parts etc. are included in the scope of this work, but the contractor shall ensure that these works shall not implicate with the main AMCs of these equipment / systems.

Running of the system under abnormal conditions or in risk will attract fines. Contractor will be responsible for any act of sabotage, misdeed, in-discipline, negligence on the part of the contractor or his employees. Penalty or fine or legal action, as decided by the Director, ICTS shall be imposed on the contractor.

IMPORTANT: Cleanliness and aesthetic finish are very important in ICTS. Hence any kind of work, be it maintenance, shifting or new work, generated dust & debris should be properly cleaned. Work finish should be neat and appealing. All spaces / areas where work is carried out shall be cleaned and left spic & span after completion of work.

Special Note:

Contractor shall take necessary precautions to ensure safety of their men, materials, equipment, tools & equipment, during the period of contract in ICTS. Any accident due to negligence in following safety procedures is purely at the responsibility of the Contractor. The department is not responsible for any accidents/damages/death. Safety of all the staff of the Contractor is the sole responsibility of the Contractor. ICTS will not be responsible, nor be liable for any accident, damage, loss to his men & materials. Any act of commission or omission which jeopardizes the safety / security of the center, the contractor will be fined by the center and any expenses whatsoever incurred towards the work that need to be discharged by the center on account of this, shall be suitably recovered from the contractor, as deemed fit and as decided by ICTS.

The contractor has to provide the following mandatory listed items of ISI standards to each deployed staff at no extra cost for workplace safety.

Table - A Uniform & PPE Kits

S No.	Item Description	Quantity
1	Uniform	2 Sets per year
2	Mechanical Safety Shoes	1 Pair Per Year
3	Transparent Safety Goggles	1 Pair Per Year
4	Chemical Proof Gloves	1 Pair Per Year
5	Mechanical hand gloves	1 pair once in 6 Months
6	Inhalation Mask	1 per Month
7	Hand Nerve Safety Cover	1 Pair Per Year
8	Reflective Jacket	1 in 6 Months
9	PVC ID Card(Computer printed)	1 per Year

It is fully the responsibility of the contractor to deploy qualified staff with hands on experience, relevant License/permits to handle electrical, Air conditioning works. They should be fully conversant with relevant Indian Standards and should follow electrical & Industrial safety norms / practices.

If any of the staff members appointed by Contractor is found to be 'not competent', he has to be replaced by a right person within a stipulated time as instructed by Electrical Engineer- In-charge, ICTS.

Contractor will ensure consistency of work and workforce, correct troubleshooting, good workmanship, follow all safety procedures and will make all necessary efforts to maintain a healthy environment and reliable services. High attrition rate of staff is not acceptable, and shall remain less than 25% per year

Any air-conditioning work / exigency of ICTS, even if it is not specifically mentioned in this document and do not incur cost in spares / material, shall be carried out by the deployed staff at no extra cost.

If any of the staff members appointed by Contractor is found to be 'not competent', he has to be replaced by a right person within a stipulated time as given by Engineer In charge, ICTS.

All the relevant documents pertaining to staff deployed, like copies of job appointment order with the contractor, address proof, photocopy of ID card etc. and any other details as sought shall be provided to ICTS, by the contractor under his responsibility for the correctness.

Wages of the staff deployed should not be less than as that mentioned in Minimum Wage Act applicable to the respective category/experience, as on date. The ESI, PF, gratuity, bonus etc., labor law, other rules & norms requirements as found required for contracts of this nature should be met. The same details shall be submitted along with a tender bid. The timely revision of VDA rates should be considered and paid to the staff deployed.

In no case, the contractor or his/her employees shall claim job / employment with ICTS. No transport facility shall be provided for the contractors employees by ICTS.

It is purely the contractor's responsibility to get his staff acquainted with the site condition, operation and maintenance procedure, Equipment detail, Safety devices, Scope of work etc.

In case of delay, repetition of work, non compliance, and inadequate staff etc. fine will be imposed as per the fine clause mentioned.

Safety aspects in work places have to be followed as per relevant standards & codes. Any accident or damage to death will be treated as negligence & it is purely the responsibility of the contractor. ICTS is not responsible for any accidents or damages to death. Safety of all the staff under this contract is the sole responsibility of the contractor.

Contractor is responsible for the behavior & conduct of his workmen and hence they should be properly educated and controlled.

TESTING, MEASURING EQUIPMENT, TOOLS & TACKLES:

All the tools required for carrying out the work stipulated in this document shall be provided by the contractor at site. But, the following minimums are a must at all times.

Table B (Mandatory Tools for deployed Manpower)

All the Technicians, & Supervisors should be given with the following;

1. Test lamp set each (1 Ph.)
2. Screwdrivers set (one light duty & one heavy duty)
3. Combination Pliers, 500V grade
4. Live line tester, 500V
5. Knife
6. Wire stripper
7. Nose Plier
8. Digital Thermometer

Note: All above mentioned tools and accessories should be ISI standard make.

Table- C (Mandatory Equipment Needed for work Site)**a. Following calibrated, well maintained instruments should always be available at site:**

1. AC/DC tong testers/Clamp meter - 1 Nos
2. Multimeter - 1 Nos
3. Anemometer - 2 Nos
4. Hygrometer - 1 Nos
5. One mercury thermometer-1Nos
6. Deciblemeter-1Nos
7. Laser Thermometer-1Nos
8. Digital Tachometer Contact based- 1 Nos.
9. Digital Vernier Caliper - 1 Nos

b. Following tools should always be available at site:

1. 6-7 to 30 – 32 size 9 metric 0 double end open spanner- 2 Set
2. 6-7 to 30 – 32 size (metric) double end ring spanner- 2 Set
3. Adjustable wrenches (8 &12 inch)- 2 set
4. Allen keys inch/mm- 2 Set
5. Box Spanner 6-7 to 30 – 32 size- 1 Set
6. Star screwdriver set- 2 Nos
7. Flat Screwdriver set- 2 No
8. Heavy Duty Star & Flat Screw Drive- 2 Nos Each
9. Hexa Frame- 1 nos
10. Two Nos. of hammers (0.5 lb,1lb & 2lb)- 3 nos each
11. Impact electric drill machine with drill bits (up to 13mm drill bits for SS grade)-1 set
12. Hammering Electrical drill Machine with bit (Up to 25 mm)- 1

13. Bearing puller - 2 No
14. Air Blower - 1 No
15. Wet & dry Vacuum Cleaner -1
16. Oil Gun-1
17. Grease Gun-1
18. Pipe Wrench-1 set (12-24 inch)
19. Brazing Torch-1
20. Brass Manifold Gauge set-1
21. Light weight A type Ladder (5ft-1Nos & 8 ft- 1 Nos)- 2
22. Flaring Tools Set-1
23. Copper Pipe Bending Tools set-1
24. Jet Spray Pump-1
25. Electrical Cutting/Grinding Machine -1 Nos
26. Electric Torch-1 Nos
27. Rain coat-2 Nos.
28. Umbrella -2 Nos.

Other tools & tackles, instruments etc. as and when required, shall be arranged by contractor at no extra cost. All these shall be suitably kept at site, with contractors own security arrangement. These items should always be available for work. No work shall be partially or fully stopped for want of personnel or tools or instruments. If such an event occurs, the fine will be levied.

‘PENALTY’ CLAUSE :

The availability & functioning of the AC system is very essential and critical. Non-availability may result in many tangible & intangible losses in research work, equipment etc.

Hence all the work routine, servicing, breakdown maintenance has to be carried out in accordance with all standards and statutory norms with minimum time and maximum accuracy to ensure maximum availability. Failure in meeting the above requirements will attract the ‘fine’ clause as below.

Contractor should depute experienced personnel to carry out maintenance work both low & high side in such a way that the repetition of the problem should be avoided.

- a) Absenteeism:** No absenteeism shall be allowed. In case of absence of any staff in the agreed staff pattern, a fine will be imposed at double the rate of wages or salary for the day the staff remains absent.
- b) Non-Compliance of work:** In the event of failure of compliance of awarded work in stipulated time, a fine will be imposed as per double of actual expenditure incurred in attending the same by another agency.
- c)** In case of repeated problems where the service personnel fail to diagnose the problem properly, a fine will be imposed at the rate of Rs.1000.00 per repeat.

ICTS / Engineer-in-Charge will be authorised to deduct the amount from the contractor bill or security deposit or initiate any other action as found suitable.

Specific Note

Contractor must visit the site, understand the site condition, type of work involved, quantum of work etc., for carrying out works, before quoting.

Quoting firms should have similar kind of experience of having maintained at least two sites with minimum 50 Nos. of AHU / FCU units. Supporting certificates in this regard to be enclosed with the technical bid.

TOTALITY: All the AC related works in ICTS are covered in this contract. ICTS is looking at a total work / troubleshooting solution through this contract, which shall be met by the contractor. Contractor shall never say 'no' to any of the AC related work requirements of ICTS which is found to be reasonable to be entrusted onto him by Engineer-in-charge.

Quoting firms, familiar with working in similar kinds of installation & proven technical & financial record & having PF, ESI registration & labour license only shall quote. Previous month paid challans to be produced every month to claim the bills.

Contractor will ensure that all routine and preventive maintenance is done in a systematic and controlled manner so as not to disturb the lab activities.

All necessary tools, tackles and necessary spares inventory are to be maintained by the Contractor to meet to avoid / reduce down time of each unit.

Documentation – Submission of daily / monthly / quarterly / yearly reports as per ICTS formats for:

- a) Maintaining Individual maintenance checklist / Service card for all equipment / units.
- b) Preparation of schedule of work / updating of records.
- c) The performance details, observation remarks
- d) Inventory and history records.

The contractor & the staff deployed are to assist in replacement of HEPA filters, prefilters, micron filters which are procured by ICTS.

Minor assistance of staff shall be provided for any other AC related work of ICTS

The contractor should ensure that the staff deployed will wear uniforms, safety shoes and display identity cards in person.

The deployed staff shall report to the concerned engineer and carry out work as per plan & schedule. They should submit the report of work done during the day which shall be inspected & accepted by the concerned engineer.

All works to be carried out in accordance with relevant Indian Standards.

For carrying out the above job the contractor has to make his own arrangements for men, tools, tackles, spares, materials, testing and measuring equipment, safety and protective gear/devices, transportation, etc.

If any small value items (value of the item less than 5000/- and not covered in annexures) to be supplied, the same need to be supplied at the market rate/manufacturer's price list in consultation with the Engineer in charge. For all such works rate analysis shall be provided.

Any air-conditioning related work / requirement of ICTS, even if it is not specified in this document & does not incur cost in spares / materials, shall be carried out by the staff deployed at site, at no extra cost.

As the work involved is specific in nature, the contractor will ensure proper supervision at all times. In case of deficiency, a fine will be imposed.

Since we are entering into a separate Annual Maintenance Contract for specialized Critical systems like Chiller Units, breakdowns of these equipment is not covered in the scope of work. However, Operation and minor maintenance, preliminary troubleshooting, minor repairs, replacement of minor parts etc. are included in the scope of this work, but the contractor shall ensure that these works shall not implicate with the main AMCs of these equipment / systems.

Running of the system under abnormal conditions or in risk will attract fines.

Contractor will be responsible for any act of sabotage, misdeed, in-discipline, negligence on the part of the contractor or his employees. Penalty or fine or legal action, as decided by the Director, ICTS-TIFR shall be imposed on the contractor.

IMPORTANT: Cleanliness and aesthetic finish are very important in ICTS. Hence whatever kind of work whether maintenance, shifting, new work etc. area and generated dust & debris should be properly cleaned. Work finish should be neat and appealing.

All areas where work is carried out shall be cleaned and left spic & span after completion of work.

Terms & Conditions

1. **PAYMENT TERMS:** After satisfactory completion of work on a monthly basis.
2. Contractor shall take necessary precautions to ensure safety of his crew, materials, equipment, tools & equipment, during the period of contract in ICTS.
3. ICTS will not be responsible & liable for any accident, damage, loss to his men & materials
4. Any act of commission or omission which jeopardizes the safety / security of the centre, the contractor will be fined by the centre and any expenses whatsoever incurred towards the work that need to be discharged by the centre on account of this, shall be suitably recovered from the contractor, as deemed fit and as decided by ICTS.
5. ICTS reserves the right to not to consider the lowest bid.
6. The contract is initially for a period of 3 months. Based on the satisfactory performance, it may be extended for another 9 months. ICTS may extend the contract for a period of one more year at the same cost, terms & conditions.
7. Salary to the employed staff to be paid before 7th of every month, irrespective of the issues related to pending bills, statutory deductions etc.
8. Monthly bills to be submitted by 10th of every month.
9. Statutory deduction as per the wages act to be paid & Challans, Receipts to be submitted for reimbursement of the same.

List of Equipment

DETAILS OF PREVENTIVE MAINTENANCE SCHEDULE & INVENTORY FOR AIR-CONDITIONING SYSTEM IN ICTS			
SI No.	Location	Equipment Description	Quantity
1	Chandrashekhar Auditorium	28.75 TR water-cooled air handling units (AHU)	2 Nos.
		7.50 KW VFD	2 Nos.
2	Ramanujan Lecture Hall	20 TR water-cooled air handling units (AHU)	2 Nos.
3	Jagdish Chandra Bos Lab	17 TR water-cooled air handling units (AHU)	1 No.
4	Library	28.75 TR water-cooled air handling units (AHU)	2 Nos.
		7.50 KW Variable Frequency Drives (VFD)	2 Nos.
5	Madhwa Lecture Hall	20 TR water-cooled air handling units (AHU)	1 No.
6	Data-center CSU	8.25 water-cooled ceiling suspended unit (CSU)	2 Nos.
7	Data-center CSU	1.75 water-cooled ceiling suspended unit (CSU)	1 No.
8	Kitchen Ventilation Exhaust unit	37.5 TR double skin floor-mounted AHU	1 No.
9	Kitchen Ventilation Fresh-Air unit	22.5 TR double skin floor-mounted AHU	1 No.
10	Swimming Pool pumps room Exhaust unit	15 TR double skin floor-mounted AHU	2 Nos.
11	Swimming Pool pumps room Fresh-Air unit	8.75 TR double skin floor-mounted AHU	2 Nos.
12	Canteen Veg Cold Storage AC unit	10 TR high-temperature air-cooled refrigeration system	1 No.
13	Canteen non-veg Cold Storage AC unit	10 TR high-temperature air-cooled refrigeration system	1 No.
14	HVAC Plant	120 TR water-cooled screw chillers	4 Nos.
15	HVAC Plant	25 HP condenser pumps	4 Nos.
16	HVAC Plant	7.5 HP Primary Pumps	4 Nos.
17	HVAC Plant	10 HP Secondary Pumps	4 Nos.
18	HVAC Plant	Cooling Tower	4 Nos.
19	HVAC Plant	7.50 KW Variable Frequency Drives (VFD)	4 Nos

WATER COOLED HIGH WALL UNITS (144 Nos.)			
ACADEMIC BLOCK			
20	HVAC Office - 1	1.8 TR Water-cooled high-wall AC	1 No.
21	HVAC Office - 2	1.8 TR Water-cooled high-wall AC	1 No.
22	LOWER GROUND FLOOR H-101	1.8 TR Water-cooled high-wall AC	1 No.
23	LOWER GROUND FLOOR H-102	1.8 TR Water-cooled high-wall AC	1 No.
24	LOWER GROUND FLOOR H-103	1.8 TR Water-cooled high-wall AC	1 No.
25	LOWER GROUND FLOOR H-104	1.8 TR Water-cooled high-wall AC	1 No.
26	LOWER GROUND FLOOR H-105	1.8 TR Water-cooled high-wall AC	1 No.
27	LOWER GROUND FLOOR H-106	1.8 TR Water-cooled high-wall AC	1 No.
28	LOWER GROUND FLOOR H-107	1.8 TR Water-cooled high-wall AC	1 No.
29	LOWER GROUND FLOOR H-108	1.8 TR Water-cooled high-wall AC	1 No.
30	LOWER GROUND FLOOR G-101	1.8 TR Water-cooled high-wall AC	1 No.
31	LOWER GROUND FLOOR G-102	1.8 TR Water-cooled high-wall AC	1 No.
32	LOWER GROUND FLOOR G-103	1.8 TR Water-cooled high-wall AC	1 No.
33	LOWER GROUND FLOOR G-104	1.8 TR Water-cooled high-wall AC	1 No.
34	LOWER GROUND FLOOR G-105	1.8 TR Water-cooled high-wall AC	1 No.
35	LOWER GROUND FLOOR G-106	1.8 TR Water-cooled high-wall AC	1 No.
36	LOWER GROUND FLOOR G-107	1.8 TR Water-cooled high-wall AC	1 No.
37	LOWER GROUND FLOOR G-108	1.8 TR Water-cooled high-wall AC	1 No.
38	LOWER GROUND FLOOR G-109	1.8 TR Water-cooled high-wall AC	1 No.
39	LOWER GROUND FLOOR A-101	1.8 TR Water-cooled high-wall AC	1 No.
40	LOWER GROUND FLOOR A-102	1.8 TR Water-cooled high-wall AC	1 No.
41	LOWERGROUNDFLOOR A-103	1.8 TR Water-cooled high-wall AC	1 No.
42	LOWER GROUND FLOOR A-104	1.8 TR Water-cooled high-wall AC	1 No.
43	LOWER GROUND FLOOR A-105	1.8 TR Water-cooled high-wall AC	1 No.
44	LOWER GROUND FLOOR A-106	1.8 TR Water-cooled high-wall AC	1 No.
45	LOWER GROUND FLOOR A-107	1.8 TR Water-cooled high-wall AC	1 No.
46	LOWERGROUNDFLOOR A-108	1.8 TR Water-cooled high-wall AC	1 No.
47	GROUND FLOOR A-101	1.8 TR Water-cooled high-wall AC	1 No.
48	GROUND FLOOR A-102	1.8 TR Water-cooled high-wall AC	1 No.

49	GROUND FLOOR A-103	1.8 TR Water-cooled high-wall AC	1 No.
50	GROUND FLOOR A-104	1.8 TR Water-cooled high-wall AC	1 No.
51	GROUND FLOOR A-105	1.8 TR Water-cooled high-wall AC	1 No.
52	GROUND FLOOR H-101	1.8 TR Water-cooled high-wall AC	1 No.
53	GROUND FLOOR H-102	1.8 TR Water-cooled high-wall AC	1 No.
54	GROUND FLOOR H-103	1.8 TR Water-cooled high-wall AC	1 No.
55	GROUND FLOOR H-104	1.8 TR Water-cooled high-wall AC	1 No.
56	GROUND FLOOR H-105	1.8 TR Water-cooled high-wall AC	1 No.
57	GROUND FLOOR H-106	1.8 TR Water-cooled high-wall AC	1 No.
58	GROUND FLOOR H-107	1.8 TR Water-cooled high-wall AC	1 No.
59	1ST FLOOR A-101	1.8 TR Water-cooled high-wall AC	1 No.
60	1ST FLOOR A-102	1.8 TR Water-cooled high-wall AC	1 No.
61	1ST FLOOR A-103	1.8 TR Water-cooled high-wall AC	1 No.
62	1ST FLOOR A-104	1.8 TR Water-cooled high-wall AC	1 No.
63	1ST FLOOR A-105	1.8 TR Water-cooled high-wall AC	1 No.
64	1ST FLOOR A-106	1.8 TR Water-cooled high-wall AC	1 No.
65	1ST FLOOR G-101	1.8 TR Water-cooled high-wall AC	1 No.
66	1ST FLOOR G-102	1.8 TR Water-cooled high-wall AC	1 No.
67	1ST FLOOR G-103	1.8 TR Water-cooled high-wall AC	1 No.
68	1ST FLOOR G-104	1.8 TR Water-cooled high-wall AC	1 No.
69	1ST FLOOR G-105	1.8 TR Water-cooled high-wall AC	1 No.
70	1ST FLOOR G-106	1.8 TR Water-cooled high-wall AC	1 No.
71	1ST FLOOR G-107	1.8 TR Water-cooled high-wall AC	1 No.
72	1ST FLOOR H-101	1.8 TR Water-cooled high-wall AC	1 No.
73	1ST FLOOR H-102	1.8 TR Water-cooled high-wall AC	1 No.
74	1ST FLOOR H-103	1.8 TR Water-cooled high-wall AC	1 No.
75	1ST FLOOR H-104	1.8 TR Water-cooled high-wall AC	1 No.
76	1ST FLOOR H-105	1.8 TR Water-cooled high-wall AC	1 No.
77	1ST FLOOR H-106	1.8 TR Water-cooled high-wall AC	1 No.
GUEST HOUSE			
78	INDUS I-101	1.8 TR Water-cooled high-wall AC	1 No.

79	INDUS I-102	1.8 TR Water-cooled high-wall AC	1 No.
80	INDUS I-103	1.8 TR Water-cooled high-wall AC	1 No.
81	INDUS I-104	1.8 TR Water-cooled high-wall AC	1 No.
82	INDUS I-105	1.8 TR Water-cooled high-wall AC	1 No.
83	INDUS I-106	1.8 TR Water-cooled high-wall AC	1 No.
84	INDUS I-107	1.8 TR Water-cooled high-wall AC	1 No.
85	INDUS I-108	1.8 TR Water-cooled high-wall AC	1 No.
86	INDUS I-201	1.8 TR Water-cooled high-wall AC	1 No.
87	INDUS I-202	1.8 TR Water-cooled high-wall AC	1 No.
88	INDUS I-203	1.8 TR Water-cooled high-wall AC	1 No.
89	INDUS I-204	1.8 TR Water-cooled high-wall AC	1 No.
90	INDUS I-205	1.8 TR Water-cooled high-wall AC	1 No.
91	INDUS I-206	1.8 TR Water-cooled high-wall AC	1 No.
92	INDUS I-207	1.8 TR Water-cooled high-wall AC	1 No.
93	INDUS I-208	1.8 TR Water-cooled high-wall AC	1 No.
94	INDUS I-301	1.8 TR Water-cooled high-wall AC	1 No.
95	INDUS I-302	1.8 TR Water-cooled high-wall AC	1 No.
96	INDUS I-303	1.8 TR Water-cooled high-wall AC	1 No.
97	INDUS I-304	1.8 TR Water-cooled high-wall AC	1 No.
98	INDUS I-305	1.8 TR Water-cooled high-wall AC	1 No.
99	INDUS I-306	1.8 TR Water-cooled high-wall AC	1 No.
100	INDUS I-307	1.8 TR Water-cooled high-wall AC	1 No.
101	INDUS I-308	1.8 TR Water-cooled high-wall AC	1 No.
102	INDUS SUIT ROOM -1 (2 Nos.)	1.8 TR Water-cooled high-wall AC	2 Nos.
103	INDUS SUIT ROOM -2 (2 Nos.)	1.8 TR Water-cooled high-wall AC	2 Nos.
104	INDUS SUIT ROOM -3 (2 Nos.)	1.8 TR Water-cooled high-wall AC	2 Nos.
105	BRAMHAPUTRA B-101	1.8 TR Water-cooled high-wall AC	1 No.
106	BRAMHAPUTRA B-102	1.8 TR Water-cooled high-wall AC	1 No.
107	BRAMHAPUTRA B-103	1.8 TR Water-cooled high-wall AC	1 No.
108	BRAMHAPUTRA B-104	1.8 TR Water-cooled high-wall AC	1 No.
109	BRAMHAPUTRA B-105	1.8 TR Water-cooled high-wall AC	1 No.

110	BRAMHAPUTRA B-106	1.8 TR Water-cooled high-wall AC	1 No.
111	BRAMHAPUTRA B-107	1.8 TR Water-cooled high-wall AC	1 No.
112	BRAMHAPUTRA B-108	1.8 TR Water-cooled high-wall AC	1 No.
113	BRAMHAPUTRA B-201	1.8 TR Water-cooled high-wall AC	1 No.
114	BRAMHAPUTRA B-202	1.8 TR Water-cooled high-wall AC	1 No.
115	BRAMHAPUTRA B-203	1.8 TR Water-cooled high-wall AC	1 No.
116	BRAMHAPUTRA B-204	1.8 TR Water-cooled high-wall AC	1 No.
117	BRAMHAPUTRA B-205	1.8 TR Water-cooled high-wall AC	1 No.
118	BRAMHAPUTRA B-206	1.8 TR Water-cooled high-wall AC	1 No.
119	BRAMHAPUTRA B-207	1.8 TR Water-cooled high-wall AC	1 No.
120	BRAMHAPUTRA B-208	1.8 TR Water-cooled high-wall AC	1 No.
121	BRAMHAPUTRA B-301	1.8 TR Water-cooled high-wall AC	1 No.
123	BRAMHAPUTRA B-302	1.8 TR Water-cooled high-wall AC	1 No.
124	BRAMHAPUTRA B-303	1.8 TR Water-cooled high-wall AC	1 No.
125	BRAMHAPUTRA B-304	1.8 TR Water-cooled high-wall AC	1 No.
126	BRAMHAPUTRA B-305	1.8 TR Water-cooled high-wall AC	1 No.
127	BRAMHAPUTRA B-306	1.8 TR Water-cooled high-wall AC	1 No.
128	BRAMHAPUTRA B-307	1.8 TR Water-cooled high-wall AC	1 No.
129	BRAMHAPUTRA B-308	1.8 TR Water-cooled high-wall AC	1 No.
130	SUTLEJ S-101	1.8 TR Water-cooled high-wall AC	1 No.
131	SUTLEJ S-102	1.8 TR Water-cooled high-wall AC	1 No.
132	SUTLEJ S-103	1.8 TR Water-cooled high-wall AC	1 No.
133	SUTLEJ S-104	1.8 TR Water-cooled high-wall AC	1 No.
134	SUTLEJ S-105	1.8 TR Water-cooled high-wall AC	1 No.
135	SUTLEJ S-106	1.8 TR Water-cooled high-wall AC	1 No.
136	SUTLEJ S-107	1.8 TR Water-cooled high-wall AC	1 No.
137	SUTLEJ S-108	1.8 TR Water-cooled high-wall AC	1 No.
38	SUTLEJ S-201	1.8 TR Water-cooled high-wall AC	1 No.
139	SUTLEJ S-202	1.8 TR Water-cooled high-wall AC	1 No.
140	SUTLEJ S-203	1.8 TR Water-cooled high-wall AC	1 No.
141	SUTLEJ S-204	1.8 TR Water-cooled high-wall AC	1 No.

142	SUTLEJ S-205	1.8 TR Water-cooled high-wall AC	1 No.
143	SUTLEJ S-206	1.8 TR Water-cooled high-wall AC	1 No.
144	SUTLEJ S-207	1.8 TR Water-cooled high-wall AC	1 No.
145	SUTLEJ S-208	1.8 TR Water-cooled high-wall AC	1 No.
146	SUTLEJ S-301	1.8 TR Water-cooled high-wall AC	1 No.
147	SUTLEJ S-302	1.8 TR Water-cooled high-wall AC	1 No.
148	SUTLEJ S-303	1.8 TR Water-cooled high-wall AC	1 No.
149	SUTLEJ S-304	1.8 TR Water-cooled high-wall AC	1 No.
150	SUTLEJ S-305	1.8 TR Water-cooled high-wall AC	1 No.
151	SUTLEJ S-306	1.8 TR Water-cooled high-wall AC	1 No.
152	SUTLEJ S-307	1.8 TR Water-cooled high-wall AC	1 No.
153	SUTLEJ S-308	1.8 TR Water-cooled high-wall AC	1 No.
154	SERVER ROOM(LIBRARY AHU)	1.8 TR Water-cooled high-wall AC	1 No.
WATER COOLED CASSETTE UNITS (25 Nos.)			
155	ADMIN(1st row 1st unit)	2 TR water-cooled cassette (FCU) AC Make: Caryaie,	1 No.
156	ADMIN(1st row 2nd unit)	2 TR water-cooled cassette (FCU) AC Make: Caryaie,	1 No.
157	ADMIN(1st row 3rd unit)	2 TR water-cooled cassette (FCU) AC Make: Caryaie,	1 No.
158	ADMIN(1st row 4th unit)	2 TR water-cooled cassette (FCU) AC Make: Caryaie,	1 No.
159	ADMIN(2nd row 1st unit)	2 TR water-cooled cassette (FCU) AC Make: Caryaie,	1 No.
160	ADMIN(2nd row 2nd unit)	2 TR water-cooled cassette (FCU) AC Make: Caryaie,	1 No.
161	ADMIN(2nd row 3rd unit)	2 TR water-cooled cassette (FCU) AC Make: Caryaie,	1 No.
162	ADMIN(2nd row 4th unit)	2 TR water-cooled cassette (FCU) AC Make: Caryaie,	1 No.
163	DIRECTOR OFF.(M. Room -1)	2 TR water-cooled cassette (FCU) AC Make: Caryaie,	1 No.
164	DIRECTOR OFF.(M. Room -2)	2 TR water-cooled cassette (FCU) AC Make: Caryaie,	1 No.

165	DIRECTOR OFF.(O.. Room -1)	2 TR water-cooled cassette (FCU) AC Make: Caryaire,	1 No.
166	DIRECTOR OFF.(O. Room -2)	2 TR water-cooled cassette (FCU) AC Make: Caryaire,	1 No.
167	DIRECTOR OFF.(Room -1)	2 TR water-cooled cassette (FCU) AC Make: Caryaire,	1 No.
168	DIRECTOR OFF.(Room 2)	2 TR water-cooled cassette (FCU) AC Make: Caryaire,	1 No.
169	AMAL RAY CHOUDHARY(10 PACKS) - 1	2 TR water-cooled cassette (FCU) AC Make: Caryaire,	1 No.
170	AMAL RAY CHOUDHARY(10 PACKS) - 2	2 TR water-cooled cassette (FCU) AC Make: Caryaire,	1 No.
171	EMMY NOETHER(30 PACKS) - 1st row 1st unit	2 TR water-cooled cassette (FCU) AC Make: Caryaire,	1 No.
172	EMMY NOETHER(30 PACKS) - 1st row 2nd unit	2 TR water-cooled cassette (FCU) AC Make: Caryaire,	1 No.
173	EMMY NOETHER(30 PACKS) - 1st row 3rd unit	2 TR water-cooled cassette (FCU) AC Make: Caryaire,	1 No.
174	EMMY NOETHER(30 PACKS) - 2nd row 1st unit	2 TR water-cooled cassette (FCU) AC Make: Caryaire,	1 No.
175	EMMY NOETHER(30 PACKS) - 2nd row 2nd unit	2 TR water-cooled cassette (FCU) AC Make: Caryaire,	1 No.
176	EMMY NOETHER(30 PACKS) - 2nd row 3rd unit	2 TR water-cooled cassette (FCU) AC Make: Caryaire,	1 No.
177	S. N. BOSE(8 PACKS) -1	2 TR water-cooled cassette (FCU) AC Make: Caryaire,	1 No.
178	PROGRAM OFFICE - Left - 1	2 TR water-cooled cassette (FCU) AC Make: Caryaire,	1 No.
179	PROGRAM OFFICE - Right - 2	2 TR water-cooled cassette (FCU) AC Make: Caryaire,	1 No.
AIR COOLED HIGH WALL SPLIT UNIT (41 Nos.)			
180	MAIN GATE OFF. RROM	1.5 TR air-cooled high-wall split AC unit.	1 No.
181	CHILD CARE FACILITY -01	1.5 TR air-cooled high-wall split AC unit.	1 No.
182	CHILD CARE FACILITY -02	1.5 TR air-cooled high-wall split AC unit.	1 No.
183	350 PACKS CHANGING ROOM	1.5 TR air-cooled high-wall split AC unit.	1 No.
184	KRISHNA LAB -01	1.5 TR air-cooled high-wall split AC unit.	1 No.

185	KRISHNA LAB -02	1.5 TR air-cooled high-wall split AC unit.	1 No.
186	50 PACKS CONTROL ROOM-01	1.5 TR air-cooled high-wall split AC unit.	1 No.
187	50 PACKS CONTROL ROOM-02	1.5 TR air-cooled high-wall split AC unit.	1 No.
188	DATA CENTRE NETWORKING. ROOM 01	1.5 TR air-cooled high-wall split AC unit.	1 No.
189	NEW DATA CENTRE -01	1.5 TR air-cooled high-wall split AC unit.	1 No.
190	NEW DATA CENTRE -02	1.5 TR air-cooled high-wall split AC unit.	1 No.
191	SRW OFFICE ROOM	1.5 TR air-cooled high-wall split AC unit.	1 No.
192	GYM - 01	1.5 TR air-cooled high-wall split AC unit.	1 No.
193	GYM - 02	1.5 TR air-cooled high-wall split AC unit.	1 No.
194	GYM - 03	1.5 TR air-cooled high-wall split AC unit.	1 No.
195	GYM - 04	1.5 TR air-cooled high-wall split AC unit.	1 No.
196	GYM - 05	1.5 TR air-cooled high-wall split AC unit.	1 No.
197	Engineering office utility block	1.5 TR air-cooled high-wall split AC unit.	5 No.
198	V.I.P CANTEEN -01	1.5 TR air-cooled high-wall split AC unit.	1 No.
199	V.I.P CANTEEN -02	1.5 TR air-cooled high-wall split AC unit.	1 No.
200	V.I.P CANTEEN -03	1.5 TR air-cooled high-wall split AC unit.	1 No.
201	V.I.P CANTEEN -04	1.5 TR air-cooled high-wall split AC unit.	1 No.
202	MEDICAL CENTRE OFFICE -01	1.5 TR air-cooled high-wall split AC unit.	1 No.
203	MEDICAL CENTRE ROOM-02	1.5 TR air-cooled high-wall split AC unit.	1 No.
204	FACULTY HOUSE	1.5 TR air-cooled high-wall split AC unit.	1 No.
205	FACULTY HOUSE	1.5 TR air-cooled high-wall split AC unit.	1 No.
206	FACULTY HOUSE	1.5 TR air-cooled high-wall split AC unit.	1 No.
207	FACULTY HOUSE	1.5 TR air-cooled high-wall split AC unit.	1 No.
208	FACULTY HOUSE	1.5 TR air-cooled high-wall split AC unit.	1 No.
209	FACULTY HOUSE	1.5 TR air-cooled high-wall split AC unit.	1 No.
210	FACULTY HOUSE	1.5 TR air-cooled high-wall split AC unit.	1 No.
211	AJANTHA GUEST HOUSE ROOM -01	1.5 TR air-cooled high-wall split AC unit.	1 No.
212	AJANTHA GUEST HOUSE ROOM -02	1.5 TR air-cooled high-wall split AC unit.	1 No.
213	AJANTHA GUEST HOUSE HALL	1.5 TR air-cooled high-wall split AC unit.	1 No.
214	ELECTRICAL OFFICE	1.5 TR air-cooled high-wall split AC unit.	1 No.

215	BATTERY U.P.S ROOM -01	1.5 TR air-cooled high-wall split AC unit.	1 No.
216	BATTERY U.P.S ROOM -02	1.5 TR air-cooled high-wall split AC unit.	1 No.
AIR COOLED CASSETTE UNITS (21 Nos.)			
217	350 Packs Control Room	2 TR air-cooled cassette AC	2 Nos.
218	100 Packs Control Room	2 TR air-cooled cassette AC	2 Nos.
219	Nambu Meeting Hall	2 TR air-cooled cassette AC	4 Nos.
220	Obaid Siddiqui Meeting Room	2 TR air-cooled cassette AC	2 Nos.
221	CHERN LECTURE HALL	2 TR air-cooled cassette AC	4 Nos.
222	FEYNMAN LECTURE HALL -01	2 TR air-cooled cassette AC	4 Nos.
223	NEW STUDYING ROOM -01	2 TR air-cooled cassette AC	3 Nos.
ELECTRICAL PANEL & BUILDING MANAGEMENT SYSTEM (BMS)			
224	BMS IN HVAC PLANT	BMS system with sensor and control along with 8 Nos. motorized valve	1 Nos.
225	Total Electrical Panel	Electrical Panel	15 Nos.
226	Total DDC Panel	DDC Panel along with Co2 detector and thermostat sensor	5 Nos.

ANNEXURE - B**GENERAL TERMS AND CONDITIONS OF CONTRACT****Note:**

1. The employees/ workers employed shall be trained and experienced to handle the services as per the Scope of work mentioned in the Annexure 'A'. If such experienced hands are not available, either because the service is extremely specialized and only in house training is possible, at least a certain percentage of employees/workers shall be experienced / trained who shall be able to impart training / expertise to others.
2. The Contractor shall provide the name and details of his personnel. A list of all the names shall be submitted at the beginning of the contract, along with a copy of each appointment order and whenever there is a change. No personnel will be changed unless ICTS has asked for it or without advance approval of ICTS.
3. The Contractor shall ensure that no contract employees nor anyone from his side use ICTS transport to come to the work spot or return. The Contractor shall use emergency services like medical help and emergency vehicles of ICTS in the event of any accident or emergency to his employees, though all responsibility for such accidents and any injury / death and or loss / damage will fully rest with the Contractor.
4. At all points of time, there must be a minimum of 90% workers attendance per day. In any case there shall be 100% daily attendance to be ensured. Any absence or shortage beyond this may be managed by giving over time; shortage or absenteeism beyond this percentage will be penalized including termination of the contract. Payment will however be restricted to the actual number of people as physically provided in each month.
5. The Tenderer must indicate the deviation in Annexure – C, with reasons thereof and only if such deviation (s) is/are part of the work order issued by ICTS, will the deviation (s) become part of the agreement.
6. The rates quoted shall be valid for 2 years from the date of Work Order followed by joint agreement.

The Contractor shall supply as per Table-A (Uniform & PPE Kits), Table-B (Mandatory Tools for deployed Manpower), Table-C (Mandatory Equipment for work Site) within a month of award of contract and a fresh set of Uniform & PPE Kits to be issued if the contract is renewed beyond one year by the 13th month on renewal for 2nd year and 25th month on renewal of 3rd year .

ANNEXURE – C

SCHEDULE OF DEVIATIONS

Sl. No.	Requirement of the Centre	Sl. No. As per schedule	Deviation Proposed.

Name and Address of the Tenderer

Signature of the Tenderer

ANNEXURE – D**STATUTORY OBLIGATIONS:**

The Contractor will strictly observe and follow the following statutory regulations/acts as well as any new rules / changes as applicable, during the period of this contract. He shall be solely responsible for failure to fulfill these statutory obligations. The successful bidder shall indemnify / is deemed to have indemnified ICTS against all such liabilities which are likely to arise out of the Contractor's failure to fulfill such statutory obligations. All documents, registers pertaining to this contract shall be maintained meticulously and shall be provided periodically for inspection. The salient features of the statutory regulations/acts are listed below and it is the responsibility of the selected Contractor that these regulations/acts and their amendments from time to time are strictly adhered to in totality. Even if the Contractor appointed for this contract may be exempt from any or all of the following employee-friendly legislation, it is incumbent on all Contractors to cover all their employees / workmen covered by this tender with these cover / benefits.

1. The Contract Labour (Abolition & Regulations Act, 1970):

The Contractor shall obtain and produce a license from the Labour Commissioner's office. They will maintain and submit to us for inspection on demand such records as Muster Roll, Payment Register, Advance Register, Fines Register, etc.

2. Payment of Wages Act:

It is necessary that the Contractor's employees are paid their wages payable for one month of working by 7th of the succeeding calendar month.

The Contractor will receive payment from us only after you have disbursed in full the wages payable to his employees. The wages shall be distributed in our premises and one of the representatives from the Centre will be nominated to witness the disbursement of the wages, and sign the disbursement report.

3. Provident Fund Act:

The contracts shall cover their employees under the Provident Fund Scheme. The premia shall be paid as per existing rule partly deducted from their employees and the balance shall be from contribution from the successful bidder, proof of such payment shall be submitted (including employee's and employer's contribution) every month as provided under Section 12 of the Act. The PF contribution of the Employer will be 13.61% on (Basic + VDA), but restricted to Rs.6,500/- (Basic + VDA) per month.

4. Employees State Insurance Scheme:

The contract shall cover all your employees under Employees State Insurance Scheme as provided for under the relevant rules and shall remit the premium without default. In case the ESI coverage is not possible, they have to be covered under equivalent and suitable insurance.

5. Minimum Wages Act:

The contract shall pay well above the minimum wages to each of their employees. Such rates shall be the rate implied or agreed between ICTS and the Contractor.

6. Workmen's Compensation (ELI):

All employees/ workers shall be covered for injury / depth under Workmen's Compensation Act 1923 by an Employer's Liability Insurance in the name of the Contractor to cover all employed by the Contractor in ICTS. ELI premia is of the order of 3% on (salary + DA) subject to a maximum salary of Rs.4,000.00

7. Payment of Bonus Act, 1965:

Bonus shall be paid to all employees who have worked for a minimum of 30 days in the relevant accounting year. Bonus will be limited to 8.33% of total salary earned in the relevant accounting year or Rs. 6,999/- whichever is less. Bonus shall be paid by the Contractor to his contract employees monthly or once in a year before Dussehra/Diwali.

8. Karnataka Labour Welfare Fund Act 1965.**9. General:**

Contribution towards PF, ESI & ELI shall be paid to the Contractor only in succeeding months on submission of proof of having paid the premium / subscription. Premia towards ELI shall be paid to the Contractor on a pro-rata basis every month on submission of original policy and receipt. All premia/ contribution / subscription collected towards such benefits shall be/shall have been promptly paid towards the purpose for which it is collected. If for any reason this has not been possible, the Contractor shall promptly inform ICTS, which will suggest ways and means to put such unpaid amounts to proper use.

10. Karnataka Shops and Establishment Act 1961: Relevant for contract employee's Earned Leave**Miscellaneous**

ICTS will not be responsible for death, accident or injury to the Contractor's employees engaged by him, which may arise in the course of their duty at our premises, nor shall we be responsible and be liable to pay damages or compensation to such persons or to third parties. The Contractor shall at all times indemnify and keep ICTS indemnified against all claims which may be under the Workmen's Compensation Act, 1923, or any statutory modifications thereof or otherwise for or in respect of any damages or compensation payable in consequence of any accident or injury sustained by any workman or other person/ person at the Centre or premises, building, equipments etc. is attributable to the Contractor or his workmen, such damages shall be made good by the Contractor or his workmen, such damages shall be made good by the Contractor.

IN WITNESS WHEREOF the parties hereto have set and subscribed their respective signatures and seal to the writing herein above on the date, month and year mentioned herein.

"CENTRE"

"CONTRACTOR"

WITNESS:

ANNEXURE – E

**International Centre for Theoretical Sciences
Tata Institute of Fundamental Research
Engineering Services & Maintenance**

UNDERTAKING BY THE TENDERER

1. I/we intend to carry out the subject work by resorting to engage..... Nos. of work force in a month.

Details of Operations	No of Persons Proposed
1. Supervisor - Highly Skilled	
2. Technician - Skilled	
3. Work Assistant - Unskilled	
TOTAL WORKFORCE	

2. I/We undertake to pay the wages equal to or more than the minimum wages as applicable (Wages fixed by Ministry of Labour, Government of India (or) Government of Karnataka (or) Department recommended wages whichever is higher)

3. I/We undertake to contribute for workers towards PF,ESI, and ELI from the employer's side as fixed by the relevant authorities.

4. I/We undertake to pay the Bonus at the rate of 8.33 % of the total wages or Rs. 6,999/- whichever is less.

5. I/We are fully responsible for the safety and security of the men, material, tools & equipment used in the scope of the contract.

Name and Address of the Tenderer

Signature of the Tenderer

ANNEXURE – F
PRICE BID

Schedule 1

TABLE A

Sl No	Statutory Benefits	% to be collected from employee	% to be collected by the Contractor	Total %
1	PF	As per the statutory law in force		
2	ESI	As per the statutory law in force		
3	Bonus	-	8.33*	8.33*
4	ELI (Workman's Comp)	Optional		

* The amount of bonus payable is 8.33% subject to maximum of Rs. 6,999/- per annum (the ceiling for calculation purpose from the salary or Wages of Rs. 21,000/- per month as per Section 2(13) of Bonus Act, 1965.

Total bid amount per month inclusive of all taxes and duties as per Scope of Work and other details as contained in the tender document (please furnish in table below based on scope of work as shown in Annexure-A):

NOTE: PRICE BID TO BE SUBMITTED IN THE FORMAT PROVIDED. THE BOQ FORMAT IS TO BE DOWNLOADED AND ONLY THE SKY BLUE CELLS TO BE FILLED UP BY BIDDERS. NO OTHER CELLS SHOULD BE ALTERED. ONCE THE DETAILS ARE FILLED UP, FILE IS TO BE SAVED AND SUBMITTED ONLINE WITHOUT CHANGING THE FILE NAME. IF THE BOQ FILE IS FOUND TO BE MODIFIED BY THE BIDDER, THE BID WILL BE REJECTED.